Is this same as water shortage plan?
Water conservation plan. Shortage plan waive for this permit
March 16, 2009

Mr. Ken C. Kawahara, Deputy Director
State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Kawahara:

Re: Water Use Permits, Puuloa Ground-Water Management Area, Oahu
WUP No. 855 for Well No. 1901-08 (new permit)
WUP No. 857 for Well No. 2001-12 (supersedes WUP No. 793)
WUP No. 858 for Well No. 1901-05 (supersedes WUP No. 794)
WUP No. 859 for Well Nos. 1900-24 and 2000-06 (new permit)

As required by the Conservation Conditions Ewa Caprock Water Use Permits attached to your February 12, 2009 letter, enclosed please find the Water Conservation Program and Plan for irrigation of landscaped areas in Ewa by Gentry. The plan was prepared by our landscape architects, Brownlie and Lee, for the Ewa by Gentry development.

Please call me at 599-8229 if you require additional information.

Very truly yours,

GENTRY HOMES, LTD.

Michael J. Brant, P. E.
Vice President – Engineering

cc: T. Nance, TNWRE

/DMNWpUsePermits03-2009.doc
EWA BY GENTRY EWA CAPROCK WATER CONSERVATION PROGRAMS AND PLANS

Ewa by Gentry shall minimize demand for non-potable water by:

1. Utilizing low maintenance water efficient plants which are brackish water, drought, wind and pest tolerant. Planting shall have minimal susceptibility to insect and disease to minimize usage of insecticides and fungicides. Groundcover species shall densely cover the ground to minimize weed establishment and germination and thus minimize the application of herbicides.
2. Planting trees, shrubs and groundcovers which have proven themselves in the growing environment at Ewa by Gentry including:

<table>
<thead>
<tr>
<th>Native</th>
<th>Non Native</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees</td>
<td>Trees</td>
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<tr>
<td>Alahee</td>
<td>Autograph</td>
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<tr>
<td>Coconut</td>
<td>Beach Heliotrope</td>
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<tr>
<td>Dwarf Hau</td>
<td>Bridal Veil Plumeria</td>
</tr>
<tr>
<td>Hala</td>
<td>California Pepper</td>
</tr>
<tr>
<td>Kou</td>
<td>Geiger Tree</td>
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<tr>
<td>Lonomea</td>
<td>Hong Kong Orchid</td>
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<tr>
<td>Loulu</td>
<td>Italian Cypress</td>
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<tr>
<td></td>
<td>Olive</td>
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<td></td>
<td>Plumeria</td>
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<td>Podocarpus</td>
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<td>Silver Buttonwood</td>
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<td>Silver Trumpet</td>
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<tr>
<td></td>
<td>Travelers Tree</td>
</tr>
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<td></td>
<td>White Bird of Paradise</td>
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<td></td>
<td>Palm</td>
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<td></td>
<td>Areca Palm</td>
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<td></td>
<td>Bottle Palm</td>
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<td></td>
<td>Coconut</td>
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<td>Dwarf Date</td>
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<td></td>
<td>Giant Cycad</td>
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<td></td>
<td>Manila Palm</td>
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<td></td>
<td>Neodypsis</td>
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<td>Woodyetia</td>
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<tr>
<td>Shrubs</td>
<td>Shrubs</td>
</tr>
<tr>
<td>Ae‘ne</td>
<td>Agave</td>
</tr>
<tr>
<td>Akulikuli</td>
<td>Bird-of-Paradise</td>
</tr>
<tr>
<td>Carex</td>
<td>Caricature Plant</td>
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<tr>
<td>Hinahina</td>
<td>Copperleaf</td>
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<tr>
<td>Kului</td>
<td>Croton Mame</td>
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<tr>
<td>Mountain Naupaka</td>
<td>Dwarf Spider Lily</td>
</tr>
<tr>
<td>Naio</td>
<td>Eldorado</td>
</tr>
<tr>
<td>Nanu</td>
<td>Galphimia</td>
</tr>
<tr>
<td>Naupaka</td>
<td>Green Eranthemum</td>
</tr>
<tr>
<td>Groundcovers</td>
<td>Groundcovers</td>
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<td>Ae‘ne</td>
<td>Lilinol Ti</td>
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<tr>
<td>Akulikuli</td>
<td>Natal Plum</td>
</tr>
<tr>
<td>Carex</td>
<td>Purple Eranthemum</td>
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<tr>
<td>Hinahina</td>
<td>Sago</td>
</tr>
<tr>
<td>Hunakai</td>
<td>Spider Lily</td>
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<tr>
<td>Naio Papa</td>
<td>Yucca</td>
</tr>
</tbody>
</table>
EWA BY GENTRY EWA CAPROCK WATER CONSERVATION PROGRAMS AND PLANS (cont’d)

Groundcovers
Dwarf Ice Plant
Ice Plant
Meyers Asparagus Fern
Society Garlic

3. Utilizing plant material which develops a minimum of undesired or excessive growth or foliage
   which must be frequently trimmed.

4. Installing and maintaining organic mulch in groundcover areas where feasible and beneficial to
   plant growth to reduce evaporation and for weed and erosion control. Mulch shall be spread to
   a thickness of 2-inches in wide beds below hedge planting to minimize weed establishment and
   eliminate the need for groundcover and related water and maintenance. Mulch shall not be
   installed to excessive depths which will inhibit plant growth or present an environment which
   creates insect or slug problems.

5. Maintaining landscaping with minimal application of pesticides and fertilizer. Fertilizer shall not
   be applied on established planting more frequently than on a quarterly basis. Fertilizer shall not
   be applied if it will result in excessive plant growth or where current plant condition is excellent.

6. Improving land management plans to conserve water, this includes at least annual laboratory
   soil analysis to determine current soil fertility levels and necessary nutrient supplements. Rainfall
   and run-off shall be captured thru site and landscape grading to create sump areas and
   minimize the use of berms.

Ewa by Gentry shall improve efficiency in use of non-potable water and reduce losses and waste of non-
   potable water by:

1. Utilizing efficiently designed landscaping and irrigation systems.

2. Monitoring irrigation requirements and controlling usage by checking the condition of all
   landscaping on at least a weekly basis and adjusting irrigation duration and frequency
   accordingly.

3. Managing irrigation scheduling to minimize water demand by monitoring the weather on both a
   daily and seasonal basis and adjusting irrigation schedules and operating times and duration of
   irrigation cycles accordingly. Turning off irrigation controllers when raining.

4. Eliminating water wastage by checking irrigation system and promptly repairing leaks and
   breaks in irrigation pipes. Irrigation system shall be checked at least monthly to ensure that the
   radius and arc of each irrigation head is correct and that each head is not overthrowing
   pavement or spraying onto structures. Leaks and malfunctioning irrigation equipment reported
   by residents to the Homeowners Association or the landscape maintenance contractor shall be
   repaired no later than the following day, excluding Sunday.

5. Maintaining and improving irrigation system as necessary. Consult with Landscape Architect
   who designed the existing irrigation system prior to making modifications to the irrigation
   system which will change existing flow rates or equipment application rates or area of coverage.
March 2, 2009

Mr. Wayne M. Hashiro, P.E., Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Dear Mr. Hashiro:

Ewa by Gentry, Irrigation Source Contingency Plan
Water Use Permit Nos. 855, 857, 858, and 859

Enclosed for your information is a copy of the irrigation water supply contingency plan submitted by Gentry Homes, Ltd. Gentry Homes submitted this plan in accordance with Special Condition 4 of the captioned water use permits, which states:

4. The permittee shall submit a contingency plan for water use in the event the chloride concentration in the permitted well(s) exceeds the 1,000 mg/l sustainable capacity limit established for Ewa caprock aquifer sources, in which case the permittee shall seek an alternative source of supply. The contingency plan shall be submitted to the Commission within 30 days of the issuance of this permit.

The Commission included Special Condition 4, as a condition of permit approval on January 22, 2009, in response to a comment received from the Board of Water Supply on Gentry Homes' applications for these permits.

If you have any questions, please contact Denise Mills of the Commission staff at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DEM:ss
Enclosure
c: Mike Brant, Gentry Homes
- Copy to BWS
- still waiting for WVP 856 plan.
February 20, 2009

Mr. Ken C. Kawahara, Deputy Director  
State of Hawaii  
Department of Land and Natural Resources  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Kawahara:

Subject: Water Use Permits, Puuloa Ground-Water Management Area, Oahu  
WUP No. 855 for Well No. 1901-08 (new permit)  
WUP No. 857 for Well No. 2001-12 (supersedes WUP No. 793)  
WUP No. 858 for Well No. 1901-05 (supersedes WUP No. 794)  
WUP No. 859 for Well Nos. 1900-24 and 2000-06 (new permit)

In response to your February 12, 2009 letter, Special Condition 4, should the chloride concentration in any of the permitted wells exceed the 1,000 mg/l limit, the following action will be taken:

1. The amount of water drawn from the non-performing well (well exceeding chloride limit) will be reduced. The irrigation system of the nearby area will be adjusted to allow nearby wells to supplement shortfall in system with reduced amount of water drawn.

2. If adjustment of water use fails or is not feasible, Gentry will apply for a variance to exceed the specified chloride limit.

3. If a variance is not granted, a new well(s) will be developed to provide additional sources of water for use in the irrigation system.

If you require additional information, please feel free to call me at 599-8229.

Very truly yours,

GENTRY HOMES, LTD.

Michael J. Brant, P.E.  
Vice President – Engineering

/sacm

cc: T. Nance, TNWRE

h:/selinam/word/ewa/wells/dlnrwusepermits2009.doc
<table>
<thead>
<tr>
<th>FROM: Denise</th>
<th>DATE: 2/9/09</th>
<th>SUSPENSE DATE:</th>
</tr>
</thead>
</table>

| TO: CHENG, C. | INIT. | TO: KUNIMURA, I. | INIT: 1 | FOR: Approval |
| CHING, F. | 4 | MILLS, D. | 3 | Signature |
| CHONG, R. | 2 | OHYE, L. | 4 | Information |
| DANBARA, S. | 3 | OHYE, M. |   |   |
| ENGLAND, D. | 4 | OSHIRO, K. |   |   |
| FUJII, N. |   | SAKODA, E. |   |   |
| HARDY, R. | 2 | SWANSON, S. |   |   |
| HOAGBIN, S. |   | TORRES, R. |   |   |
| ICE, C. |   | UYENO, D. |   |   |
| IMATA, R. |   | YODA, K. |   |   |
| KAWAHARA, K. | 3 | YOSHINAGA, M. |   |   |
| KIMURA, J. |   |   |   |   |

PLEASE:
- See Me
- Review & Comment
- Take Action
- Type Draft
- Type Final
- File
- Xerox ___ copies

Corrections to Gentry permits - yellow highlight & strike out kept. (Track Changes caused the whole merge file to show as changed.)

O.K.
**Sender: Complete This Section**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

   Mr. Mike Brant  
   Gentry Homes, Ltd.  
   Honolulu, HI

2. Article Number  
   (Transfer from service label)

   WUP Nos. 855, 857 - 859

3. Service Type
   - Certified Mail
   - Registered
   - Insured Mail
   - Express Mail
   - Return Receipt for Merchandise
   - C.O.D.

   7006 2150 0003 3953 9463

4. Restricted Delivery? (Extra Fee)  
   - Yes

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**Complete This Section on Delivery**

<table>
<thead>
<tr>
<th>A. Signature</th>
<th>B. Received by (Printed Name)</th>
<th>C. Date of Delivery</th>
</tr>
</thead>
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<tr>
<td>X Marlan</td>
<td>Shelley Mornac</td>
<td>2/17</td>
</tr>
</tbody>
</table>

<table>
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<tbody>
<tr>
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</tbody>
</table>

**Form 3811, February 2004**

Domestic Return Receipt  
102595-02-M-1540
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. Box 621
Honolulu, Hawaii  96809

Attn: Denise
<table>
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<th>Amount</th>
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<tbody>
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<tr>
<td>Certified Fee</td>
<td>$2.76</td>
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<tr>
<td>Return Receipt Fee (Endorsement Required)</td>
<td>$2.32</td>
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<tr>
<td>Restricted Delivery Fee (Endorsement Required)</td>
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</tr>
<tr>
<td>Total Postage &amp; Fees</td>
<td>$6.41</td>
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</tbody>
</table>

Mr. Mike Brant  
Gentry Homes, Ltd.  
Honolulu, HI  

FEB 12, 2009  
Postmark Here  

U.S. Postal Service™  
CERTIFIED MAIL™ RECEIPT  
(Domestic Mail Only; No Insurance Coverage Provided)
tified Mail Provides:

A mailing receipt
A unique identifier for your mailpiece
A record of delivery kept by the Postal Service for two years

Important Reminders:

Certified Mail may ONLY be combined with First-Class Mail® or Priority Mail®. Certified Mail is not available for any class of international mail.

No insurance coverage is provided with Certified Mail. For valuables, please consider Insured or Registered Mail.

• For an additional fee, a Return Receipt may be requested to provide proof of delivery. To obtain Return Receipt service, please complete and attach a Return Receipt (PS Form 3811) to the article and add applicable postage to cover the fee. Endorse mailpiece "Return Receipt Requested". To receive a fee waiver for a duplicate return receipt, a USPS® postmark on your Certified Mail receipt is required.

• For an additional fee, delivery may be restricted to the addressee or addressee’s authorized agent. Advise the clerk or mark the mailpiece with the endorsement "Restricted Delivery".

• If a postmark on the Certified Mail receipt is desired, please present the article at the post office for postmarking. If a postmark on the Certified Mail receipt is not needed, detach and affix label with postage and mail.

IMPORTANT: Save this receipt and present it when making an inquiry

PS Form 3800, August 2006 (Reverse) PSN 7530-02-000-9047
February 12, 2009

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Mike Brant
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Dear Mr. Brant:

Water Use Permits Approved
WUP No. 855 for Well No. 1901-08 (new permit)
WUP No. 857 for Well No. 2001-12 (supersedes WUP No. 793)
WUP No. 858 for Well No. 1901-05 (supersedes WUP No. 794)
WUP No. 859 for Well Nos. 1900-24 and 2000-06 (new permit)

Puuloa Ground-Water Management Area, Oahu

This letter transmits your water use permits for the following Gentry Homes irrigation wells: Gentry Area 45 (Well No. 1901-08); Gentry Area 13 (Well No. 1901-05); Keaunui Area 30 (Well No. 2001-12); and Gentry Area 35 #1 and #2 (Well Nos. 1900-24 and 2000-06, respectively). This transmittal corrects the permits that we issued to you on January 27, 2009, notably, that you are not required to submit a water shortage plan for the four wells subject to these permits. Your permits, which were approved by the Commission on Water Resource Management on January 22, 2009, authorize the following quantities of water use on a 12-month moving average basis.

<table>
<thead>
<tr>
<th>Well Number and Name</th>
<th>1901-08</th>
<th>2001-12</th>
<th>1901-05</th>
<th>1900-24</th>
<th>2000-06</th>
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</thead>
<tbody>
<tr>
<td>WUP No.</td>
<td>855</td>
<td>857</td>
<td>858</td>
<td>859</td>
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<tr>
<td>Quantity permitted (mgd)</td>
<td>0.066</td>
<td>0.225</td>
<td>0.037</td>
<td>0.255</td>
<td>Battery w/1900-24</td>
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<tr>
<td>Permitted use area (acres)</td>
<td>10.62</td>
<td>36.09</td>
<td>5.94</td>
<td>41.00</td>
<td>--</td>
</tr>
<tr>
<td>Pump capacity (gpm)</td>
<td>100</td>
<td>430</td>
<td>355</td>
<td>150</td>
<td>--</td>
</tr>
</tbody>
</table>

As part of the Commission's approval, the following special conditions were added to each of the enclosed permits under Standard Permit Condition 19:

**Special Conditions**

1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke the permit after a hearing.

2. This permit is approved under the assumption that reclaimed wastewater will become available for reuse as an alternative supply source.
3. Pumping shall cease immediately if chloride measurements show that the brackish water drawn by the well(s) exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve variance requests is delegated to the Chairperson.

4. The permittee shall submit a contingency plan for water use in the event the chloride concentration in the permitted well(s) exceeds the 1,000 mg/l sustainable capacity limit established for Ewa caprock aquifer sources, in which case the permittee shall seek an alternative source of supply. The contingency plan shall be submitted to the Commission within 30 days of the issuance of this permit.

5. In the event that the tax map key(s) at the location(s) of the water use is (are) changed, the permittee shall notify the Commission in writing of the tax map key change(s) within thirty (30) days after the permittee receives notice of the tax map key change(s).

6. Standard Condition 16 is waived for brackish water wells.

7. The permittee shall comply with the conservation conditions for Ewa caprock water use permits, attached to this permit.

Enclosed with this approval letter are the following:

1. Water Use Permit No. 855
2. Water Use Permit No. 857
3. Water Use Permit No. 858
4. Water Use Permit No. 859
5. Conservation Conditions – Ewa Caprock Water Use Permits
6. Your monthly water use report form (for five irrigation supply wells)

The special conditions listed above and the Ewa Caprock water use permit conservation conditions should be kept with each of the subject permits. Please be sure to read all the conditions of your approved permits.

We draw your attention to two specific conditions of each permit that require your response. First, Standard Condition 10 requires you to keep a record of your monthly total pumpage, water level in the well, chloride concentration, and water temperature measurements. This information must be submitted to the Commission on a monthly basis using the enclosed water use report form. You may make copies of the enclosed report form or download blank forms, as needed, from our website at http://www.hawaii.gov/dlnr/cwrm/resources_permits.htm.

Second, Special Condition 4 requires you to submit a contingency plan for water use in the event that chloride concentrations in the wells covered by these permits exceeds the 1,000 mg/l chloride limit established for Ewa caprock irrigation water supply sources. Your contingency plan must be submitted within thirty (30) days of the issuance date of this permit.

If you have any questions, please call Denise Mills of the Commission staff at 587-0251.

Sincerely,

[Signature]

LAURA H. THIELEN
Chairperson

Attachments: WUP Nos. 855, 857, 858, and 859
Conservation Conditions – Ewa Caprock Water Use Permits
Water Use Report Form
GROUND-WATER USE PERMIT
WUP NO. 855

PERMITTEE

Permittee/Water User
Gentry Homes, Ltd.

Address
P.O. Box 295
Honolulu, HI 96809

Landowner of Source
Gentry Homes, Ltd.

Address
P.O. Box 295
Honolulu, HI 96809

PERMITTED SOURCE INFORMATION

Island
Oahu

Water Management Area

Aquifer Sector
Ewa Caprock

Aquifer System
Puuloa

System Sustainable Yield
N/A (1,000 mg/l chloride concentration limit for irrigation uses)

Well Name
Gentry Area 45

State Well Nos.
1901-08

PERMITTED USE INFORMATION

Reasonable beneficial use
Irrigation

Withdrawal (12 month moving ave.)
0.066 mgd

Location of water use

TMK(s)
9-1-069-005, por (10.62 acres)

State land use classification
Urban

County zoning classification
R-5 and A-1

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the permittee is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its January 22, 2009, meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.
10. Approved flowmeters must be installed to measure monthly ground-water withdrawals, and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (see attached form).

11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Attachments: Conservation Conditions – Ewa Caprock Water Use Permits
• Sender: Please print your name, address, and ZIP+4 in this box •

COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. Box 621
Honolulu, Hawaii 96809

ATHN: Denise
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1. Article Addressed to:

   Mr. Mike Brant
   Gentry Homes, Ltd.
   P.O. Box 295
   Honolulu, HI 96809

   (UPN Nos. 855 857 858 3979)

2. Article Number
   (Transfer from service label) 7006 2150 0003 3953 9432

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Sent To
Mr. Mike Brant
Gentry Homes, Ltd.
Honolulu, HI

Date of Mailing: 7/25/06
70510000039537432

WUP No.: 855, 857, 858, 859
January 27, 2009

Mr. Mike Brant
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Dear Mr. Brant:

Water Use Permits Approved
WUP No. 855 for Well No. 1901-08 (new permit)
WUP No. 857 for Well No. 2001-12 (supersedes WUP No. 793)
WUP No. 858 for Well No. 1901-05 (supersedes WUP No. 794)
WUP No. 859 for Well Nos. 1900-24 and 2000-06 (new permit)

Puuloa Ground-Water Management Area, Oahu

This letter transmits your water use permits for the following Gentry Homes irrigation wells:
Gentry Area 45 (Well No. 1901-08); Gentry Area 13 (Well No. 1901-05); Keaunui Area 30
(Well No. 2001-12); and Gentry Area 35 #1 and #2 (Well Nos. 1900-24 and 2000-06, respectively). Your permits, which were approved by the Commission on Water Resource Management on January 22, 2009, authorize the following quantities of water use on a 12-month moving average basis.

<table>
<thead>
<tr>
<th>Well Number and Name</th>
<th>1901-08 Gentry Area 45</th>
<th>2001-12 Keaunui Area 30</th>
<th>1901-05 Gentry Area 13</th>
<th>1900-24 Gentry Area 31, #1</th>
<th>2000-06 Gentry Area 35, #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>WUP No.</td>
<td>855</td>
<td>857</td>
<td>858</td>
<td>859</td>
<td>859</td>
</tr>
<tr>
<td>Quantity permitted (mgd)</td>
<td>0.066</td>
<td>0.225</td>
<td>0.037</td>
<td>0.255</td>
<td>Battery w/1900-24</td>
</tr>
<tr>
<td>Permitted use area (acres)</td>
<td>10.62</td>
<td>36.09</td>
<td>5.94</td>
<td>41.00</td>
<td>-</td>
</tr>
<tr>
<td>Pump capacity (gpm)</td>
<td>100</td>
<td>430</td>
<td>355</td>
<td>150</td>
<td>-</td>
</tr>
</tbody>
</table>

As part of the Commission's approval, the following special conditions were added to each of the enclosed permits under Standard Permit Condition 19:
Special Conditions

1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke the permit after a hearing.

2. This permit is approved under the assumption that reclaimed wastewater will become available for reuse as an alternative supply source.

3. Pumping shall cease immediately if chloride measurements show that the brackish water drawn by the well(s) exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve variance requests is delegated to the Chairperson.

4. The permittee shall submit a contingency plan for water use in the event the chloride concentration in the permitted well(s) exceeds the 1,000 mg/l sustainable capacity limit established for Ewa caprock aquifer sources, in which case the permittee shall seek an alternative source of supply. The contingency plan shall be submitted to the Commission within 30 days of the issuance of this permit.

5. In the event that the tax map key(s) at the location(s) of the water use is (are) changed, the permittee shall notify the Commission in writing of the tax map key change(s) within thirty (30) days after the permittee receives notice of the tax map key change(s).

6. The permittee shall comply with the conservation conditions for Ewa caprock water use permits, attached to this permit.

Enclosed with this approval letter are the following:

1. Water Use Permit No. 855
2. Water Use Permit No. 857
3. Water Use Permit No. 858
4. Water Use Permit No. 859
5. Conservation Conditions – Ewa Caprock Water Use Permits
6. Your monthly water use report form (for five irrigation supply wells)

The special conditions listed above and the Ewa Caprock water use permit conservation conditions should be kept with each of the subject permits. Please be sure to read all the conditions of your approved permits.

We draw your attention to three specific conditions of each permit that require your response. First, Standard Condition 10 requires you to keep a record of your monthly total pumpage, water level in the well, chloride concentration, and water temperature measurements. This information must be submitted to the Commission on a monthly basis using the enclosed water use report form. You may make copies of the enclosed report form or download blank forms, as needed, from our website at http://www.hawaii.gov/dlnr/cwrml/resources_permits.htm.

Second, you are required to submit a water shortage plan to the Commission within thirty (30) days of the issuance date of these permits (see Standard Condition 16). Your water shortage plan should state what you are willing to do if the Commission declares a water shortage situation in the Ewa Caprock Ground-Water Management Area, and can be as concise as a one-page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from some or all sources. The Commission is required by law to formulate a plan to implement
such area-wide reductions, which should accommodate, include, and be consistent with your plan. Therefore, we need your water shortage plan to assist us in formulating the Commission's overall Water Shortage Plan.

Third, Special Condition 4 requires you to submit a contingency plan for water use in the event that chloride concentrations in the wells covered by these permits exceeds the 1,000 mg/l chloride limit established for Ewa caprock irrigation water supply sources. Your contingency plan must be submitted within thirty (30) days of the issuance date of this permit. This plan may be combined with your water shortage plan, although the contingency plan is expected to cover longer-range supply needs than would normally be covered by a water shortage plan.

If you have any questions, please call Denise Mills of the Commission staff at 587-0251.

Sincerely,

[Signature]
LAURA H. THIELEN
Chairperson

Attachments:  WUP Nos. 855, 857, 858, and 859
Conservation Conditions – Ewa Caprock Water Use Permits
Water Use Report Form
GROUND-WATER USE PERMIT
WUP NO. 855

PERMITTEE

Permittee/Water User
Gentry Homes, Ltd.
Address
P.O. Box 295
Honolulu, HI 96809

Landowner of Source
Address
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

PERMITTED SOURCE INFORMATION

Island
Oahu

Water Management Area
Ewa Caprock

Aquifer Sector
Puuloa

Aquifer System
Puuloa

System Sustainable Yield
N/A (1,000 mg/l chloride concentration limit for irrigation uses)

Well Name
Gentry Area 45

State Well Nos.
1901-08

PERMITTED USE INFORMATION

Reasonable beneficial use
Irrigation

Withdrawal (12 month moving ave.)
0.066 mgd

Location of water use

TMK(s)
9-1-069:005, por (10.62 acres)

State land use classification
Urban

County zoning classification
R-5 and A-1

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the permittee is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its January 22, 2009, meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.
10. Approved flowmeters must be installed to measure monthly ground-water withdrawals, and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis.

11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

LAURA H. THIELEN, Chairperson
Commission on Water Resource Management

Attachments: Conservation Conditions – Ewa Caprock Water Use Permits
AGENDA
FOR THE MEETING OF THE
COMMISSION ON WATER RESOURCE MANAGEMENT

DATE: January 22, 2009
TIME: 9:00 a.m.
PLACE: Kalanimoku Building, Conference Room 132
1151 Punchbowl Street
Honolulu, Hawaii 96813

A. APPROVAL OF MINUTES
   1. December 17, 2008

B. ANNOUNCEMENTS

C. GROUND WATER REGULATION
   1. Gentry Homes, Ltd. and Ewa by Gentry Community Association, APPLICATIONS FOR WATER USE PERMITS: WUP No. 855, Future Irrigation Use, 66,085 gpd (Well No. 1901-08); WUP No. 856, Modify Existing Irrigation Use to 194,768 gpd (Well No. 2001-05); WUP No. 857, Modify Existing Irrigation Use to 224,615 gpd (Well No. 2001-12); WUP No. 858, Modify Existing Irrigation Use to 36,975 gpd (Well No. 1901-05); WUP No. 859, Future Irrigation Use, 255,108 gpd (Well Nos. 1900-24 and 2000-06); Puuloa Ground Water Management Area, Oahu
   2. Oasis Water Systems, Inc., REQUEST TO EXCEED MAXIMUM PERMITTED WELL DEPTH: Lanikai Condominium Irrigation Well, “Welly I” (Well No. 0319-01), TMK (4) 4-3-002:003, Wailua, Kauai

D. NON-ACTION ITEMS
   1. Report to the Twenty-Fifth Legislature, 2009 Regular Session: 20-Year Review of Water Use Permits

E. NEXT COMMISSION MEETINGS (TENTATIVE)
   1. February 18, 2009
   2. March 18, 2009

The Commission on Water Resource Management’s monthly meeting agenda and staff submittals are now available on our website at http://www.hawaii.gov/dlnr/cwrm. Materials related to items on this agenda are available for review at our office at 1151 Punchbowl Street, Room 227, and also will be available at the meeting. Any person may testify or present information on any meeting agenda item, unless the item involves a proceeding in an existing contested case. In addition, if you have a legal interest that may be adversely affected by the proposed action, you may have a right to an administrative contested case hearing. You must make the request for such a hearing either orally or in writing at the public hearing or meeting for which this notice is given. Hawaii Administrative Rules (H.A.R.) Section 13-167-52(a). If you request a contested case hearing, you will have the opportunity to present to the Commission oral or written evidence or testimony or both to establish your standing. You may present your testimony or evidence on standing at the meeting or public hearing described above or, alternatively, at a hearing set by the Commission at a later date. If you request a contested case hearing either orally or in writing, you must also complete and file (or mail and postmark) a written petition for a contested case with the Commission within ten days after the date of the public hearing or meeting noticed here. Petition forms are available from the Commission. H.A.R. Section 13-167-52(a). If you do not make such a request or fail to file a timely written petition with the Commission, the consequence is that you will be precluded from later obtaining a contested case hearing and seeking judicial review of any adverse decision. H.A.R. Chapter 13-167. Disabled individuals planning to attend the public hearing or meeting are asked to contact the Commission at the above address or phone (Kauai) 274-3141 ext. 70214, (Maui) 984-2400 ext. 70214, (Hawaii) 974-0000 ext. 70214, (Molokai or Lanai) 1-800-GOV-INHI ext. 70214 or 587-0214 at least three days in advance of the public hearing or meeting to indicate if they have special needs which require accommodation.
Barry said BWS's concern is really having to deal with the Community Associations in the future once Gentry hands management over to them and if and when the wells start consistently going over 1000 mg/l. The gentry non-potable systems have been designed to use the caprock wells and currently the WW reuse has some other issues to overcome as follows:

1. The WW reuse can only deliver about 50 psi if they were to hook up and various booster pumps would be necessary to bring the gentry irrigation systems up to the 70 psi they require. Seems kinda high to me but that's what Gentry's irrigation systems need.
2. Although nearby, the hook up would have to occur on Fort Weaver Rd and is a bit far away from the demand areas (part of the booster pump need).
3. Honouliuli can only deliver 10 mgd of WW reuse and the short of it is that BWS has other users projected to use what little remains in the reuse system. BWS could probably handle 100,000 gpd or so but not much more.

Barry offered to be at the CWRM mtg to help answer other WW reuse questions should they arise.

----- Forwarded by Roy Hardy/DLNR/StateHiUS on 01/07/2009 02:27 PM -----

Roy Hardy/DLNR/StateHiUS
01/07/2009 01:25 PM
To Denise E Mills/DLNR/StateHiUS
cc
Subject Re: Submittal for Gentry WUPs

I'll touch base with him - haven't spoken to him in awhile and I'd like to discuss some other things with him as well. Still waiting on his call back.
Denise E Mills/DLNR/StateHiUS

Do you want me to call Barry?
Roy Hardy/DLNR/StateHiUS

Ken just raised a question about the BWS comments and ww reuse based on Commissioner Kiyosaki's comments from the last mtg. Though we included the 'contingency plan' condition for approval, we should probably ask BWS if the BWS could actually deliver water or if they've got some contractual agreements in place already with Gentry. Several of the wells are bouncing around 1,000 mg/l where they should be stopping pumping until they go down. In the meantime, they would need ww reuse to make up any deficits or face fines if we raise enforcement priority on the caprock. I can check with Barry Usagawa at
ok-- I'll go with it...
Roy Hardy/DLNRIStateHiUS

I think they are good to go.
Denise E Mills/DLNRIStateHiUS

Just want to confirm that no further work is needed to complete the submittal for the Gentry WUPs. Submittals are due on Thurs. this week, so I wanted to make sure I don't miss anything this time.
STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

January 22, 2009
Honolulu, Oahu

Gentry Homes, Ltd. and Ewa by Gentry Community Association
APPLICATIONS FOR WATER USE PERMITS
WUP No. 855, Future Irrigation Use, 66,085 gpd (Well No. 1901-08)
WUP No. 856, Modify Existing Irrigation Use to 194,768 gpd (Well No. 2001-05)
WUP No. 857, Modify Existing Irrigation Use to 224,615 gpd (Well No. 2001-12)
WUP No. 858, Modify Existing Irrigation Use to 36,975 gpd (Well No. 1901-05)
WUP No. 859, Future Irrigation Use, 255,108 gpd (Well Nos. 1900-24 and 2000-06)
Puuloa Ground Water Management Area, Oahu

APPLICANTS:

WUP Nos. 855, 857, 858, 859
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

WUP No. 856
Ewa by Gentry Community Association
91-1795 Keaunui Drive
Ewa Beach, HI 96706

SUMMARY OF REQUEST:

Gentry Homes, Ltd. and the Ewa by Gentry Community Association (hereinafter referred to as "Gentry," except when discussing details of an individual application or referring to only one applicant) are requesting approval to:

- Modify three existing water use permits (WUPA Nos. 856, 857, and 858) to increase the use of brackish water for irrigation of landscaped areas along roadways within the Ewa by Gentry

LANDOWNER:

Gentry Investment Properties
P.O. Box 295
Honolulu, HI 96809

Ewa by Gentry Community Association
91-1795 Keaunui Drive
Ewa Beach, HI 96706
development project in Ewa Beach. The total quantity of water requested in these applications is 456,358 gallons per day (gpd). The existing permits allow use of 371,000 gpd for the same purposes.

- Obtain two new water use permits (WUPA Nos. 855 and 859) for new irrigation uses within the Ewa by Gentry development project. The total quantity of water requested in these two applications is 321,293 gpd.
- The total water use requested is 777,551 gpd (0.778 million gallons per day [mgd]).

LOCATION MAP: See Exhibit 1.

BACKGROUND:

On March 3, 1993, the Commission adopted the boundary of the Ewa caprock aquifer as a separate aquifer system area overlying the designated ground water management areas of the Waipahu-Waiawa, Ewa-Kunia, and Makaiwa aquifer system areas. Because of uncertainties regarding the nonpotable utility and sustainable yield of the caprock formation, the Commission had not adopted a sustainable yield estimate for the Ewa caprock aquifer.

Designation of the Ewa caprock aquifer as a water management area was precipitated by the City and County of Honolulu’s (City’s) urbanization plans for the Ewa Plain and adoption by the City of a local ordinance that requires dual water systems for all new developments. Potable water was to be provided through the municipal system, with non-potable water supply provided by two sources: (1) wells designed to pump from the caprock and (2) treated effluent from the Honouliuli Wastewater Treatment Plant. The projected future demand when this ordinance was adopted was 25 mgd, which is higher than the estimated natural recharge to the caprock aquifer of less than 16 mgd.1

In 1993, the Commission began approving 1-year temporary permits for new uses of caprock ground water. Temporary rather than permanent permits were issued in response to concerns about the future viability of the caprock to serve as a reliable water source of nonpotable water supply consequent to the loss of return of irrigation recharge from sugar cane agriculture. From 1993 until 2006, the Commission approved only 1-year temporary permits (later called interim permits) for the caprock aquifer. In analyzing water availability, the Commission used guidelines for estimating sustainable yields for the Puuloa, Kapolei, and Malakole aquifer system areas of the Ewa Caprock Aquifer Sector (hereinafter referred to as the caprock aquifer).

On March 13, 1996, the Commission adopted the following policy statement, clearing the way for application of reclaimed water on lands overlying the Ewa Caprock Aquifer Sector Area:

_It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources._

---

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

On May 14, 1997, the Commission adopted a chloride concentration limit of 1,000 milligram per liter (mg/l) as a basis for regulating water use from wells completed in the caprock aquifer and to prevent degradation of the natural quality of ground water in the caprock aquifer. The intent was to restrict pumpage in any caprock well with a chloride concentration approaching 1,000 mg/l to prevent a build up of sodium in the clayey soils and to protect other adjacent users of caprock water from drawing water with chloride concentrations above 1,000 mg/l. This limit corresponds to the generally accepted upper limit of irrigation-quality water. Thus, in lieu of an aggregate sustainable yield figure, usually expressed as a volume of water, brackish ground water pumped from irrigation wells is required to have chloride concentrations below 1,000 mg/l.

In conjunction with extending annual interim permits during the 1990s and after the millennium, the Commission tracked progress on developing reclaimed water as an alternate source of non-potable supply for well owners in the Puuloa, Kapolei, and Malakole aquifer system areas. On July 20, 2000, an agreement was reached between the Honolulu Board of Water Supply (BWS), the City, and U.S. Filter, allowing the BWS to purchase the Honouliuli Wastewater Treatment Plant and become a purveyor of reclaimed water, with a goal of securing customers for 10 mgd by July 1, 2001. U.S. Filter would operate the plan for BWS under a 20-year service agreement. The City was to provide secondary effluent to the facility and take back 4 mgd of the reclaimed water for reuse by the City. Some of the reclaimed water was intended for use at the Campbell Industrial Park.

On July 18, 2001, the Commission extended the interim water use permits, subject to the standard water use permit conditions and certain special conditions for the caprock aquifer. At that time, the Commission also approved a new special condition that specified the term of interim permits to be through “...July 1, 2006 or (1) until treated wastewater is available and acceptable for use, or (2) until such time that a significant change in permitted, actual, or projected uses of water supply occurs.” Additionally, at the July 18, 2001 Commission meeting, staff recommended that the total allocation for the Puuloa Aquifer System Area should not exceed 15 mgd. The quantity of water currently allocated in this system is 14.817 mgd; however, actual pumpage on a 12-month moving average basis (12-MAV) is about one-fourth of this amount (see Exhibit 2). 2 mgd = actual reported.

On July 12, 2006, the Commission converted a total of 26 interim water use permits to permanent permits. This included the three existing permits for Gentry Homes, Ltd. (for Well Nos. 1901-05 and 2001-12) and Ewa by Gentry Community Association (for Well No. 2001-05). The total quantity of water use allowed by these three permits was 0.371 mgd (see Attachment A).

On October 8, 2008, the Commission received four complete water use permit applications from Gentry Homes, Ltd. and one water use permit application from the Ewa by Gentry Community Association. Three of these applications are to modify the existing water use permits that were made permanent on July 12, 2006. Two applications (WUPA No. 855 and 859) are for proposed new uses.
Brackish water is requested for irrigating landscape plantings along roadways within the Ewa by Gentry project and two park areas. On multiple properties shown on Exhibit 4.

The details of Gentry's five water use permit applications, including source information and a summary of public notices made, are provided in Attachment A. All of the applications are for water that will be used for irrigation of landscape plantings along roadways and some park irrigation within the Ewa by Gentry development. The locations of Gentry's existing and proposed new wells and the corresponding water use permit application (WUPA) number are shown in Exhibit 3. The areas of existing and proposed new uses are delineated in a site plan prepared as part of the Ewa by Gentry Irrigation Master Plan (Exhibit 4).

**Applications to Modify Existing Permits**

The water use permit modifications requested can be summarized as follows:

- **WUPA No. 856** – The Ewa by Gentry Community Association is seeking to increase the allocated quantity for Well No. 2001-05 (under WUP No. 792) from 66,000 gallons per day (gpd) up to 194,768 gpd, for a net change of 128,768 gpd. This part of the development is known as the Sun Terra Tot Lot.
  - The water would be used on multiple TMKs within an area along Kapolei Parkway and within areas generally bounded by Kapolei Parkway, Geiger Road, Fort Weaver Road, and Keaunui Drive. The total land area proposed for irrigation under this permit is 31.3 acres. (See also Exhibit 4.)
  - The proposed use TMKs for WUPA No. 856 are listed in Exhibit 5.

- **WUPA No. 857** – Gentry Homes, Ltd. is seeking a modification that will decrease the allocated quantity for Well No. 2001-12 (under WUP No. 793) from 249,000 down to 224,615, for a net reduction of 24,385 gpd. This part of the development is known as Keaunui Area 30.
  - The area covered by this application is bounded generally by Arizona Road to the north, Fort Weaver to the west, Iroquois Road and East-West Loch Road to the south, and various lots around Keaunui Drive. The total land area proposed for irrigation under this permit is 36.09 acres. (See Exhibit 4.)
  - The proposed use TMKs for WUPA No. 857 are listed in Exhibit 6.

- **WUPA No. 858** – Gentry Homes, Ltd. is seeking a modification that will decrease the allocated quantity for Well No. 1901-05 (under WUP No. 794) from 56,000 gpd down to 36,975 gpd, for a net reduction of 19,025 gpd. This part of the development is known as Gentry Area 13.
  - The area covered by this application is roadway landscaping along Geiger Road west of Kapolei Parkway, and within the area bounded generally by Geiger Road to the north, Kapolei Parkway to the east, Launahale Street to the south, and the eastern boundary of the Coral Creek Golf Course. The total land area proposed for irrigation under this permit is 5.94 acres. (See Exhibit 4.)
  - The proposed use TMKs for WUPA No. 858 are listed in Exhibit 7.
Applications for New Water Use Permits

The applications for new water uses, both requested by Gentry Homes, Ltd., are for a total of 321,108 gpd that would be supplied by three new wells (Well Nos. 1901-08, 1900-24, and 2000-06), which are not yet constructed.

- **WUPA No. 855** – The quantity of water requested is 66,085 gpd, for irrigation uses within the Gentry Area 45 portion of the Ewa by Gentry development.
  - The area covered by this application is within parcels along Kapolei Parkway. The total land area proposed for irrigation under this permit is 10.62 acres. (See Exhibit 4.)
  - The proposed use TMKs for WUPA No. 855 are listed in Exhibit 8.

- **WUPA No. 859** – The quantity of water requested is 255,108 gpd, for use on a total of 41.0 acres of roadway landscaping within the Gentry Area 35 portion of the Ewa by Gentry development.
  - The use area covered by this application is bounded generally by the north boundary of the Hawaii Prince Golf Club (located to south of the proposed use area), Fort Weaver Road to the west, Iroquois Road and East-West Loch Road to the north, and Makalea Street and Hoowalea Street to the east. (See Exhibit 4.)
  - The proposed use TMKs for WUPA No. 859 are listed in Exhibit 9.

The specific plant materials proposed for the Ewa by Gentry development, in each of the areas covered by Gentry’s five water use permit applications, are listed in Exhibit 10.

Gentry’s Water Use Under Existing Permits

A review of Gentry’s past water use from the Ewa by Gentry Community Association well (Well No. 2001-05) was 0.052 mgd through September 30, 2008, on a 12-month moving average basis (12-MAV), which is slightly under its allocation of 0.066 mgd (see Exhibit 11). Pumpage from this well has been increasing since approximately April 2008. If the current pattern of increased pumpage continues, water use under this permit could exceed the permitted quantity and lead to a permit violation. The quantity of water requested under WUPA No. 856 is approximately 3 times more than the current permitted quantity. Chloride concentrations in this well have ranged from 754 to 988 mg/l from January 2007 through September 2008, with an average concentration of 852 mg/l.

Pumpage records for the other two wells (Well Nos. 2001-12 and 1901-05) show that Gentry has pumped more water than the amount allocated under its existing permits. The quantity of water drawn from Well No. 2001-12 through September 30, 2008, on a 12-MAV basis, was 0.247 mgd, which is below the current allocation of 0.249 mgd (Exhibit 12). However, before September 2008, the 12-
MAV exceeded the permitted quantity with the average pumpage ranging from 0.276 to 0.303 between December 2007 and August 2008, which is a violation of the permit. Chloride concentrations in this well have ranged from 742 to 928 mg/l from January 2007 through September 2008, with an average concentration of 797 mg/l.

The quantity of water pumped from Well No. 1901-05 through September 30, 2008, on a 12-MAV basis, was 0.123 mgd (Exhibit 13). This is more than double the permitted quantity of 0.056 mgd for this well. Between December 2007 and August 2008, the 12-MAV for this well ranged between 0.140 and 0.168 mgd. These quantities are almost consistently 2.5 to 3 times higher than the allocated quantity; however, Gentry Homes' application to modify the existing permit for this well seeks to reduce the allocation from 0.056 mgd to 0.037 mgd. Chloride concentrations in this well have ranged from 864 to 1,110 mg/l from January 2007 through September 2008, with an average concentration of 987 mg/l. The concentration reported for three months in this period was 1,000 mg/l, and two measurements, reported in March and April 2008, were 1,026 mg/l and 1,110 mg/l, respectively. Concentrations in this well have remained in this range at least since the start of 2007.

ANALYSIS/ISSUES:

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

(1) **Water availability**

In establishing a sustainable capacity for irrigation wells, the Commission found the following:

1. The Ewa caprock aquifer is a thin basal aquifer vulnerable to salinity intrusion (most salinity profiles indicate sharp salinity changes). Therefore, the quantity of developable water supply depends entirely on well location.

2. Because the caprock aquifer lens is thin, salinity intrusion is a significant limitation, particularly for wells in the makai portion of the aquifer. If ground water withdrawal from the aquifer occurs primarily in mauka areas, more developable supply may be available.

3. The aquifer's main source of recharge is ground water inflow (leakage) from the basalt aquifer at the inland margin of the interbedded coralline rock formations that comprise the Ewa caprock aquifer system. The amount of leakage cannot easily be quantified and is, in part, dependent upon the water levels in the basal aquifer.

4. Sustainable yield is a theoretical number that assumes optimal well placement in an aquifer. The spatial distribution of chloride in the caprock aquifer, however, doesn’t fit the notion of managing ground water allocations and withdrawals on the basis of a single sustainable yield pumpage number.
6. The magnitude of tidal influences are equal to or greater than pumping influences and thus makes water-level monitoring as a means for estimating sustainable yield and regulating water use extremely difficult.

7. The caprock aquifer is para-basal inland, which means that the bottom of the aquifer is truncated by the low-permeability clay layer that underlies the upper limestone aquifer.

8. The hydrology of the Ewa caprock aquifer is sufficiently unique to warrant consideration of alternative regulatory considerations. This is particularly appropriate given the change in irrigation returns and availability of reclaimed water to supplement the naturally-occurring recharge.

To respond to concerns about the viability of the caprock aquifer to meet future non-potable water demands in the Ewa region, staff performed quarterly monitoring of water levels and chloride concentrations in select caprock wells from 1994 to 2001. The monitoring network initially included some Malakole aquifer system area wells, but those wells were later dropped due to mainly industrial needs not dependent upon chloride concentrations and the focus placed on irrigation wells in the Kapolei and Puuloa aquifer systems in response to irrigation development pressures within the eastern portion of the Ewa Plain.

A total of 63 permitted and registered wells are known to be within the Puuloa Aquifer System Area (see Exhibit 14). Wells in the vicinity of the Ewa by Gentry development project are included in Exhibit 1. Brackish water from the caprock aquifer within this area is used primarily for a variety of irrigation purposes, as follows:

- Landscape and/or park irrigation (IRRLA, IRRPA) – 19 wells
- Golf course irrigation (IRRGC) – 19 wells
- Agriculture (crops and processing) (AGRCP) – 1 well (U.S. Navy)
- Habitat maintenance (IRRHM) – 1 well (U.S. Fish and Wildlife Service)

Of the remaining wells, two are permitted for industrial use (Well Nos. 1902-03 and -04), one is permitted for domestic use (Well No. 1901-02), ten are recorded as unused, four are maintained as observation (monitor) wells, and six are abandoned.

The total permitted quantity of water from the Puuloa Aquifer System Area is 14.817 mgd, allocated through 24 active water use permits (see Exhibit 2). The water use from wells within this system is 3.274 mgd (12-MAV), based on reports filed with the Commission; actual use of ground water in this area could be higher. For some wells, the 12-MAV was calculated from pumpage data through only December 2005; more recent quantities could not be calculated. Pumpage could not be calculated and is not known for 11 permits (noted as “N/R” in Exhibit 15) because there are no reports on record.
As noted in the Background section, above, at the July 18, 2001 Commission meeting, staff recommended that the total allocation for the Puuloa Aquifer System Area should not exceed 15 mgd. On this basis, then the quantity available for allocation is only 0.183 mgd. Gentry's water use applications propose to increase water use within the Ewa by Gentry development by 0.407 mgd. Although this increase, if approved, would bring the total permitted water use for the Puuloa system to 15.224 mgd, staff does not believe this would cause the aquifer to be overused nor at risk of becoming degraded for several reasons, including the examples given in the following paragraphs.

First, staff expects that follow-up on the findings of the 20-year review report, which will be provided to the Legislature in January 2009, will involve some combination of revocations or partial revocations for non-use, enforcement of the requirement for permittees to submit annual or monthly reports of their water use and chloride concentrations measured in their well water, or other actions. Staff anticipates re-examining the status of water use permits and water usage for the caprock aquifer to bring the permitted quantities in line with actual use. As noted earlier, available records indicate that actual use is approximately one-fourth the total permitted quantity. Though slightly less than one-half have not reported use, of those that have some have reported either no use or use at a rate that is a fraction of the permitted quantity. For example, the U.S. Navy's average use through December 2007 was 0.238 mgd, which is only 4 percent of the quantity of 5.890 mgd allocated in WUP No. 189 (see Exhibit 2).

Second, as more reclaimed water from the Honouliuli Wastewater Treatment Plant becomes available for irrigation and other non-potable uses in the area, permitted quantities of and demand for ground water should be reduced. As water users in the area shift to reclaimed water as a source of non-potable water, demand for brackish ground water is expected to decline further. HASEKO (Ewa), for example, has entered into an agreement with the BWS to provide up to 0.600 mgd of reclaimed water, which offsets HASEKO's ground water use by that amount. The quantity of water currently allocated for HASEKO's use is 3.3 mgd. The availability of 0.600 mgd of reclaimed water effectively reduces HASEKO's need for ground water to 2.7 mgd. Additionally, HASEKO's reported water use (12-MAV) is only 0.079 mgd, which represents approximately 2 percent of its allocation (see Exhibit 2).

Pump test data show that the caprock aquifer is capable of producing large quantities of brackish water without causing much drawdown of the water table.

Staff believes that the quantity of water is available in the caprock aquifer is sufficient to meet the proposed uses for the following reasons:

- The aquifer is a thin basal aquifer, and the salinity impacts of withdrawals at an individual well site will likely be confined to the immediate vicinity of the pumping well.
• Although the recommended total permitted quantity for the Puuola Aquifer System Area is 15 mgd (a staff recommendation made at the October 18, 1998 Commission meeting), several factors indicate that there is sufficient brackish water available to permit the quantity requested in Gentry’s applications. These factors include:
  - Water use records show that actual water use under existing permits issued for area wells is much lower;
  - It is anticipated that, to follow up on the findings of the 20-year review, staff will identify and recommend to the Commission permits that should be revoked in whole or in part for nonuse; and
  - Some users have already or are shifting to reclaimed water as a source of non-potable water supply, which leads to a corresponding reduction in demand for brackish ground water to meet their needs.

• Based on the hydraulic properties of the caprock aquifer and an assessment of other uses in the vicinity of Ewa by Gentry project, it is unlikely that the proposed withdrawal of up to 0.778 mgd will interfere with other users in the area.

(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 approval to use a total of 0.778 mgd of brackish ground water to irrigate landscape plantings along roadways and in community park areas within the Ewa by Gentry development.

II. Quantity Justification

A letter included with each of the applications, provided by Browlie & Lee (see Exhibit 15), a firm that provides landscape and irrigation services for the Ewa by Gentry development, explains the basis for the water use quantities requested in Gentry’s applications. According to this letter, for 18 years Browlie & Lee has dealt with the requirement to provide low maintenance and drought-tolerant plantings within the development. The firm also cites its experience in applying water conservation efforts. Their estimates include a 15 percent inefficiency factor to account for the high percentage of small irregular planting areas among
Staff Submittal

the residential lots in the subdivision. The small size and density of lots shown on the irrigation master plan (Exhibit 4) and the accompanying inventory of proposed use TMKs listed in Exhibits 5 through 9, illustrate the disaggregated nature of the areas the planned irrigation systems will serve.

In comments submitted by OHA (see Exhibit 16), OHA agrees that potable water should not be used for the proposed purpose. Also, OHA asks whether the landscaping “will use drought-tolerant local or endemic [plant] species common to the area.” The plant materials provided as part of Gentry’s applications (see Exhibit 10) are drought-tolerant plants.

III. Efficiency of Use

Gentry states that spray heads will be used in its irrigation system for all of the use areas proposed in its water use permit applications. The proposed irrigation practice is to apply the amount of water needed to meet the demand. (This is stated as “irrigate to demand” on each of the applications.) Efficiency is also discussed in the preceding section, Quantity Justification.

IV. Analysis of Practical Alternatives

Gentry’s analysis of alternative potable and non-potable sources is summarized below.

1. Municipal Sources – The Board of Water Supply requires the use of non-potable water for irrigation in the Ewa region. The use of brackish water from the caprock aquifer effectively reduces the amount of potable water needed for the development.

2. Wastewater Reuse (Reclaimed Water) – Treated effluent from the Honouliuli Wastewater Treatment Plant is not available in this area.

3. Ditch System – No ditch system water is available for this area.

4. Desalinization – Desalinization is not financially practical.

5. Surface Water – A source of surface water for alternate supply is not available in this area.

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 water management areas. The statute (§174C-51.5(3)(b) HRS) requires county boards of water supply, in consultation with the state Department of Health, to adopt standards for non-potable water distributed through dual-line water supply systems and rules regarding the use of non-potable water. The City and County of Honolulu has addressed this requirement through the Ewa Development Plan and various project approvals.

The consistency of this application with other beneficial-reasonable use criteria is discussed in the following sections.
(3) **Interference with other existing legal uses**

A discussion of other ground water users in the vicinity of the Ewa by Gentry development and within the Puuloa Aquifer System Area is provided above in Section I, Water Availability.

All of Gentry’s applications state that there are no known conflicts with any existing legal uses. Staff does not believe Gentry’s proposed use will interfere with other legal water uses in the area.

(4) **Public interest**

In each of its applications, Gentry explains that the use of brackish water [for the proposed irrigation uses] preserves potable water that would otherwise be used for irrigation. This assessment is consistent with the Ewa Development Plan, which requires non-potable water use in the Ewa region for the purpose of preserving potable water supplies for other uses that require lower levels of chloride and total dissolved solids.

No public comments and no objections were received on any of Gentry’s applications.

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

Based on comments received from the State Land Use Commission (LUC) and from the City and County of Honolulu, Department of Planning and Permitting (DPP), the proposed uses are consistent with state and county general plans and land use designations.

The LUC confirms that the Ewa by Gentry development is located within the State Land Use Urban District. Activities and uses with the Urban District are under the jurisdiction of the City and County of Honolulu, Department of Planning and Permitting (DPP).

In the DPP’s comments on Gentry’s water use permit applications (Exhibit 17), it states that the proposed use for roadway landscaping irrigation and park irrigation (proposed only in WUPA No. 856 and 857) is consistent with local zoning. The DPP further notes that the proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan, which requires (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

Comments from the BWS are included in the comment letter provided by the DPP (Exhibit 17). The BWS requests contingency plans for the new proposed wells, Well Nos. 1901-08, 1900-24, and 2000-06, in the event that chloride levels in these wells exceeds the 1,000 mg/l limit.
(6) County land use plans and policies

The proposed uses are consistent with local land use plans and policies, as discussed under Section 5, above.

(7) Interference with Hawaiian home lands rights

All permits approved by the Commission are subject to the prior rights of Hawaiian home lands, as set forth in the Hawaiian Homes Commission Act (§221 HRS).

Gentry’s applications state that the proposed water uses will not interfere with the rights of Hawaiian home lands. The Department of Hawaiian Home Lands (DHHL) and OHA were provided a copy of Gentry’s applications for review and comment. In its comments (see Exhibit 15), OHA asks for assurances from the Commission that uses from each of the proposed sources “will not adversely affect constitutionally protected Native Hawaiian uses in the area as protected in the state water code.”

Standard conditions 3.g., 6., and 9.f. of all water use permits (see Attachment B) provide notice to all permittees that the Commission’s approval is subject to the requirements of the Hawaiian Homes Commission Act, as amended, and cannot interfere with Hawaiian home land rights, in accordance with §174C-101(a) HRS. Given these conditions, it is unlikely that Gentry’s proposed water uses will interfere with Hawaiian home land rights, provided it fully complies with these and other permit conditions. The assurance requested by OHA, therefore, can be addressed by monitoring Gentry’s performance with respect to the permit conditions and promptly addressing any violations that have the potential to interfere with the rights of Hawaiian home lands.

OTHER

As noted in the Background section, Gentry’s water use under two existing permits has exceeded the allocated quantities. These pumpage violations are identified in the report on the 20-year review of the water use permits that will be provided to the Legislature in January 2009. The results of the 20-year review provide an opportunity to look at the permit process, permit compliance, and information management (maintenance) in a holistic way, rather than addressing issues such as overpumping on a case-by-case basis. For example, a comprehensive review of active caprock permits and pumpage records would aid reassessment and refinement of the quantity of ground water available for allocation. This would help identify permits in which the allocation should be adjusted to reflect actual use, and which permits and how many permits should be revoked in whole or in part.

RECOMMENDATION:

Staff recommends that the Commission approve issuance of five water use permits, as follows:
1. Water use permit no. 855 to Gentry Homes, Ltd., for the reasonable and beneficial use of 66,085 gallons per day of brackish water from the Ewa caprock aquifer (Well No. 1901-08, a proposed new well).

2. Water use permit no. 856 to the Ewa by Gentry Community Association for the reasonable and beneficial use of 194,768 gallons per day of brackish water from the Ewa caprock aquifer (Well No. 2001-05, an existing well). This modifies and supersedes water use permit no. 792.

3. Water use permit no. 857 to Gentry Homes, Ltd., for the reasonable and beneficial use of 224,615 gallons per day of brackish water from the Ewa caprock aquifer (Well No. 2001-12, an existing well). This modifies and supersedes water use permit no. 793.

4. Water use permit no. 858 to Gentry Homes, Ltd., for the reasonable and beneficial use of 36,975 gallons per day of brackish water from the Ewa caprock aquifer (Well No. 1901-05, an existing well). This modifies and supersedes water use permit no. 794.

5. Water use permit no. 859 to Gentry Homes, Ltd., for the reasonable and beneficial use of 255,108 gallons per day of brackish water from the Ewa caprock aquifer (Well Nos. 1900-24 and 2000-06, two proposed new wells).

Approval of these permits should be subject to (1) the standard water use permit conditions listed in Attachment B; (2) the following special conditions, and (3) the conservation conditions Ewa caprock water use permits listed in Attachment C.

1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

2. This permit is approved under the assumption that reclaimed wastewater will become available for reuse as an alternative supply source.

3. Pumping shall cease immediately if chloride measurements show that the brackish water drawn by the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve variance requests is delegated to the Chairperson.

4. The permittee shall submit a contingency plan for water use in the event the chloride concentration in the permitted well(s) exceeds the 1,000 mg/l sustainable capacity limit established for Ewa caprock aquifer sources, the permittee shall seek an alternative source of supply. The contingency plan shall be submitted to the Commission within 30 days of the issuance of this permit.

5. In the event that the tax map key(s) at the location(s) of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change(s) within thirty (30) days after the permittee receives notice of the change(s).
6. Standard Condition 16 is waived for brackish water wells.

Respectfully submitted,

KEN C. KAWAHARA, P.E.
Deputy Director

Attachment(s):
A Water Use Permit Detailed Information
B Water Use Permit Standard Conditions
C Conservation Conditions for Ewa Caprock Water Use Permits

Exhibit(s):
1 Location Map
2 Active Water Use Permits in the Puuloa Aquifer System Area
3 Ewa by Gentry Well Locations
4 Ewa by Gentry Irrigation Master Plan
5 Proposed Irrigation Plan and Use TMKs for WUPA No. 856
6 Proposed Irrigation Plan and Use TMKs for WUPA No. 857
7 Proposed Irrigation Plan and Use TMKs for WUPA No. 858
8 Proposed Irrigation Plan and Use TMKs for WUPA No. 855
9 Proposed Irrigation Plan and Use TMKs for WUPA No. 859
10 Proposed Plant Materials and Irrigated Acres
11 Well No. 2001-05 Pumpage Data, Ewa by Gentry Community Association
12 Well No. 2001-12 Pumpage Data, Gentry Homes, Ltd.
13 Well No. 1901-05 Pumpage Data, Gentry Homes, Ltd.
14 Nearby Wells and Water Uses
15 Basis for Quantity Estimate Prepared by Brownlie & Lee for Gentry
16 Comments from Office of Hawaiian Affairs
17 Comments from C&C Honolulu, Department of Planning and Permitting

APPROVED FOR SUBMITTAL:

LAURA H. THIELEN
Chairperson
## WATER USE PERMIT DETAILED INFORMATION

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### Source Information

- **New or existing source**: New, Existing, Existing, Existing, New, New
- **Owner/Operator**: Gentry Homes, Gentry Homes, Gentry Homes, Gentry Homes, Gentry Homes, Gentry Homes
- **Year drilled**: N/A, 1994, 1999, 1999, N/A, N/A
- **Casing diameter (in.)**: Not constructed, 11, 30, 20, Not constructed, Not constructed

### Elevation data (datum = mean sea level, 0 ft)

- **Water level**: --, 1.0, --, 1.0, --, --
- **Ground surface**: --, 31, 31, 33, --, --
- **Bottom of solid casing**: --, 1, 2, -2, --, --
- **Bottom of perforated casing**: --, -24, -8, -8, --, --
- **Bottom of open hole**: --, -24, -8, -10, --, --
- **Total depth (ft)**: --, 55, 39, 43, --, --
- **Grouted annulus depth (ft)**: --, 27, 27, 19, --, --

### Pump capacity (gpm)

- 100 (proposed), 200 (proposed), 430, 355, 150 (proposed), 150 (proposed)

### Notes:

1. Ewa by Gentry Community Association
2. The current permitted pump capacity is 110 gpm. Applicant has applied for a new pump installation permit to increase the capacity to 200 gpm.
Use Information

Quantity Requested

| WUPA No. 855 (new use, one new well) | 66,085 gpd |
| WUPA No. 856 (modify use, one existing well) | 194,768 gpd |
| WUPA No. 857 (modify use, one existing well) | 224,615 gpd |
| WUPA No. 858 (modify use, one existing well) | 36,975 gpd |
| WUPA No. 859 (new use, two new wells) | 255,108 gpd |

Total quantity requested

| 777,551 gpd |

Proposed type of water use: Irrigation (landscaped areas, park)

Place of water use: Multiple TMKs within the Ewa by Gentry development
(proposed use TMKs are shown in Exhibits 5 through 9)

Water Usage (12-MAV) Reported by Gentry (Ewa by Gentry development)\(^1\)

| Ewa by Gentry Community Association (Well No. 2001-05) | 0.066 mgd |
| Gentry Homes (Well No. 2001-12) | 0.249 mgd |
| Gentry Homes (Well No. 1901-05) | 0.056 mgd |

Puuloa Aquifer System Area

Current 12-MAV Withdrawal (See Exhibit 2)

| 3.274 mgd |

\(^1\) Also see Exhibit 2 for water usage reported by other well operators within the Puuloa Aquifer System Area.

Nearby Surrounding Wells and Other Registered Ground Water Use

Exhibit 14 lists other permitted and registered wells that are constructed within the Puuloa Aquifer System Area, and Exhibit 15 shows the well locations. A total of 63 wells are known to be in the area. Brackish ground water drawn from the Ewa caprock aquifer in this area is primarily used for a variety of irrigation purposes, as follows:

- Landscape and/or park irrigation (IRRRA, IRRPA) – 19 wells
- Golf course irrigation (IRRGC) – 19 wells
- Agriculture (crops and processing) (AGRCP) – 1 well (U.S. Navy)
- Habitat maintenance (IRRHM) – 1 well (U.S. Fish and Wildlife Service)

Of the remaining wells, two are permitted for industrial use (Well Nos. 1902-03 and -04), one is permitted for domestic use (Well No. 1901-02), ten are recorded as unused, four are maintained as observation (monitor) wells, and six are abandoned.

The total permitted quantity of water from the Puuloa Aquifer System Area is 14.817 mgd (see Exhibit 2), allocated through 25 active water use permits. The reported water use from wells within this system is 3.274 mgd (12-MAV), based on water use reports filed with the Commission; actual existing use of ground water in this area could be higher.

ATTACHMENT A
Staff Submittal

January 22, 2009

Public Notice

In accordance with §13-171-17, HAR, public notices were published in the Honolulu Star Bulletin on October 29, 2008 and November 5, 2008, and a copy of both notices sent to Mayor Hannemann’s office. Copies of the completed application were sent to the Honolulu Board of Water Supply, the City and County of Honolulu Department of Planning and Permitting, the state Departments of Health and Department of Hawaiian Home Lands, various divisions of the Department of Land and Natural Resources, the Land Use Commission, and the Office of Hawaiian Affairs. Comments and objections to the proposed permit were to be filed with the Commission by November 20, 2008.

Comments were received from most of the review agencies and are addressed in the analysis of the application and the recommended permit special conditions. No comments were received from the general public or other interest groups.

Objections

The public notice specifies that an objector meet the following requirements: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; (3) state all grounds for objections to the proposed permits, (4) provide a copy of the objection letter(s) to the applicant, and (5) submit objections meeting the previous requirements to the Commission by November 20, 2008.

No objections were filed.
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable-beneficial use described at the location described above. Reasonable beneficial uses means “the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest.” (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its December 17, 2008 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

ATTACHMENT B
Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission’s periodic review for the Puuloa Aquifer System Area’s sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System Area, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee’s water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground Water Management Area.

17. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

ATTACHMENT B
1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:

      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:

      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and Improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

ATTACHMENT C
## Aquifer System Water Use Permit Index (caprock)

### ISLAND OF OAHU

<table>
<thead>
<tr>
<th>WMA Aquifer System:</th>
<th>Well No.</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
<th>12-MAV (mgd)</th>
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**Tuesday, December 02, 2008**

**EXHIBIT 2**
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<th>WUP No</th>
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<th>Applicant</th>
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<th>Well Name</th>
<th>WUP (mgd)</th>
<th>12-MAV (mgd)</th>
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Summary for 'SYSTEM' = PUULOA (44 detail records)

Totaling 14.817
Available 3.244 reported
EWA BY GENTRY

Water Supply Wells for Irrigation Master Plan

WUPA Nos. 855 through 859

Existing wells: 1901-01, 2001-05, 2001-12

New proposed wells: 1900-24, 1901-08, 2000-06

EXHIBIT 3
Table 1: LAND USE CONSISTENCY / EFFICIENCY - Soda Creek III Well

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<th>State Land Use District</th>
<th>CDUP Req'd Y(date app)</th>
<th>County Zoning Code</th>
<th>SMAP Y(date app)</th>
<th>Quantity of Use (GPD)</th>
<th>Sub-Metered Y/N</th>
<th>Units or Net Acreage</th>
<th>Applicant's Justification for Quantity of Requested Use for Item 7.</th>
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<td></td>
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<td>All irrigation use is based on actual use for Ewa by Gentry, see attached Brownlie and Lee letter dated July 2, 2008 for application rate. For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08.</td>
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TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above) = 194,768

31.3
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<th>Development Designation</th>
<th>USE TMK</th>
<th>State Land Use District</th>
<th>CDUP Req'd Y(date app)</th>
<th>County Zoning Code</th>
<th>SMAP Y(date app)</th>
<th>Quantity of Use (GPD)</th>
<th>SMAP Quantity</th>
<th>Sub-Metered Y(yn)</th>
<th>Units or Net Acreage</th>
<th>Applicant's Justification for Quantity of Requested Use for Item 7.</th>
</tr>
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<tbody>
<tr>
<td>USES THAT DO NOT REQUIRE POTABLE WATER</td>
<td></td>
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<td>9-1-102 (Keaunui ROW)</td>
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<td>NA</td>
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<td>All irrigation use is based on actual use for Ewa by Gentry, see attached Brownlie and Lee letter dated July 2, 2008 for application rate.</td>
<td></td>
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<tr>
<td>Road Irrigation - IRRLA</td>
<td>Area 28 frontage</td>
<td>9-1-107:052 (buffer strip lot)</td>
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<td>For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08.</td>
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<td>Park Irrigation - IRRPA</td>
<td>Area 29 park</td>
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TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above) = 224,615  36.09
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<th>Development Designation</th>
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<th>County Zoning Code</th>
<th>SMAP Y(date app)</th>
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<th>Quantity of Use (GPD)</th>
<th>Sub-Metered (YN)</th>
<th>Units or Net Acreage</th>
<th>Applicant's Justification for Quantity of Requested Use for item 7.</th>
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<td>Area 13 Huelani</td>
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<td>All irrigation use is based on actual use for Ewa by Gentry, see attached Brownlie and Lee letter dated July 2, 2008 for application rate.</td>
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TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above) = 36,975 5.94
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<th>State Land Use District</th>
<th>CDUP Req'd Y/(date app)</th>
<th>County Zoning Code</th>
<th>SMAP Y/(date app)</th>
<th>Quantity of Use (GPD)</th>
<th>Sub-Metered (YN)</th>
<th>Units or Net Acreage</th>
<th>Applicant's Justification for Quantity of Requested Use for Item 7.</th>
</tr>
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<tbody>
<tr>
<td>USES THAT DO NOT REQUIRE POTABLE WATER</td>
<td></td>
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<tr>
<td>Roadway Irrigation - IRLA</td>
<td>Area 41, 45/46, 48, 40, &amp; Keaunui west.</td>
<td>9-1-69:portion 005</td>
<td>Urban</td>
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<td>All irrigation use is based on actual use for Ewa by Gentry, see attached Brownlie and Lee letter dated July 2, 2008 for application rate.</td>
<td></td>
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<td>Roadway Irrigation - IRLA</td>
<td>Kapolei Parkway @ Area 14</td>
<td>9-1-69:portion 005, per *</td>
<td>Urban</td>
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<td>NA</td>
<td>N</td>
<td>For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08</td>
<td></td>
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</tbody>
</table>

TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above) = 66,085 10.62

*Corrected per phone conversation w/ Greg Fukumitsu (TNW RE) m 10/14/08
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<th>Purpose/Water Use Category</th>
<th>Development Designation</th>
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<th>County Zoning Code</th>
<th>SMAP Y(date app) NA (not squared)</th>
<th>Quantity of Use (GPD)</th>
<th>Sub-Metered (YN)</th>
<th>Units or Net Acreage</th>
<th>Applicant's Justification for Quantity of Requested Use for Item 7.</th>
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<tbody>
<tr>
<td>Roadway Irrigation - IRLA</td>
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<td>9-1-136-064</td>
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<td>All irrigation use is based on actual use for Ewa by Gentry, see attached Brownlie and Lee letter dated July 2, 2006 for application rate.</td>
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<td>Keauwai Dr @ Keauwai Rd Frontr Area 20</td>
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<td>NA</td>
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<td>For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08</td>
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<tr>
<td>Roadway Irrigation - IRLA</td>
<td>Area 19 A</td>
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**TOTAL USE REQUESTED** (the sum of total potable use and non-potable use in the table above) = 255,108  41.0
Table 2: IRRIGATION INFORMATION

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<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<td>NA</td>
<td>2.02</td>
<td>NA</td>
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<tr>
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<td>0.05</td>
<td>NA</td>
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<td></td>
<td></td>
<td>Wedelia &amp; Shrubs</td>
<td>NA</td>
<td>5.91</td>
<td>NA</td>
<td>NA</td>
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<td>NA</td>
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<td>Spray heads</td>
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</tbody>
</table>

* Asterisk denotes use of the following shrubs (drought/salt-tolerant) used but not listed:
  - Hibiscus
  - Croton
  - Spider Lily
  - Eldorado
  - Eranthemum
  - Dwarf Date Palm
  - Metal Palm
## Well ID: Keaunui Area 30
- **Well ID:** 3-2001-012
- **Well Name:** Keaunui Area 30
- **WUP MGD:** 0.249
- **Beginning:** 1/1/2007
- **Ending:** 12/31/2008

### 12 Month Moving Average

![Graph showing 12 Month Moving Average](attachment:image.png)

**Legend:**
- Dashed line: MGD
- Solid line: MAV12
- Solid line: WUP

**Week Range:**
- MAV12: 1/1/2007 to 12/12/2008
- WUP: 1/1/2008 to 12/12/2008

**Note:**
- MAV12 = Moving Average of the last 12 months
- WUP = WTP Utility Planning

---

**EXHIBIT 12**

---

**Thursday, December 04, 2008**
## Puuoloa Aquifer System / Ewa Caprock Aquifer Wells, Well Status, and Water Uses

<table>
<thead>
<tr>
<th>WELL NO</th>
<th>WELL NAME</th>
<th>OWNER/USER</th>
<th>INIT CL</th>
<th>PUMP MGD</th>
<th>USE</th>
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<tbody>
<tr>
<td>1900-01</td>
<td>EP 20</td>
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<td>EP 22</td>
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<td>U S Navy</td>
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<tr>
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**EXHIBIT 14**
Puuloa Aquifer System / Ewa Caprock Aquifer
Wells, Well Status, and Water Uses

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<td>U S Fish &amp; Wildlife</td>
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</tbody>
</table>

EXHIBIT 14
July 2, 2008

Mr. Greg Fukumitsu
Tom Nance
Water Resources Engineering
680 Ala Moana Boulevard, Suite 406
Honolulu, Hawaii 96813

Subject: EWA WUP PERMIT

Dear Greg:

We have been responsible for virtually all of the landscape and irrigation system design at Ewa by Gentry since 1990. Based on our 18 years of experience with this development and dealing with the requirement for low maintenance, drought and brackish water tolerant planting we have found through our water conservation efforts that the average daily irrigation requirement is approximately 1.0 gallons per square foot of planting area per week. We have established this irrigation water demand through both on site field experimentation and the following calculation:

**Irrigation Application Rate Calculation**

Ewa 15-year average annual pan evaporation rate: 86.56 inches per year
Less Ewa Gentry average annual rainfall (18.75-inches), derated 25% (14.06) inches per year
Evapotranspiration Rate 72.50 inches per year

72.5 inches per year = 0.87 gals./s.f./week
15% irrigation inefficiency factor, high percentage of small irregular planting areas = 0.13 gals./s.f./week
Total weekly irrigation demand = 1.0 gals./s.f./week

We have found that the rainfall contribution to irrigation must be derated at least 25% based on field experience and the irrigation inefficiency factor is approximately 15% due in large part to the high percentage of small irregular planting areas within the housing parcels.

The irrigation well service areas are outlined on the Irrigation Master Plan prepared by our office. The bulk service area irrigation demand are as follows:

Landscape Architecture
Site Planning
Irrigation Consultants

EXHIBIT 15
<table>
<thead>
<tr>
<th>Area Well</th>
<th>Service Area</th>
<th>Gallons per day</th>
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</thead>
<tbody>
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<td>Area 35 Well</td>
<td>1,785,756 s.f.</td>
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<tr>
<td>Keaunui Well</td>
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<tr>
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<td>Area 13 Well</td>
<td>258,825 s.f.</td>
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</tr>
<tr>
<td>Area 45 Well</td>
<td>462,595 s.f.</td>
<td>66,085</td>
</tr>
</tbody>
</table>

If you have questions regarding this information, please contact me.

Sincerely,
BROWNLINE & LEE

Richard C. Brownlie, ASLA
Principal

cc: Darian Chun
    Gentry Homes, Ltd.
November 19, 2008

Denise Mills
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawai‘i 96809


Aloha e Denise Mills,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated October 28, 2008. OHA has reviewed the project and offers the following comments.

OHA notes that the proposed use is for irrigation and landscaping purposes and that the applicant seeks to use brackish water for this purpose. OHA asks if the landscaping is with drought tolerant local or endemic species common to the area. If there has been little to no effort to reasonably conserve this scarce resource in terms of landscaping, it could cast this request in questionable or unreasonable lighting. If thirsty exotics are being watered, that would also not be compatible with the city Watershed Management Plan and Ewa Development Plan. (Ewa Development Plan, page 4-21)

The applicant is proposing to use a total of 582,783 gallons per day of water for irrigation. If these WUPAs are combined with the nearly identical WUPA No. 856, then this total goes up to 777,551 gallons per day. This amount of water for accessory irrigation should be scrutinized to ensure that the request is reasonable and the use is beneficial. Certainly we agree that potable water should not be used for this proposed purpose.

We request that the applicant use recycled water if possible, or be required to do so when it does become available for this proposed use. OHA notes that the Ewa Development Plan projects future nonpotable demand for this area to be 31 mgd. (Ewa Development Plan, page 4-
19) The demand for this use is to be met with uses such as this proposal, from low chloride irrigation water sources. However, strategies in the city Watershed Management Plan for this area include development of infrastructure not currently in existence or proposed and sources which have since been abandoned such as the Kalaeloa desalinization plant. (Honolulu Advertiser article, 11-17-08 *Kalaeloa desalination plant put on hold*)

We request assurances that uses from this source will not adversely affect constitutionally protected Native Hawaiian uses in the area as protected in the state water code. We also ask if this nonpotable source is low in total dissolved solids that may affect water quality in the quantities requested.

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‘iʻo,

Clyde W. Nāmuʻo
Administrator
November 19, 2008

Denise Mills
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawai‘i 96809

RE: Request for comments on the proposed Water Use Permit Application (WUPA), Pu‘uloa Ground Water Management Area, O‘ahu, TMK: 9-1-70: 132.

Aloha e Denise Mills,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated October 28, 2008. OHA has reviewed the project and offers the following comments.

OHA notes that the proposed use is for irrigation and landscaping purposes and that the applicant seeks to use brackish water for this purpose. OHA asks if the landscaping is with drought tolerant local or endemic species common to the area. If there has been little to no effort to reasonably conserve this scarce resource in terms of landscaping, it could cast this request in questionable or unreasonable lighting.

We request that the applicant use R-2 water if possible, or be required to do so when it does become available for this proposed use. We request assurances that uses from this source will not adversely affect constitutionally protected Native Hawaiian uses in the area as protected in the state water code.

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,

Clyde W. Nāmu‘o
Administrator
November 18, 2008

Ms. Laura H. Thielen, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Water Use Permit Application, Puuloa Ground Water Management Area, Ewa Beach, Oahu, Tax Map Keys: 9-1-116:013, 9-1-102:064, 9-1-136:064, and 9-1-069:005

We have reviewed Water Use Permit Applications (WUPA) 855, 857, 858, and 859 submitted by Gentry Homes, Ltd. and have the following comments to offer.

1. **WUPA 855**: The area identified by the TMK in Table 1 of the application is zoned A-2 Medium Apartment District as stated in Table 1. The proposed use of water for roadway landscaping irrigation in areas of the Ewa by Gentry development is consistent with supporting A-2 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

2. **WUPA 857**: The areas identified by the TMKs in Table 1 of the application are zoned R-5 Residential District, A-1 Low Density Apartment District, and P-2 General Preservation District as stated in Table 1. The proposed use of water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting R-5, A-1, and P-2 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.
3. **WUPA 858:** The areas identified by the TMKs in Table 1 of the application are zoned A-1 Low Density Apartment District as stated in Table 1. The proposed use of the water for roadway landscaping in areas of the Ewa by Gentry development is consistent with supporting A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

4. **WUPA 859:** The areas identified by the TMKs in Table 1 of the application are zoned R-5 Residential District and A-1 Low Density Apartment District as stated in Table 1. The proposed use of water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting R-5 and A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

The locations of the two (2) existing and three (3) proposed wells, and the areas identified by the TMKs in all four (4) applications are not in the Special Management Area.

The Board of Water Supply requests contingency plans for well nos. 1901-08, 1900-24, and 2000-06, should the chloride levels of these wells exceed the 1,000 ppm CWRM limit.

Should you have any questions, please contact Tim Hata of our staff at 768-8043.

Very truly yours,

Henry Eng, FAICP, Director
Department of Planning and Permitting

HE: lh
p:DivFunction/WUP/2008elog2678

cc: Board of Water Supply, Attn: Glenn Oyama
Ms. Laura H. Thielen, Chairperson  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
Box 621  
Honolulu, Hawaii 96809

Dear Ms. Thielen:

Subject: Water Use Permit Application, Puuloa Ground Water Management Area, Ewa Beach, Oahu, Tax Map Key: 9-1-070:132

We have reviewed the application and have the following comments to offer.

The areas identified by the TMKs in Table 1 of the application are zoned R-5 and A-1 as stated in Table 1. The proposed use of the water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting the R-5 and A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when required) a dual water system and non-potable water use to conserve potable water in the Ewa region.

The Soda Creek Well (Well No. 2001-05) and those parcels in Table 1 are not in the Special Management Area.

Should you have any questions, please contact Tim Hata of our staff at 768-8043.

Very truly yours,

Henry Eng, FAICP, Director  
Department of Planning and Permitting

p:DivFunction/WUP/2008elog2679
### WATER USE PERMIT DETAILED INFORMATION

<table>
<thead>
<tr>
<th>Well Number and Name</th>
<th>1901-08</th>
<th>2001-05</th>
<th>2001-12</th>
<th>1901-05</th>
<th>1900-24</th>
<th>2000-06</th>
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<tbody>
<tr>
<td>Gentry Area 45</td>
<td>Gentry Area 13</td>
<td>Keaumui Area 30</td>
<td>Gentry Area 35, 1</td>
<td>Gentry Area 35, 2</td>
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<td>856</td>
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<tr>
<td>Quantity currently permitted (ggd)</td>
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<td>66,000</td>
<td>249,000</td>
<td>56,000</td>
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<td>Quantity requested (ggd)</td>
<td>66,085</td>
<td>194,768</td>
<td>224,615</td>
<td>36,975</td>
<td>255,108</td>
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<td>Proposed use area (total acres)</td>
<td>10.62</td>
<td>31.3</td>
<td>36.09</td>
<td>5.94</td>
<td>41.00</td>
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### Source Information

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<th>New or existing source</th>
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<tr>
<td>Owner/Operator</td>
<td>Gentry Homes</td>
<td>Ewa by Gentry</td>
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<td>Year drilled</td>
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<td>1999</td>
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<tr>
<td>Casing diameter (in.)</td>
<td>Not constructed</td>
<td>11</td>
<td>30</td>
<td>20</td>
<td>Not constructed</td>
<td>Not constructed</td>
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</table>

#### Elevation data (datum = mean sea level, 0 ft)

| Water level | 1.0 |
| Ground surface | 31 |
| Bottom of solid casing | 1 |
| Bottom of perforated casing | -24 |
| Bottom of open hole | -24 |
| Total depth (ft) | 55 |
| Grouted annulus depth (ft) | 27 |
| Pump capacity (gpm) | 100 (proposed) |

#### Notes:

1. Ewa by Gentry Community Association
2. The current permitted pump capacity is 110 gpm. Applicant has applied for a new pump installation permit to increase the capacity to 200 gpm.

---

**ATTACHMENT A**
<table>
<thead>
<tr>
<th>F YR</th>
<th>APP</th>
<th>D</th>
<th>OBJ</th>
<th>CTR</th>
<th>PROJECT</th>
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<th>ACT</th>
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<th>NAME/DESCRIPTION (WANG INPUT)</th>
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<td>C</td>
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<td>Gentry Homes, Ltd.</td>
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**TOTAL** $ 580.77

**REMARKS:**

LINE (1) Reimbursement for Public Notice costs for WUP No. 855, 857, 858 & 859

LINE (2)

LINE (3)

LINE (4)

LINE (5)

LINE (6)

LINE (7)

LINE (8)

LINE (9)

LINE (10)
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Check totals: 580.77
## CWRM Water Use Permit

### Reviewer Comments / Routing

<table>
<thead>
<tr>
<th>Reviewer</th>
<th>Comments Received</th>
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<tr>
<td>DLNR Divisions</td>
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<tr>
<td>Aquatic Resources</td>
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<td>Forestry and Wildlife/NARS</td>
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<td>State Parks</td>
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<td>LUC (Dave Davidson)</td>
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<td>DHHL (Hon. Micah Kane)</td>
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<td>WW Branch (T. See)</td>
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<td>Office of Hawaiian Affairs</td>
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<td>Honolulu BWS (Clifford Lum)</td>
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<td>New wells 1901-08 (1900-24) 2000-24 Reg. Contingency plan if fluoride levels exceed 1000 ppm threshold</td>
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<td>Chester Lao</td>
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<td>Dept of Planning &amp; Permitting</td>
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<td>Other interested parties</td>
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</tbody>
</table>
November 19, 2008

Denise Mills  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, Hawai‘i 96809


Aloha e Denise Mills,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated October 28, 2008. OHA has reviewed the project and offers the following comments.

OHA notes that the proposed use is for irrigation and landscaping purposes and that the applicant seeks to use brackish water for this purpose. OHA asks if the landscaping is with drought tolerant local or endemic species common to the area. If there has been little to no effort to reasonably conserve this scarce resource in terms of landscaping, it could cast this request in questionable or unreasonable lighting. If thirsty exotics are being watered, that would also not be compatible with the city Watershed Management Plan and Ewa Development Plan. (Ewa Development Plan, page 4-21)

The applicant is proposing to use a total of 582,783 gallons per day of water for irrigation. If these WUPAs are combined with the nearly identical WUPA No. 856, then this total goes up to 777,551 gallons per day. This amount of water for accessory irrigation should be scrutinized to ensure that the request is reasonable and the use is beneficial. Certainly we agree that potable water should not be used for this proposed purpose.

We request that the applicant use recycled water if possible, or be required to do so when it does become available for this proposed use. OHA notes that the Ewa Development Plan projects future nonpotable demand for this area to be 31 mgd. (Ewa Development Plan, page 4-
19) The demand for this use is to be met with uses such as this proposal, from low chloride irrigation water sources. However, strategies in the city Watershed Management Plan for this area include development of infrastructure not currently in existence or proposed and sources which have since been abandoned such as the Kalaeloa desalinization plant. (Honolulu Advertiser article, 11-17-08 *Kalaeloa desalination plant put on hold*)

We request assurances that uses from this source will not adversely affect constitutionally protected Native Hawaiian uses in the area as protected in the state water code. We also ask if this nonpotable source is low in total dissolved solids that may affect water quality in the quantities requested.

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,

Clyde W. Nāmu‘o  
Administrator
November 20, 2008

Ken C. Kawahara, P.E., Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. BOX 621
Honolulu, Hawai‘i 96813

Dear Mr. Kawahara:

SUBJECT: Chapter 6E-42 Historic Preservation Review –
Four Water Use Permit Applications – Pu‘uloa Ground Water Management Area
Honouliuli Ahupua‘a, ‘Ewa District, Island of O‘ahu
TMK: (1) 9-1-069:005, 9-1-136:064, 9-1-102:064, 9-1-116:013

Thank you for the opportunity to comment on the aforementioned project. We received the submittal on October 30, 2008. The proposed undertaking involves using water from Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24 for irrigation purposes.

We determine 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: Water will be used from existing wells and no ground disturbing activities are proposed.

However, in the event that historic resources, including human skeletal remains, are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the site needs to be protected from additional disturbance, and the State Historic Preservation Division, O‘ahu Section, needs to be contacted immediately at (808) 692-8015.

Please contact Teresa Kaneakua-Davan at (808) 692-8015 if you have any questions or concerns regarding this letter.

Aloha,

Nancy A. McMahon
Archaeology and Historic Preservation Manager
State Historic Preservation Division

ED
November 19, 2008

TO: Laura H. Thielen, Chairperson
   Commission on Water Resource Management
   Department of Land and Natural Resources

FROM: Orlando Davidson, Executive Officer

SUBJECT: Water Use Permit Application
          Puuloa Groundwater Management Area, Oahu

We have reviewed the subject applications forwarded by your transmittal dated October 28, 2008. Based on the representation of Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, 1900-24 on the accompanying maps, we find that they are located within the State Land Use Urban District.

With respect to your request as to whether the current designation is appropriate for the proposed project, please be advised that pursuant to section 205-2(b), Hawaii Revised Statutes, activities or uses within the Urban District are the jurisdiction of the respective counties as provided by their ordinances or regulations. As such, we suggest that you contact the City and County of Honolulu Department of Planning and Permitting directly for their comments on this matter.

Thank you for the opportunity to comment on the subject applications. As requested, we are returning the cover memo for the subject applications.

Please feel free to contact Bert Saruwatari of my office at 587-3822, should you require clarification or any further assistance.

Enclosure
TO:       Mr. Dan Davidson, Executive Officer  
           Land Use Commission  

FROM:    Laura H. Thielen, Chairperson  
           Commission on Water Resource Management  

SUBJECT: WATER USE PERMIT APPLICATION  
Puuloa Ground Water Management Area, Oahu  

Transmitted for your review and comment are copies of four water use permit applications  
(WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the proposed uses is described in the attached (see application Items 6, 7, 11, and 12). Specifically, we request that you inform us of the current state land use designation for the TMK parcels listed or TMK portions for the proposed use areas. Please also tell us whether the current state land use designation is appropriate for the project. Two maps are included with each application that show the proposed use areas: (1) a TMK map and (2) a map illustrating the Ewa by Gentry Irrigation Master Plan.

Please respond by returning this cover memo along with your review comments by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to these applications.

If you have any questions, require additional information, or would like to request an extension of the review period, please contact Denise Mills at 587-0251.

DM:ss
Attachment(s)

Response:
[ ] We have no objections or comments.
[ ] Objections attached.
[ ] Only comments attached.

Contact person: BERT SARJWARJI
Signed: BERT SARJWARJI

Phone: 587-3824
Date: November 18, 2008
November 17, 2008

Mr. Mark Brant, P.E.
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Dear Mr. Brant:

Invoice for Public Notice – Water Use Permit Applications
WUPA No. 855 (Well No. 1901-08)
WUPA No. 857 (Well No. 2001-12)
WUPA No. 858 (Well No. 1901-05)
WUPA No. 859 (Well Nos. 1900-24 and 2000-06)

We are attaching a copy of the Affidavit of Publication and the Invoice/Receipt for the subject notice. Please submit a check payable to the Department of Land and Natural Resources at the address shown above for the amount due by the date specified below.

Amount Due: $580.77
Due Date: December 1, 2008

All water use permit applicants are required to pay the cost to publish the public notice(s) of their application(s). Payment is required to complete your application. Failure to submit the full amount due by December 1, 2008 will result in a rejection of your application. If you decide to proceed with this project in the future, a new water use permit application must be made, and you will be required to pay for the costs of both this public notice and the new public notice.

If you have any questions, please contact Denise Mills at 587-0251.

Sincerely,

[Signature]

KEN C. KAWAHARA, P.E.
Deputy Director

DEMS: ss
Enclosure

c: Suzanne Alawa
   Tom Nance
November 18, 2008

Ms. Laura H. Thielen, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Water Use Permit Application, Puuloa Ground Water Management Area, Ewa Beach, Oahu, Tax Map Keys: 9-1-116:013, 9-1-102:064, 9-1-136:064, and 9-1-069:005

We have reviewed Water Use Permit Applications (WUPA) 855, 857, 858, and 859 submitted by Gentry Homes, Ltd. and have the following comments to offer.

1. **WUPA 855**: The area identified by the TMK in Table 1 of the application is zoned A-2 Medium Apartment District as stated in Table 1. The proposed use of water for roadway landscaping irrigation in areas of the Ewa by Gentry development is consistent with supporting A-2 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

2. **WUPA 857**: The areas identified by the TMKs in Table 1 of the application are zoned R-5 Residential District, A-1 Low Density Apartment District, and P-2 General Preservation District as stated in Table 1. The proposed use of water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting R-5, A-1, and P-2 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.
3. **WUPA 858**: The areas identified by the TMKs in Table 1 of the application are zoned A-1 Low Density Apartment District as stated in Table 1. The proposed use of the water for roadway landscaping in areas of the Ewa by Gentry development is consistent with supporting A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

4. **WUPA 859**: The areas identified by the TMKs in Table 1 of the application are zoned R-5 Residential District and A-1 Low Density Apartment District as stated in Table 1. The proposed use of water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting R-5 and A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

The locations of the two (2) existing and three (3) proposed wells, and the areas identified by the TMKs in all four (4) applications are not in the Special Management Area.

The Board of Water Supply requests contingency plans for well nos. 1901-08, 1900-24, and 2000-06, should the chloride levels of these wells exceed the 1,000 ppm CWRM limit.

Should you have any questions, please contact Tim Hata of our staff at 768-8043.

Very truly yours,

Henry Eng, FAICP, Director
Department of Planning and Permitting

HE: lh
p:DivFunction/WUP/2008elog2678

cc: Board of Water Supply, Attn: Glenn Oyama
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
State Parks

FROM: Ken C. Kawahara, P.E., Deputy Director  
Commission on Water Resource Management

SUBJECT: Request for Comments  
Four Water Use Permit Applications  
Puuleoa Ground Water Management Area, Oahu

Transmitted for your review and comment are copies of four water use permit applications (WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached applications for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008 which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period, please contact Denise Mills at 587-0251.

DM:ss  
Attachment(s)

Response:

[ ] We have no objections or comments.
[ ] Objections attached.
[ x] Only comments attached.

Contact person: Glenn Higashi  
Phone: 587-0112
Signed:  
Date: 11/18/08
MEMORANDUM

STATE OF HAWAII
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES

TO: Dan A. Polhemus, Administrator
FROM: Glenn R. Higashi, Aquatic Biologist
SUBJECT: Comments on Water Use Permit Application (WUPA No. 855)

Comments Ken C. Kawahara
Requested By: Commission on Water Resource Management
Date of Request: 10/28/08 Date Received: 10/29/08

Summary of Project

Title: Water Use Permit Application (WUPA No. 855) submitted by Gentry Homes, Ltd. for Well No. 1901-08.

Project By: Gentry Homes, Ltd.
Kapolei, HI 96707

Location: Puuloa System, Ewa Caprock Sector, Kapolei, Oahu TMK: (1) 9-1-069: 005

Brief Description:

The applicant, Gentry Homes, Ltd. is proposing a new brackish water well (Well No. 1901-08) to be constructed about 250 ft. south of Keaunui Dr. and west of Fort Weaver Rd., Oahu, Tax Map Key (1) 9-1-069: 005, portion (Kapolei Parkway extension). The quantity of water requested for the new well is 0.066 millions gallons per day and will be used for irrigation of 10.62 acres of roadway landscaping.

Comments:

The Division of Aquatic Resources (DAR) has no objections to this request since the proposed project is not expected to have significant adverse impact on aquatic resources values in the area and there are no anchialine ponds in the area.
October 28, 2008

TO: Morris Atta, Administrator
   Land Division

FROM: Ken C. Kawahara, P.E., Deputy Director
   Commission on Water Resource Management

SUBJECT: Request for Comments
   Water Use Permit Application
   Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment are copies of four water use permit applications (WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008. (Copies of the well construction/pump installation permit applications for Well Nos. 1901-08, 2000-06, and 1900-24 will be sent to you under separate cover for review and comment. We plan to process the well permit applications concurrently with the associated water use permit applications.)

We would appreciate your review of the attached water use permit applications for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period, please contact Denise Mills at 587-0251.

DM:ss
Attachment(s)

Response:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

[ ] A water lease/permit is not required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact person: Gary Martin

Signed: [Signature]

Date: NOV 18 2008
Transmitted for your review and comment are copies of four water use permit applications (WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached applications for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008 which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period, please contact Denise Mills at 587-0251.

Response:

[ ] We have no objections or comments.
[ ] Objections attached.
[ ] Only comments attached.

Contact person: [Signature]
Signed: [Signature]
TO: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
State Parks

FROM: Ken C. Kawahara, P.E., Deputy Director
Commission on Water Resource Management

SUBJECT: Request for Comments
Four Water Use Permit Applications
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment are copies of four water use permit applications
(WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08,
2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the

We would appreciate your review of the attached applications for any conflicts or
inconsistencies with the programs, plans, and objectives specific to your division only. Please
respond by returning this cover memo form by November 20, 2008 which is the legal deadline
for objections. If we do not receive your comments by this date, we will assume you have no
objections to this application.

If you have any questions, require additional information, or would like to request an
extension of the review period, please contact Denise Mills at 587-0251.

DM: ss
Attachment(s)

Response:

[ ] We have no objections or comments.
[ ] Objections attached.
[ ] Only comments attached.

Contact person: Daniel S. Quinn  Phone: 587-0290
Signed:  Date: 11/6/08
TO: Honorable Micah Kane, Chairperson
Department of Hawaiian Home Lands

Honorable Chiyome L. Fukino, M.D., Director
Department of Health
Attn: Mr. Tomas See, Chief, Wastewater Branch
Attn: Stuart Yamada, Chief, Safe Drinking Water Branch

Mr. Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs

Mr. Clifford Lum, Manager
Honolulu Board of Water Supply
Attn: Mr. Chester Lao
Attn: Mr. Barry Usugawa

FROM: Laura H. Thielen, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment are copies of four water use permit applications (WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the proposed use that is described in the attached applications for any conflicts or inconsistencies with the land use designations, plans, policies, programs, or objectives specific to your organization or department only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to these applications.

If you have any questions, require additional information, or would like to request an extension of the review period, please contact Denise Mills at 587-0251.

DM: ss
Attachment(s)

Response: [ ] We have no objections or comments.
[ ] Objections attached.
[ ] Only comments attached.

Contact person: Johnny Ong, Eng. on Oahu 586-4294
Signed: [Signature] Date: 10-31-08
Wastewater Branch
919 Ala Moana Blvd. Room 309
Honolulu, Hawaii 96814-4920
Phone (808) 586-4294 Fax (808) 586-4300

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

Date: 10-31-08
To: Commission on Water Resource Management
Department of Land & Natural Resources
State of Hawaii
Atttn: Denise Mills
From: Lori Morikami, Planner
Planning & Design Section
Ph. 586-4294 Fax 586-4300
Email: lori.morikami@doh.hawaii.gov

Subject: Well Construction/Pump Installation Permit/Water Use Permit for

Well No. 1906 09 710 Nalakole grate water
Well No. 1901 08, 2001-12, 1901-05, 2000-06 9 1900-24 Puu Loa grate water
Well No. 2001 05 Puu Loa grate water

Please find enclosed the application of the above subject project.
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 691
HONOLULU, HAWAII 96806

TO:
Honorable Micah Kane, Chairperson
Department of Hawaiian Home Lands

Honorable Chiyome L. Fukino, M.D., Director
Department of Health
Attn: Mr. Tomas See, Chief, Wastewater Branch
Attn: Stuart Yamada, Chief, Safe Drinking Water Branch

Mr. Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs

Mr. Clifford Lum, Manager
Honolulu Board of Water Supply
Attn: Mr. Chester Lao
Attn: Mr. Barry Usugawa

FROM:
Laura H. Thielen, Chairperson
Commission on Water Resource Management

SUBJECT:
Water Use Permit Application
Punahou Ground Water Management Area, Oahu

Transmitted for your review and comment are copies of four water use permit applications (WUPA Nos. 587, 858, and 859) submitted by County of Maui, for Well Nos. 1901-02, 2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the Honolulu Star Bulletin of October 29, 2008 and November 5, 2008.

We would appreciate your review of the proposed use that is described in the attached applications for any conflicts or inconsistencies with the land use designations, plans, policies, programs, or objectives specific to your organization or department only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to these applications.

If you have any questions, require additional information, or would like to request an extension of the review period, please contact Denise Mills at 587-0251.

DM:ss
Attachment(s)

Response:

[ ] We have no objections or comments.
[ ] Objections attached.
[ ] Only comments attached.

Contact person: 

Signed: 

Phone: 

Date: 10/30/08

OCT-30-2008 11:31AM FAX:8085864351 ID:DLNR CRWM PAGE:002 R=94%
Review transmittals for 5 WUPAs:
Ewa by Gentry Comm. Assoc. WUPA 856
Gentry Homes WUPAs 855, 857, 858, 859 (I still have the copies of these applications, making corrections/notations on them for reviewers.)
Mr. Mark Brant, P.E.
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Dear Mr. Brant:

We acknowledge receipt, on October 8, 2008, of your completed water use permit applications for two new water use permits and modification of two existing water use permits, as follows:

1. WUPA No. 855 for Gentry Area 45 (new use; new Well No. 1901-08)
2. WUPA No. 857 for Keaunui Area 30 (application to modify WUP No. 793; Well No. 2001-12)
3. WUPA No. 858 for Gentry Area 13 (application to modify WUP No. 794; Well No. 1901-05)
4. WUPA No. 859 for Gentry Area 35 (new use; two new wells, Well Nos. 1900-24 and 2000-06)

You can expect your applications to be processed within ninety (90) days from the date of receipt unless there are objections to one or all of your applications.

Enclosed is a copy of the public notice for your water use permit application which will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008. You will be required to pay the cost to publish the public notice. The cost in most cases is around $400, but can be expected to be more for yours since we are combining the information for all four permits into one notice. We will send an invoice shortly after the notice has been published.

Please be aware that there could be objections to your application. If objections are made, the objector is required to file such objections with the Commission and is required to send you a copy of the objections.

You or any other party, may respond to any objections filed with the Commission by filing a brief in support of your application with the Commission within ten (10) days after an objection has been filed. You or the other party, must also send a copy of your response to the objector.

If you have any questions about the permit process, please contact Denise Mills at 587-0251.

Sincerely,

[Signature]
KEN C. KAWAHARA, P.E.
Deputy Director

DM:ss
Enclosure

c: Suzanne Alawa
   Tom Nance
Transmitted for your review and comment are copies of four water use permit applications (WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached applications for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008 which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period, please contact Denise Mills at 587-0251.
Transmitted for your review and comment are copies of four water use permit applications (WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008. (Copies of the well construction/pump installation permit applications for Well Nos. 1901-08, 2000-06, and 1900-24 will be sent to you under separate cover for review and comment. We plan to process the well permit applications concurrently with the associated water use permit applications.)

We would appreciate your review of the attached water use permit applications for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period, please contact Denise Mills at 587-0251.

DM:ss
Attachment(s)
Response:

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<td>[ ]</td>
<td>A water lease/permit is required of this applicant and an application for such will be requested by our division.</td>
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<tr>
<td>[ ]</td>
<td>A water lease/permit is <strong>not</strong> required of this applicant.</td>
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<td>[ ]</td>
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<td>[ ]</td>
<td>No objections</td>
</tr>
<tr>
<td>[ ]</td>
<td>Other comments:</td>
</tr>
</tbody>
</table>

Contact person: ____________________________ Phone: ____________________________

Signed: ____________________________ Date: ____________________________
TO: Honorable Micah Kane, Chairperson
Department of Hawaiian Home Lands

Honorable Chiyome L. Fukino, M.D., Director
Department of Health
Attn: Mr. Tomas See, Chief, Wastewater Branch
Attn: Stuart Yamada, Chief, Safe Drinking Water Branch

Mr. Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs

Mr. Clifford Lum, Manager
Honolulu Board of Water Supply
Attn: Mr. Chester Lao
Attn: Mr. Barry Usugawa

FROM: Laura H. Thielen, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment are copies of four water use permit applications (WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the proposed use that is described in the attached applications for any conflicts or inconsistencies with the land use designations, plans, policies, programs, or objectives specific to your organization or department only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to these applications.

If you have any questions, require additional information, or would like to request an extension of the review period, please contact Denise Mills at 587-0251.

DM:ss
Attachment(s)

Response:

[ ] We have no objections or comments.
[ ] Objections attached.
[ ] Only comments attached.

Contact person: ____________________________ Phone: ____________________________
Signed: ____________________________ Date: ____________________________
TO: Mr. Dan Davidson, Executive Officer  
Land Use Commission

FROM: Laura H. Thielen, Chairperson  
Commission on Water Resource Management

SUBJECT: WATER USE PERMIT APPLICATION  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment are copies of four water use permit applications (WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24. Public notice of these applications will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the proposed uses is described in the attached (see application Items 6, 7, 11, and 12). Specifically, we request that you inform us of the current state land use designation for the TMK parcels listed or TMK portions for the proposed use areas. Please also tell us whether the current state land use designation is appropriate for the project. Two maps are included with each application that show the proposed use areas: (1) a TMK map and (2) a map illustrating the Ewa by Gentry Irrigation Master Plan.

Please respond by returning this cover memo along with your review comments by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to these applications.

If you have any questions, require additional information, or would like to request an extension of the review period, please contact Denise Mills at 587-0251.

DM:ss
Attachment(s)

Response:

[ ] We have no objections or comments.
[ ] Objections attached.
[ ] Only comments attached.

Contact person: ____________________________ Phone: ____________________________

Signed: ____________________________ Date: ____________________________

PLEASE RESPOND BY RETURNING THIS COVER MEMO FORM BY NOVEMBER 20, 2008, WHICH IS THE LEGAL DEADLINE FOR OBJECTIONS. IF WE DO NOT RECEIVE YOUR COMMENTS BY THIS DATE, WE WILL ASSUME YOU HAVE NO OBJECTIONS TO THIS APPLICATION.

IF YOU HAVE ANY QUESTIONS, REQUIRE ADDITIONAL INFORMATION, OR WOULD LIKE TO REQUEST AN EXTENSION OF THE REVIEW PERIOD, PLEASE CONTACT DENISE MILLS AT 587-0251.

DM:ss
Attachment(s)
Response:

[ ] The proposed water use(s) is consistent with the current zoning designation(s).

[ ] This well project [ ] requires [ ] does not require an SMA permit.

If an SMA permit is required, it [ ] has been approved [ ] has not been approved and [ ] is currently active [ ] is not currently active.

[ ] Comments attached.

Contact person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
October 28, 2008

Honorable Mufi Hannemann, Mayor
City & County of Honolulu
City Hall
Honolulu, HI 96813

Dear Mayor Hanneman:

Notice of Water Use Permit Applications
Ewa by Gentry Project
Puuloa Ground-Water Management Area, Oahu

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-171-17(a), we are sending you copies of the public notice and four water use permit applications (WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24, which will be published in the Honolulu Star Bulletin.

In addition, Section 13-171-13(b), of our Administrative Rules, states:

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."

In accordance with the procedure that has been established between our staff and the City’s Department of Planning and Permitting (DPP), we have sent copies of the four applications to DPP and the Board of Water Supply for review and comment. We look forward to receiving comments from DPP and BWS within the next sixty (60) days, on whether the proposed water use is consistent with the City’s plans, policies, land use designations, and zoning.

Sincerely,

Laura H. Thielen
Chairperson

DM:ss
Enclosures
TO: Other Interested Parties
FROM: Ken C. Kawahara, P.E., Deputy Director
Commission on Water Resource Management
SUBJECT: Request for Comments
Water Use Permit Applications for the Ewa by Gentry Project
Puuloa Ground Water Management Area, Oahu

In addition to serving you notice, as required by 174C-52 (a), Hawaii Revised Statutes, we transmit for your review and comment copies of four water use permit applications (WUPA Nos. 855, 857, 858, and 859) submitted by Gentry Homes, Ltd. for Well Nos. 1901-08, 2001-12, 1901-05, 2000-06, and 1900-24. (Well Nos. 1901-08, 2000-06, and 1900-24 are proposed new sources of water supply for the project.) Public notice of the attached applications will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached applications for any conflicts or inconsistencies with the programs, plans, and objectives of the organization or agency that you represent. Written objections should be made in accordance with Section 13-171-18, Hawaii Administrative Rules, and must be filed by the November 20, 2008 deadline. If we do not receive your comments by this date, we will assume you have no objections to these applications.

If you have any questions, require additional information, or would like to request an extension of the review period for these applications, please contact Denise Mills at 587-0251.

DM:ss
Attachment(s)

Response:

[ ] We have no objections or comments.
[ ] Objections attached.
[ ] Only comments attached.

Contact person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
PUBLIC NOTICE

Applications for Water Use Permits
Puuloa Ground Water Management Area, Oahu

The Commission on Water Resource Management has received four water use permit applications from Gentry Homes, Ltd. Two of these applications are for new water use supplied by three new water supply wells, and two are to modify existing water use supplied by two existing water supply wells. The Commission's receipt of these applications is hereby made public in accordance with Section 13-171, Hawaii Administrative Rules, "Designation and Regulation of Water Management Areas."

**Applicant:**
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

**Landowner:**
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

**Date Applications Filed as Complete:**
October 8, 2008

**Hydrologic Unit, Aquifer Areas:**
Puuloa System, Ewa Caprock Sector, Oahu

The two applications for new water use permits are:

- **WUPA No. 855**
  
  **Water Source:**
  Gentry Area 45 Well (Well No. 1901-08)
  Gentry Area 45 (Well No. 1901-08), a proposed new well to be constructed about 250 ft south of Keaunui Dr and west of Fort Weaver Rd, Oahu, Tax Map Key (1) 9-1-069:005

  **Quantity Requested:**
  0.066 million gallons per day

  **Existing/New Use:**
  New / Irrigation of 10.62 acres of roadway landscaping

  **Place of Water Use:**
  Tax Map Key (1) 9-1-069:005, portion (Kapolei Parkway extension).

- **WUPA No. 859**
  
  **Water Source:**
  Gentry Area 35 (Well Nos. 1900-24 and 2000-06)
  Gentry Area 35, Wells #1 and #2 (Well Nos. 1900-24 and 2000-06). Two proposed new wells to be constructed near Hoowalea St (2000-06) and near the intersection of Kuanoo St and Hoomahana St (1900-24), Oahu, Tax Map Key (1) 9-1-136-064

  **Quantity Requested:**
  0.255 million gallons per day

  **Existing/New Use:**
  New / Irrigation of 41.0 acres of roadway landscaping

  **Place of Water Use:**
  Multiple TMKs or portions of TMKs. Roadway landscaping within the area bounded generally by the Hawaii Prince Golf Club north boundary to the south, Ft Weaver Rd to the west, Iroquios Rd and East-West Loch Rd to the north, and Makalea St and Hoowalea St to the east.

The two applications to modify existing water use permits are:

- **WUPA No. 857**
  
  **Water Source:**
  Keaunui Area 30 (Well No. 2001-12)
  Keaunui Area 30 (Well No. 2001-12) on Keaunui Dr at Ma’ana St, Oahu, Tax Map Key (1) 9-1-102:064

  **Quantity Requested:**
  0.225 million gallons per day

  **Existing/New Use:**
  Existing / Irrigation of 36.09 acres of roadway landscaping

  **Place of Water Use:**
  Multiple TMKs or portions of TMKs. Roadway landscaping within the area bounded generally by Arizona Rd to the north, Ft Weaver Rd to the west, Iroquios Rd and East-West Loch Rd to the south, and various lots around Keaunui Dr.
• **WUPA No. 858**

  **Water Source:** Gentry Area 13 (Well No. 1901-05)

  **Quantity Requested:** 0.035 million gallons per day.

  **Existing/New Use:** Existing / Irrigation of 5.94 acres of roadway landscaping

  **Place of Water Use:** Multiple TMKs. Roadway landscaping along Geiger Rd west of Kapolei Parkway, and within the area bounded generally by the Geiger Rd to the north, Kapolei Parkway to the east, Launahele St to the south, and the eastern boundary of the Coral Creek Golf Course.

A map showing the Irrigation Master Plan for the Ewa by Gentry project with specific irrigation zones to covered by these water use permit applications is available for public viewing on the Commission's website at [http://www.hawaii.gov/dlnr/cwrm/](http://www.hawaii.gov/dlnr/cwrm/) or at 1151 Punchbowl Street, Room 227, Honolulu, Hawaii.

Written objections or comments on the above application may be filed by any person who has property interest in any land within the hydrologic unit of the source of water supply, any person who will be directly and immediately affected by the proposed water use, or any other interested person. Written objections shall: (1) state property or other interest in the matter (provide TMK information); (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; and (3) state all grounds for objections to the proposed permit. Written objections must be received by November 20, 2008. Objections must be sent to (1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809; and (2) the applicant at the above address.

**COMMISSION ON WATER RESOURCE MANAGEMENT**

KEN C. KAWAHARA, P.E., Deputy Director for LAURA H. THIELEN, Chairperson

Dated: October 23, 2008

Thanks for your help on this. I have finished my part to begin processing the permits, and we estimate it will be 1-2 weeks before all the paperwork is done on our end and notices are submitted for publishing. You’ll receive a copy of our acceptance letters to Mike Brant and Suzanne Alawa. We accepted the applications as complete on Oct. 8, which triggers the 90-day timeline for processing unless there are objections.

I’ll contact you if we have questions about the irrigation plans for each area.

-Denise

"Greg Fukumitsu" <greg@tnwre.com>

Denise,

The client confirmed its OK to proceed with the Public Notice.

Thanks,

Greg Fukumitsu

--

Tom Nance Water Resource Engineering
680 Ala Moana Blvd., Suite 406
Honolulu, Hawaii 96813
Ph: 808-537-1141
Fax: 808-538-7757
Roy-- The notices as drafted are OK'd by Gentry. So it looks like they're ready to move forward. --dm

----- Forwarded by Denise E Mills/DLNRIStateHiUS on 10/16/2008 07:32 AM -----

"Greg Fukumitsu"
<greg@tnwre.com>
10/15/2008 06:11 PM

To "Mills, Denise" <denise.e.mills@hawaii.gov>
cc

Subject Gentry WUP permits

Denise,

The client confirmed its OK to proceed with the Public Notice.

Thanks,

Greg Fukumitsu
--
Tom Nance Water Resource Engineering
680 Ala Moana Blvd., Suite 406
Honolulu, Hawaii 96813
Ph: 808-537-1141
Fax: 808-538-7757
FYI-- Hopefully we'll hear from Gentry soon if any corrections are needed on the notices.

--Denise

----- Forwarded by Denise E Mills/DLNR/StateHiUS on 10/15/2008 07:00 AM -----

Denise,

Thanks, I'm sending this to Gentry for their review.. it looks OK.. wait till I hear from them.

Thank, Greg

On Tue, Oct 14, 2008 at 8:00 AM, <Denise.E.Mills@hawaii.gov> wrote:

Hi Greg,

I've drafted the public notices for the Gentry Homes and Ewa by Gentry water use permit applications. We will combine the four Gentry Homes applications into one notice, and will have a second notice for the Ewa by Gentry Community Association application. I would appreciate it if you would review the draft notices for accuracy and let me know if corrections are needed.

Rather than listing use TMKs on the notices (there are too many for all but one of the applications), I have prepared general descriptions of the proposed use areas based on the Irrigation Master Plan. This is just to help public reviewers, those who may be interested, navigate the areas that each application covers. We will also plan to post the Irrigation Master Plan on our website for public viewing--

The draft notices are attached for your review and comment. When you open this document, you will be prompted with a message regarding macros-- select "No." (Dates, noted in these drafts with XXX placeholders, will be added when we are ready to publish the notices.)

Thanks for your help! Denise
Hi Greg,

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The draft notices are attached for your review and comment. When you open this document, you will be prompted with a message regarding macros-- select "No." (Dates, noted in these drafts with XXX placeholders, will be added when we are ready to publish the notices.)

Thanks for your help! Denise

Gentry_WUPA draft notices.doc
PUBLIC NOTICE

Applications for Water Use Permits
Puuloa Ground Water Management Area, Oahu

The Commission on Water Resource Management has received four water use permit applications from Gentry Homes, Ltd. Two of these applications are for new water use supplied by three new water supply wells, and two are to modify existing water use supplied by two existing water supply wells. The Commission's receipt of these applications is hereby made public in accordance with Section 13-171, Hawaii Administrative Rules, "Designation and Regulation of Water Management Areas."

Applicant: Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Landowner: Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Date Applications Filed as Complete: October 8, 2008

Hydrologic Unit: Aquifer Areas: Puuloa System, Ewa Caprock Sector, Oahu

The two applications for new water use permits are:

- **WUPA No. 855**
  - Water Source: Gentry Area 45 Well (Well No. 1901-08)
  - Gentry Area 45 (Well No. 1901-08), a proposed new water supply well to be constructed about 250 ft south of Keaunui Dr and west of Fort Weaver Rd, Oahu, Tax Map Key (1) 9-1-069:005
  - Quantity Requested: 0.066 million gallons per day
  - Existing/New Use: New / Irrigation of 10.62 acres of roadway landscaping
  - Place of Water Use: Tax Map Key (1) 9-1-069:005, portion (Kapolei Parkway extension).

- **WUPA No. 859**
  - Water Source: Gentry Area 35 (Well Nos. 2000-06 and 1900-24)
  - Gentry Area 35, Wells #1 and #2 (Well Nos. 2000-06 and 1900-24). Two proposed new wells to be constructed near Hoowalea St (2000-06) and near the intersection of Kuanoo St and Hoomahana St (1900-24), Oahu, Tax Map Key (1) 9-1-136:064
  - Quantity Requested: 0.255 million gallons per day
  - Existing/New Use: New / Irrigation of 41.0 acres of roadway landscaping
  - Place of Water Use: Multiple TMKs or portions of TMKs. Roadway landscaping within the area bounded generally by the Hawaii Prince Golf Club north boundary to the south, Ft Weaver Rd to the west, Iroquois Rd and East-West Loch Rd to the north, and Makalea St and Hoowalea St to the east.

The two applications to modify existing water use permits are:

- **WUPA No. 857**
  - Water Source: Keaunui Area 30 (Well No. 2000-06)
  - Keaunui Area 30 (Well No. 2001-12) on Keaunui Dr at Ma'ana St, Oahu, Tax Map Key (1) 9-1-102:064
  - Quantity Requested: 0.225 million gallons per day
  - Existing/New Use: Existing / Irrigation of 36.09 acres of roadway landscaping
  - Place of Water Use: Multiple TMKs or portions of TMKs. Roadway landscaping within the area bounded generally by Arizona Rd to the north, Ft Weaver Rd to the west, Iroquois Rd and East­West Loch Rd to the south, and various lots around Keaunui Dr.
PUBLIC NOTICE

Application for Water Use Permit
Puuloa Ground Water Management Area, Oahu

The following application to modify an existing water use permit has been received by the Commission on Water Resource Management. The Commission’s receipt of this application is hereby made public in accordance with Section 13-171, Hawaii Administrative Rules, "Designation and Regulation of Water Management Areas."

WUPA No. 856  Soda Creek III (Well No. 2001-05)

Applicants:  Ewa by Gentry Community Association
            91-1795 Keaunui Drive
            Ewa Beach, HI  96706

Landowners:  Ewa by Gentry Community Association
              91-1795 Keaunui Drive
              Ewa Beach, HI  96706

Date Application Filed as Complete:  October 8, 2008
Hydrologic Unit: Aquifer Areas:  Puuloa System, Ewa Caprock Sector, Oahu
Water Source:  Soda Creek III (Well No. 2001-05; aka Sun Terra Tot Lot Well) near Launahele Street south of Geiger Road, Oahu, Tax Map Key (1) 9-1-070:132
Quantity Requested:  0.195 million gallons per day
Existing/New Use:  Existing / Irrigation of 31.3 acres of roadway and park irrigation
Place of Water Use:  Multiple TMKs. Landscaping along Kapolei Parkway and areas bounded generally by Kapolei Parkway, Geiger Road, Fort Weaver Road, and Keaunui Drive. A map showing the Irrigation Master Plan for the Ewa by Gentry project with the irrigation zone covered by this water use permit application is available for public viewing on the Commission’s website at http://www.hawaii.gov/dlnr/cwrm/... or at 1151 Punchbowl Street, Room 227, Honolulu, Hawaii.

Written objections or comments on the above application may be filed by any person who has property interest in any land within the hydrologic unit of the source of water supply, any person who will be directly and immediately affected by the proposed water use, or any other interested person. Written objections shall: (1) state property or other interest in the matter (provide TMK information); (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; and (3) state all grounds for objections to the proposed permit. Written objections must be received by XXX. Objections must be sent to: (1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809 and (2) the applicant at the above address.

COMMISSION ON WATER RESOURCE MANAGEMENT

LAURA H. THIELEN
Chairperson

Dated:

Publish in: Honolulu Star Bulletin issues of XXX and XXX
Hi Greg,

Based on our conversation yesterday about Table 2, the additional general information we agreed on should be sufficient. For our model assessment, I will extrapolate the information to nearly TMKs, which are very likely to have the same or very similar soil conditions and water needs. I'm trying to keep it simple to make it work with the level of detail you're able to provide.

Based on your new map, I designated the Area 35 Well #1 (the south well) as state well no. 1900-24 and Area 35 #2 as 2000-06. (I had these reversed before getting your updated map yesterday.) Because the wells haven't been constructed yet and the permit hasn't been issued, it's easy to change the state well numbers at this stage in the process. It's messier to do it later, so thank you for checking.

I hope this helps.

-Denise

"Greg Fukumitsu" <greg@tnwre.com>

---

Denise,

Thanks for the confirmation on my submittal. I'm assuming we're current on all the information you asked for except the Table 2 data for each WUP application. Gentry's landscape architect is currently working on the Table 2 data to complete our initial submittal. So we don't confuse the Area 35 Well Nos. 1 & 2, can you recheck it against your GIS system and confirm which SW # 1900-24 and 2000-06 is Well No. 1 and 2. Note, both skimming wells are on one WCR/PI permit.

Thanks, Greg Fukumitsu

---

On Fri, Sep 26, 2008 at 9:19 AM, <Denise.E.Mills@hawaii.gov> wrote:

Thank you for the information Greg.

We have updated our well information data base with the correct GPS coordinates for the Area 30
Keaunui Well (Well No. 2001-12) and the Area 13 Well (Well No. 1901-05).

As noted in our September 17 letter, we are planning to process the well construction/pump installation permits for the new wells (Nos. 1900-24, 1901-08, and 2000-06) with the Water Use Permit Applications once we receive the landscape irrigation information from you.

--Denise

Denise E. Mills
HYDROLOGIST

Hawaii Department of Land and Natural Resources
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813
Phone: (808) 587-0251
Denise.E.Mills@hawaii.gov

"Greg Fukumitsu" <greg@tnwre.com>  To "Mills, Denise" <denise.e.mills@hawaii.gov>  cc "Chun, Darian" <DarianC@GentryHawaii.com>, "Nance, Tom" <tom@tnwre.com>
09/25/2008 01:52 PM  Subject Gentry WUP and WC/PI permit applications

Denise,

We're working on the WUP permit table 2 data with our landscape architect and hope to have it soon. The following will address the other items listed on your September 17, 2008 letter to us:

Water Use Permit Applications:

1. WUP No. 857 (modify WUP No. 793) - Area 30 Keaunui Well (SW# 2001-12). Please note the TMK on the WUP application is correct. Attached is the revised USGS map for this well with the Latitude and Longitude location for this well. GPS location confirmed by field verification on 9-24-08.

2. WUP No. 858 (modify WUP No. 794) - Area 13 Well (SW# 1901-05). Please note the TMK on the WUP application is correct. Attached is the revised USGS map for this well with the Latitude and Longitude location for this well. GPS location confirmed by field verification on 9-24-08.
Well Construction/Pump Installation Permit Application:

3. Gentry Area 35 Well Nos. 1 & 2 (SW Nos. 2000-06 AND 1900-24). I've attached the revised USGS map showing the well locations.

a.) Attached is a pdf with photographs of both wells as requested. Please note Area 35 No. 1 will be the southern well on this map.

b.) Section 23. SHPD approval. See attached Partial EIS.pdf. It contains the SHPD clearance for both Area 35 and 45 proposed irrigation wells.

Please call me if you have any questions on this submittal.

Thanks,

Greg Fukumitsu

Tom Nance Water Resource Engineering
680 Ala Moana Blvd., Suite 406
Honolulu, Hawaii 96813
Ph: 808-537-1141
Fax: 808-538-7757
September 17, 2008

Mr. Tom Nance
Tom Nance Water Resource Engineering
680 Ala Moana Boulevard, Suite 406
Honolulu, HI 96813-5411

Dear Mr. Nance:

Ground Water Use Permit (WUP) Applications for
WUP No. 855 (new use) – Well No. 1901-08
WUP No. 856 (modify WUP No. 792) – Well No. 2001-05
WUP No. 857 (modify WUP No. 793) – Well No. 2001-12
WUP No. 858 (modify WUP No. 794) – Well No. 1901-05
WUP No. 859 (new use) – Well Nos. 1900-24 and 2000-06

Well Construction/Pump Installation Permit Applications
Well Nos. 1901-08, 1900-24, and 2000-06

We received, on August 18, 2008, the five captioned ground water use permit applications (WUPAs), two well construction/pump installation permit applications for three new wells, and the required filing fees. For time and cost efficiency, we would prefer to process your well construction/pump installation permit applications concurrently with the WUPAs, unless there are reasons that we should process your well construction/pump installation applications in advance of the WUPAs. We have reviewed each of these applications for completeness and have identified certain matters that must be addressed before we can accept these applications for processing.

Ground Water Use Permit Applications

1. **WUP No. 855 (application for new use)** – Item 12 (Table 2) has not been completed. Table 2 is applicable to the proposed use permit and therefore must be completely filled in and submitted to complete this application. Though your cover letter identifies total S.F. serviced and landscape irrigation, we need to know your declared information on irrigation practices (items E through H.) and types of landscape vegetation present (see Table 2 from IWREDSS attached). We enter the information requested on Table 2 as input values for a model that we use to evaluate the quantity(ies) of water requested for irrigation. Please note that the instructions at the top of Table 2 clearly state, “...including landscape and golf course irrigation uses.” (emphasis added) The information should include the type(s) of grass (e.g., zoysia, bluegrass) that will be irrigated, or if grasses are not planned, the type(s) of shrubs and trees that may be planted; every plant does not need to be named...
individually. Without this information, we are unable to accurately assess whether the total quantity of water requested is reasonable for the proposed uses and use locations.

2. **WUP No. 856 (application to modify WUP No. 792)** – Item 12 (Table 2) must be completely filled in and submitted as described earlier.

3. **WUP No. 857 (application to modify WUP No. 793)**
   a) Item 12 (Table 2) must be completely filled in and submitted as described previously.
   b) The well location information provided for Well No. 2001-12 on the WUPA and on the maps attached to the WUPA is inconsistent both within your application and with the information contained in our well index. These inconsistencies and the information required to address them include:
      - Our record shows that Well No. 2001-12 is located within TMK 1-9-102:031, not the TMK listed on your application. Please confirm for us that the TMKs within this portion of the Gentry Homes’ development have been changed since the well was completed in 1999.
      - The well location shown on the USGS quad map included with your application is different from the location shown on your TMK map. The USGS map location places the well within TMK 1-9-102:009. Please provide the correct map location for this well and submit corrected USGS and TMK maps.
      - The latitude and longitude for this well in our well index are 21°20'22" and 158°01'27" (NAD 83). These coordinates place the well at a location that is approximately 2,200 feet south of the location shown on your application. Please provide a GPS coordinate reading for this well to verify the well location.

4. **WUP No. 858 (application to modify WUP No. 794)**
   a) Item 12 (Table 2) must be completely filled in and submitted as described previously.
   b) The well location information provided for Well No. 1901-05 on the WUPA and on the maps attached to the WUPA is inconsistent both within your application and with the information contained in our well index. These inconsistencies and the information required to address them include:
      - Our record shows that Well No. 1901-05 is located within TMK 1-9-069:008, not the source TMK given on the WUPA. Also, the TMK map included with your application appears to place the well within TMK 1-9-069-019, which is also inconsistent with the location listed on the application. Please provide the correct TMK data for Well No. 1901-05.
      - The latitude and longitude for this well in our well index are 21°19'44" and 158°01'09" (NAD 83). These coordinates place the well at a location that is approximately 3,100 feet southeast of the location shown on your application, east of Fort Weaver Road. Please provide a GPS coordinate reading for this well to verify the well location.
      - Please submit corrected USGS and TMK maps.

5. **WUP No. 859 (application for new use)** – Item 12 (Table 2) must be completely filled in and submitted as described previously.
Well Construction/Pump Installation Permit Applications

1. Both applications – Applications for well construction/pump installation permits are required to be made by a contractor with a valid and active C-57, C-57a, or A license and who will perform the work, in accordance with the State Water Code (§ 174C-84(a), HRS). Because you have not identified a qualifying contractor, your application will not be accepted as complete until a qualifying contractor signs and completes sections 24 and 25 on the application form. However, we will process your incomplete application for review and if the review warrants the issuance of a permit, a letter of assurance will be issued in lieu of the permit. The letter of assurance will state that our intention to issue a permit when the contractor signs the application and the following conditions are met: (a) the contractor has no outstanding issues with the Commission; (b) there have been no significant changes to the application; (c) there have been no significant changes to applicable laws, rules, regulations; (d) there have been no significant changes to hydrologic conditions at or near the proposed well location.

2. Well No. 1901-08 (Gentry Area 45) – Contractor signatures required in Sections 24 and 25 (see Comment 1, above).

3. Well Nos. 2000-06 and 1900-24 (Gentry Area 35, #1 and #2)
   a) Please provide a photograph of the proposed well site.
   b) Section 23. State Historic Preservation Division (SPHD) – Please provide documentation from the SHPD showing the record of Gentry Homes’ consultation with the HPD for the project.
   c) Contractor signatures required in Sections 24 and 25 (see Comment 1, above).

We will accept the captioned WUPAs as complete upon receipt of the information outlined above, and we will accept your well construction/pump installation permit applications for processing upon receipt of the required information to complete the application for Well Nos. 2000-06 and 1900-24. You can expect these applications to be processed within 90 days from the date we receive the required information. You should be aware that WUPA processing could take longer if there are objections from the public and that pump installation permits cannot be issued until WUPs associated with those wells are first obtained.

Please contact Denise Mills of the Commission staff at 587-0251 if you have any questions concerning these applications.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DM:ss
Attachment

c: Mike Brant, Gentry Homes, Ltd
Suzanne Alawa, Ewa by Gentry Community Association
Dear Mr. Kawahara:

Well Construction/Pump Installation Permit Application and Ground Water Use Permit Application for New Use for the Gentry Area 45 Well in the Puuloa Aquifer System

On behalf of Gentry Homes, Ltd., I am pleased to submit the Well Construction/Pump Installation Permit and Ground Water Use Permit Applications, $50 filing fee, and other attachments for the Gentry Area 45 Well in the Puuloa Aquifer System. Since the drilling contractor has not been selected yet, we understand that a Letter of Assurance would be issued for the Well Construction Permit pending the contractor’s selection.

If you have any questions or need additional information, feel free to call me or Mike Brant of Gentry Homes, Ltd. at 599-8229. Thank you for your attention to this matter.

Sincerely,

Tom Nance

cc: Mike Brant
    Darian Chun

Attachments
# Department of Land and Natural Resources

**UAC or Attached Worksheet**

**Date:** August 20, 2008

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**Total:** $175.00

**Remarks:**

- Line (1): Manawai-Felton Well
- Line (2): Gentry 45 Well (WCPA/PIPA/UPA)
- Line (3): WUP No. 792
- Line (4): WUP No. 793
- Line (5): WUP No. 794
- Line (6): Gentry Area 35 Well Nos. 1 & 2 (WCPA/PIPA/UPA)
- Line (7):  
- Line (8):  
- Line (9):  
- Line (10):  

**Document No.:**

**Page dimensions:** 620.6x809.5
COMMISSION ON WATER RESOURCE MANAGEMENT
ROUTE SLIP FOR NEW APPLICATIONS
FROM: DENISE DATE: 26-Aug-08 SUSPENSE DATE: 2-Sep-08
TO: CHING, F. INIT: KUNIMURA, I. TO: Mills, D. INIT: NAKAMA, L. FOR: 1 Approval 3 Signature
2 HARDY, R. INIT: OHYE, M. FOR: 4 Information
1 FUJII, N. INIT: SAKODA, E. FOR: 5 SWANSON, S.
1 GOODING, K. INIT: UYENO, D. FOR: 2 HOAGBIN, S. INIT: YODA, K.
2 ICE, C. INIT: KAWAHARA, K. FOR: 3 YOSHINAGA, M.

PLEASE:
1 Approval - See Me
3 Signature - Review & Comment
4 Information - Take Action
5 SWANSON, S. - Type Draft acknow letter
2 HOAGBIN, S. - Type Final, label file folder, update People.db
3 YOSHINAGA, M. - File
5 SWANSON, S. - Xerox copies

WELL NUMBER 1901-08 WELL NAME Gentry 45 WUP Number 855

☐ WELL CONSTRUCTION ☐ PUMP INSTALLATION ☐ WUPA

ATTACHMENTS FOR APPLICATION PROCESSING - Both applicant & staff generated
1 TRANS. LETTER
2 PERMIT PROCESS TABLE
3 CWRM MAP
4 APPL. FORM (11 COPIES)
5 USGS MAPS (11 COPIES)
6 TAX MAPS (11 COPIES)
7 PARCEL OWNER VERIF. MLs PRINTOUT
8 CONTRACTOR VERIF. DCCA LICENSE SCREEN PRINTOUT
9 ALL INFO FILLED IN
10 BACKGROUND CHECK
11 $25 FEE DEPOSIT SLIP (SMA map printout http://gis.hicentral.com/website/parcelzoning/viewer.htm., or INGRID’S SMA/CD MAP)
12 DHPCDUP/SMAPre-screen (LUC map printout http://luc.state.hi.us/luc_maps.htm., or INGRID’S SMA/CD MAP)

FOLDER:
☐ MADE NEW FILE FOLDER, ATTACHED
☐ FILE FOLDER ALREADY MADE, IN FILE CABINET

INCOMPLETE ACTION DATES:

DATE ACTION
will need to run IWREDDS model before CWRM mtg.
Request app to complete Table 2 of GWUPA-N

WUP 855 (1901-08) 856 (2001-05)
857 (2001-12) 858 (1901-05)
859 (1900-24 & 2006-06)
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<td>Pink Asystasia &amp; Shrubs *</td>
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<td>1.04</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Pohinahina &amp; Shrubs *</td>
<td>NA</td>
<td>0.71</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Seashore Paspalum</td>
<td>NA</td>
<td>2.17</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Zoysia 'El Toro'</td>
<td>NA</td>
<td>2.02</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td><strong>Keaunui Well</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pink Asystasia &amp; Shrubs *</td>
<td>NA</td>
<td>0.05</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Wedelia &amp; Shrubs *</td>
<td>NA</td>
<td>5.91</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Laua'e &amp; Monstera</td>
<td>NA</td>
<td>0.09</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Bermuda Grass</td>
<td>NA</td>
<td>21.49</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Seashore Paspalum</td>
<td>NA</td>
<td>3.91</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Zoysia 'El Toro'</td>
<td>NA</td>
<td>4.63</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td><strong>Sun Terra Tot Lot</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pink Asystasia &amp; Shrubs *</td>
<td>NA</td>
<td>2.40</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Ice Plant</td>
<td>NA</td>
<td>13.94</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Wedelia &amp; Shrubs *</td>
<td>NA</td>
<td>3.26</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Bermuda Grass</td>
<td>NA</td>
<td>5.62</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
<tr>
<td>Zoysia 'El Toro'</td>
<td>NA</td>
<td>5.88</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Spray heads</td>
<td>Irrigate to Demand</td>
</tr>
</tbody>
</table>

* Asterisk denotes use of the following shrubs (drought/salt-tolerant) used but not listed:

- Hibiscus
- Croton
- Spider Lily
- Eldorado
- Eranthemum
- Dwarf Date Palm
- Natal Palm
- Naupaka
Denise,

The landscape architect found some minor typos and corrected the plantings. The numbers did not change. So please dump the other table and replace with this one.

Greg

--
Tom Nance Water Resource Engineering
680 Ala Moana Blvd., Suite 406
Honolulu, Hawaii 96813
Ph: 808-537-1141

Fax: 808-538-7757 Table 2 rev 10-8-08.xls
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

APPLICATION FOR GROUND WATER USE PERMIT FOR
PROPOSED NEW USE IN A DESIGNATED GROUND WATER
MANAGEMENT AREA

FORM GWUPA-N

For detailed instructions on filling out this application form completely, refer to the attached
instructions. Incomplete applications will not be accepted for processing.

The following must be attached before this application is accepted as complete:

1. Portion of 7.5-Minute Series USGS topographic map (scale 1:24,000) with source location labeled and include the name of the quad map.
2. Property tax map, showing source location referenced to established property boundaries.
3. Photograph(s) of the source(s) and location(s) of proposed end use(s), if applicable.

APPLICANT INFORMATION

Name/Company
Gentry Homes, Ltd.
Contact Person
Mike Brant
Mailing Address
P. O. Box 295
Honolulu, Hawaii 96809
Phone 
599-8229
Fax 
599-8240
E-mail mikeb@gentryhawaii.com

SOURCE INFORMATION

Island

Oahu

4. GROUND-WATER MANAGEMENT AREA
Puuloa Aquifer System

5. SOURCE INFORMATION
Attach additional sheets, if necessary.

Well Number (if known) | Well Name | Existing or Proposed? | TMK | Flowmeter installed?
---|---|---|---|---
Gentry Area 45 | Proposed | 9 1 69 005 | No

PROPOSED USE INFORMATION

6. TOTAL QUANTITY OF WATER REQUESTED: In the space below, enter total from Box M in Item 11 (Table 1) of this application.

86,085 gallons per day, averaged over 1 year

7. PROPOSED USE(S): Check all that apply.

- Agriculture
- Domestic
- Industrial
- Irrigation
- Military
- Municipal

8. LOCATION OF PROPOSED WATER USE(S): Show the location of the proposed use on the same USGS and TMK maps as the proposed source location. Otherwise, attach similar maps. See Item 11 (Table 1, column B) of this application.

NOTE: Signing below indicates that the signatories understand and affirm that the information provided on this application is accurate and true to the best of their knowledge. Further, the signatories understand that: 1) if necessary, further information may be required before the application is considered complete; 2) if a water use permit is granted by the Commission, this permit is subject to any existing legal uses, changes in sustainable yields and instream flow standards, reserved uses as defined by the Commission, and Hawaiian Home Lands future uses; and 3) the applicant is responsible for paying the public notice fees associated with this application.

9. APPLICANT
Gentry Homes, Ltd.
a Hawaii Corporation

Signature
Michael J. Brant, P.E.
Vice President, Engineering

Printed Name
Date

8-13-08

10. SOURCE LANDOWNER
Gentry Investments Properties

(Gentry Homes, Ltd.)

Signature
Michael J. Brant, P.E.
Vice President, Engineering

Printed Name
Date

8-13-08
### Table 1: Land Use Consistency / Efficiency of Use

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purposes / Water Use Category</strong>: Uses the indicators for water use category descriptions.</td>
<td><strong>Table for Proposed Location of Use</strong></td>
<td><strong>Check the appropriate box, and write in the date approved if applicable.</strong></td>
<td><strong>County Zoning Code</strong></td>
<td><strong>Map Required?</strong></td>
<td><strong>Check the appropriate box, and write in the date approved if applicable.</strong></td>
<td><strong>Units or Net Acreage</strong></td>
<td><strong>GPD/UNIT or GPD/ACRE</strong></td>
<td><strong>Quantity of Use (GPD)</strong></td>
<td><strong>Justification for Quantity of Water Requested</strong> (If applicable, attach additional sheet showing how the quantity was calculated.)</td>
</tr>
<tr>
<td><strong>Uses That Require Potable (drinking) Water</strong></td>
<td><strong>Total Potable Use</strong></td>
<td><strong>GPD</strong></td>
<td><strong>Uses That Do Not Require Potable Water</strong></td>
<td><strong>Total Non-Potable Use</strong></td>
<td><strong>GPD</strong></td>
<td><strong>Total Quantity of Water Requested</strong> (sum of total potable use and total non-potable use)</td>
<td><strong>GPD</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Please explain if there are any limitations (e.g., legal, contractual) on the proposed water use(s) described in Table 1. Ref. § 174C-51(5), HRS.*

*Please note: Attach additional copies, if necessary.*
<table>
<thead>
<tr>
<th>Purpose/Water Use Category</th>
<th>development</th>
<th>USE TMK</th>
<th>State Land Use District</th>
<th>CDUP Req'd Y/(date app) NA (not app'd)</th>
<th>County Zoning Code</th>
<th>SMAP Y/(date app) NA (not app'd)</th>
<th>Quantity of Use (GPD)</th>
<th>Sub-Metered (Y/N)</th>
<th>Units or Net Acreage</th>
<th>Applicant's Justification for Quantity of Requested Use for Item 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadway Irrigation - IRRLA</td>
<td>Area 41, 45/46, 48, 40, &amp; Keaunui west, 9-1-69:portion 605</td>
<td>Urban</td>
<td>NA</td>
<td>NA</td>
<td>N</td>
<td>All irrigation use is based on actual use for Ewa by Gentry, see attached Brownlie and Lee letter dated July 2, 2008 for application rate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roadway Irrigation - IRRLA</td>
<td>Kapolei Parkway @ Area 14 9-1-428 069.005, psr 4</td>
<td>Urban</td>
<td>NA</td>
<td>NA</td>
<td>N</td>
<td>For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above) = 66,865 10.62

*Corrected per phone conversation w/ Greg Fukumitsu (TNW RE) on 10/14/08*
List all crops that will be grown, including landscape and golf course irrigation uses. Copy Table 2 and attach additional sheets to complete your list, if necessary.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>CROP</td>
<td>TOTAL ACREAGE</td>
<td>NET IRRIGATED ACREAGE</td>
<td>BEGIN GROWTH PERIOD (month)</td>
<td>END GROWTH PERIOD (month)</td>
<td>IRRIGATION SYSTEM (refer to instructions)</td>
<td>IRRIGATION PRACTICE (refer to instructions)</td>
<td>COMMENTS (Continue comments below, if more space is needed.)</td>
<td></td>
</tr>
<tr>
<td>CROP</td>
<td>TOTAL ACREAGE</td>
<td>NET IRRIGATED ACREAGE</td>
<td>BEGIN GROWTH PERIOD (month)</td>
<td>END GROWTH PERIOD (month)</td>
<td>IRRIGATION SYSTEM (refer to instructions)</td>
<td>IRRIGATION PRACTICE (refer to instructions)</td>
<td>COMMENTS (Continue comments below, if more space is needed.)</td>
<td></td>
</tr>
<tr>
<td>CROP</td>
<td>TOTAL ACREAGE</td>
<td>NET IRRIGATED ACREAGE</td>
<td>BEGIN GROWTH PERIOD (month)</td>
<td>END GROWTH PERIOD (month)</td>
<td>IRRIGATION SYSTEM (refer to instructions)</td>
<td>IRRIGATION PRACTICE (refer to instructions)</td>
<td>COMMENTS (Continue comments below, if more space is needed.)</td>
<td></td>
</tr>
<tr>
<td>CROP</td>
<td>TOTAL ACREAGE</td>
<td>NET IRRIGATED ACREAGE</td>
<td>BEGIN GROWTH PERIOD (month)</td>
<td>END GROWTH PERIOD (month)</td>
<td>IRRIGATION SYSTEM (refer to instructions)</td>
<td>IRRIGATION PRACTICE (refer to instructions)</td>
<td>COMMENTS (Continue comments below, if more space is needed.)</td>
<td></td>
</tr>
<tr>
<td>CROP</td>
<td>TOTAL ACREAGE</td>
<td>NET IRRIGATED ACREAGE</td>
<td>BEGIN GROWTH PERIOD (month)</td>
<td>END GROWTH PERIOD (month)</td>
<td>IRRIGATION SYSTEM (refer to instructions)</td>
<td>IRRIGATION PRACTICE (refer to instructions)</td>
<td>COMMENTS (Continue comments below, if more space is needed.)</td>
<td></td>
</tr>
</tbody>
</table>

Comments (continued from Column I). Please clearly indicate the crop (i.e., the row in table) these comments relate to.
### OTHER PERTINENT INFORMATION

#### 13. TABLE 3: ALTERNATIVES ANALYSIS

<table>
<thead>
<tr>
<th>A. Analysis of potable alternatives</th>
<th>B. Analysis of non-potable alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal sources</td>
<td>BWS requires the use of non-potable water for irrigation.</td>
</tr>
<tr>
<td>Wastewater reuse</td>
<td>Treated effluent from the Honolulu WWTP is not available in this area.</td>
</tr>
<tr>
<td>Ditch system</td>
<td>No ditch system available for this area.</td>
</tr>
<tr>
<td>Desalinization</td>
<td>Not Financially Practical</td>
</tr>
<tr>
<td>Surface water</td>
<td>None is Available</td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
</tr>
</tbody>
</table>

#### 14. PUBLIC INTEREST

§174C-2(C), HRS states: 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 recreation 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.

Explain below how the proposed new use(s) in your application are consistent with the public interest.

Use of onsite brackish groundwater preserves potable water which would otherwise be used for irrigation.

#### 15. INTERFERENCE WITH THE RIGHTS OF THE DEPARTMENT OF HAWAIIAN HOME LANDS

Explain below how the proposed new use(s) of water will not interfere with the rights of the Department of Hawaiian Home Lands, as provided in section 221 of the Hawaiian Homes Commission Act.

There are no known conflicts or interference with DHHL rights.

#### 16. INTERFERENCE WITH ANY EXISTING LEGAL USES

Explain below how the proposed new use(s) of water will not interfere with any other existing legal use(s) of water.

There are no known conflicts with any existing legal uses.
### Details

<table>
<thead>
<tr>
<th>TMK:</th>
<th>9-1-069:005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical TMK Sequence:</td>
<td>95</td>
</tr>
<tr>
<td>Area (sq ft):</td>
<td>7927920</td>
</tr>
<tr>
<td>Area (acres):</td>
<td>182</td>
</tr>
<tr>
<td>Lot Number:</td>
<td>80000</td>
</tr>
<tr>
<td>Ohana:</td>
<td>(None)</td>
</tr>
</tbody>
</table>

### LAND CONTROL CODES

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOOD ZONE</td>
<td>FIRM ZONE D</td>
</tr>
<tr>
<td>HEIGHT LIMIT</td>
<td>25 FEET</td>
</tr>
<tr>
<td>HEIGHT LIMIT</td>
<td>30 FEET</td>
</tr>
<tr>
<td>HISTORIC SITE REGISTER NO</td>
<td></td>
</tr>
<tr>
<td>LOT RESTRICTIONS</td>
<td>NONE</td>
</tr>
<tr>
<td>SMA/SHORELINE</td>
<td>NOT IN SMA</td>
</tr>
<tr>
<td>SPECIAL DISTRICT</td>
<td>NOT IN SPECIAL DISTRICT</td>
</tr>
<tr>
<td>STATE LAND USE</td>
<td>URBAN DISTRICT</td>
</tr>
<tr>
<td>STREET SETBACK</td>
<td>NONE</td>
</tr>
<tr>
<td>ZONING (LUO)</td>
<td>A-1 LOW DENSITY APARTMENT</td>
</tr>
<tr>
<td>ZONING (LUO)</td>
<td>P-2 GENERAL PRESERVATION</td>
</tr>
<tr>
<td>ZONING (LUO)</td>
<td>R-5 RESIDENTIAL DISTRICT</td>
</tr>
</tbody>
</table>

### FACILITIES

<table>
<thead>
<tr>
<th>Facility Code</th>
<th>Year Built</th>
<th>No. of Floors</th>
<th>Total Floor Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TMK SEPARATIONS

<table>
<thead>
<tr>
<th>Activity Code</th>
<th>Census Tract</th>
<th>Census Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Address List:

July 2, 2008

Mr. Greg Fukumitsu  
Tom Nance  
Water Resources Engineering  
680 Ala Moana Boulevard, Suite 406  
Honolulu, Hawaii 96813

Subject: EWA WUP PERMIT

Dear Greg:

We have been responsible for virtually all of the landscape and irrigation system design at Ewa by Gentry since 1990. Based on our 18 years of experience with this development and dealing with the requirement for low maintenance, drought and brackish water tolerant planting we have found through our water conservation efforts that the average daily irrigation requirement is approximate 1.0 gallons per square foot of planting area per week. We have established this irrigation water demand through both on site field experimentation and the following calculation:

**Irrigation Application Rate Calculation**

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ewa 15-year average annual pan evaporation rate</td>
<td>86.56 inches per year</td>
</tr>
<tr>
<td>Less Ewa Gentry average annual rainfall (18.75-inches), derated 25%</td>
<td>(14.06) inches per year</td>
</tr>
<tr>
<td>Evapotranspiration Rate</td>
<td>72.50 inches per year</td>
</tr>
</tbody>
</table>

72.5 inches per year = 0.87 gals/s.f/week

15% irrigation inefficiency factor, high percentage of small irregular planting areas = 0.13 gals/s.f/week

Total weekly irrigation demand = 1.0 gals/s.f/week

We have found that the rainfall contribution to irrigation must be derated at least 25% based on field experience and the irrigation inefficiency factor is approximately 15% due in large part to the high percentage of small irregular planting areas within the housing parcels.

The irrigation well service areas are outlined on the Irrigation Master Plan prepared by our office. The bulk service area irrigation demand are as follows:
<table>
<thead>
<tr>
<th>Area Well</th>
<th>Service Area</th>
<th>Gallons per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area 35 Well</td>
<td>1,785,756 s.f.</td>
<td>255,108</td>
</tr>
<tr>
<td>Keaunui Well</td>
<td>1,572,305 s.f.</td>
<td>224,615</td>
</tr>
<tr>
<td>Sun Terra Tot Well</td>
<td>1,363,373 s.f.</td>
<td>194,768</td>
</tr>
<tr>
<td>Area 13 Well</td>
<td>258,825 s.f.</td>
<td>36,975</td>
</tr>
<tr>
<td>Area 45 Well</td>
<td>462,595 s.f.</td>
<td>66,085</td>
</tr>
</tbody>
</table>

If you have questions regarding this information, please contact me.

Sincerely,

BROWNLIE & LEE

[Signature]

Richard C. Brownlie, ASLA
Principal

cc: Darian Chun
    Gentry Homes, Ltd.
MEMO and ROUTE SLIP (ver. 5/11/10)  

WCR 1 Check for Well No. 1901-08 (GW regulation route)  

1. From Roy (initial)  
   Initial entry into well index  
   Ingrid's spreadsheet updated needed/done  

   Pump Tests Check  
   Step-Drawdown Test: followed WCPI Stds analysis attached  
   Constant Rate Test: followed WCPI Stds analysis attached  
   Potential Well Interference:  
   Potential Stream Impacts: If yes, stream name(s):  
   Additional Testing or Data Required:  
   Pump Test Comments Attached:  
   Proposed Pump Capacity is OK.:  

   Yes No  

2. Well Log Check - Geology Code for Well Index:  
   Fm. Name: Jeremy (initial)  

3. Construction Check - Charley/Ryan (initial)  
   data complete  
   followed Special Cond & elevations  
   location unchanged from WCPIPA?  
   If yes, is SMA, CD, TMK changed?  
   Parcel?  

   ATTACHMENTS FOR PUMP INSTALLATION PERMIT (2x):  
   1 COVER LETTER  
   2 COUNTY COMMENTS (DWS/SMA)  
   3 DOH COMMENTS  
   4 DLNR COMMENTS (LD/OCC/DPD)  
   5 WCR 1 Accept  
   6 WELL CONST. COMPLETION CERTIFICATE  
   7 USGS MAP UPDATED  
   8 PARCEL CHECK  
   9 WELL DATABASE INPUT CHECK  
   10 PUMP TEST WORKSHEET  
   11 WELL As-Built CHECK PRINT  

4. Roy (initial) check (Entered WCR 1/WCCC accept date into database)  
5. Susan H. (initial) finalize  
6. Bill (initial) signature  
7. Charley/Ryan File & Enter PIP issue date if attached/required
Mr. Mike Brant  
Gentry Homes, Ltd.  
P.O. Box 295  
Honolulu, HI 96809

Dear Mr. Brant:

Certificate of Well Construction Completion for Well No. 1901-08 (TMK 9-1-149:028)

We are pleased to inform you that the Well Construction work permitted for the Gentry 45 Well (Well No. 1901-08) is complete and acceptable.

To protect Hawaii’s natural ground water resources for the benefit of all, the following requirements apply to the use of your well:

1. Before this well can be pumped on a regular basis, a certificate of pump installation completion must be obtained.
2. If the well is not in use it must be properly capped.
3. If the well is to be abandoned then the landowner must cause a licensed contractor to apply for a well abandonment permit in accordance with §13-168-12(f), HAR, prior to any well sealing or plugging work.
4. In the event that the well operator and/or landowner changes, the Commission shall be notified prior to the change.
5. In the event the benchmark in the concrete base of the well is altered in any way, an updated version of the Well Elevation page of the Well Completion Report Part I shall be submitted to the Commission. If a licensed surveyor had estimated the original benchmark elevation then a licensed surveyor must establish the new benchmark elevation. The Well Elevation portion of the Well Completion Report Part I can be obtained by contacting Commission staff or at our website at www.hawaii.gov/dlnr/cwrm/resources_permits.htm.

Because ground water in Hawaii is a public trust, and adverse effects at one well may affect other water resources, any violation of the above conditions or any other provision of the Hawaii Administrative Rules may be subject to fines of up to $5,000 per day. The Commission needs your help and asks that you do your part in utilizing this shared resource. We prefer to work with you in meeting the goal of protecting our ground water resources together.

If you have any questions, please contact Ryan Imata of the Commission staff at 587-0255.

Sincerely,

WILLIAM M. TAM  
Deputy Director

RI:ss  
c: Beylik Drilling and Pump Service
Ms. Toni Gonsalves  
Beylik Drilling and Pump Service  
91-259A Olai Street  
Kapolei, HI 96707

Dear Ms. Gonsalves:

Well Completion Report Part I for Well No. 1901-08

We received your Well Completion Report Part I for the Gentry 45 Well (Well No. 1901-08) on November 3, 2011 and acknowledge that it is complete.

This completes your obligation under the well construction permit. A certificate of well construction completion will be issued to the well operator/landowner and you will receive a copy. This certificate transfers responsibility of specific aspects of well usage and maintenance from you to the well operator/landowner.

If you have any questions, please contact Ryan Imata of the Commission staff at 587-0255.

Sincerely,

WILLIAM M. TAM
Deputy Director

RI:ss

c: Gentry Homes Ltd.
Gentry Investment Properties


<table>
<thead>
<tr>
<th>Taxkey</th>
<th>Subdiv / Condo Tnr</th>
<th>Address / Owner / Lessee</th>
<th>Bds</th>
<th>Bths</th>
<th>Land area</th>
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### Well Check Program

**4/1/04 - Revised for update to Well Standards (February 2004)**

#### Data Input

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#### Results

**Well Depth**
- Theoretical Thickness of Aquifer: 86.1
- 1/4 Aquifer Thickness: 21.525
- **Depth of Well below Sea Level**: -8.79 **okay** Section 2.2

**Well Casing**
- Minimum Wall Thickness
  - Material: pvc plastic
  - Minimum Thickness per standards: no requirement
  - **Wall Thickness Provided**: 0.75 **no standard** Section 2.4(b)
- Minimum Length of Solid Casing
  - 90% of ground to top of aquifer: 19.593
  - **Length of solid casing Provided**: 22 **okay** Section 2.4(c)
- **Casing Material**: Schedule 80 **in compliance** Section 2.4(d)
  (for pvc only - check for 200' limit) **okay** Section 2.4(d)

**Annular Space**
- **Depth of Grouting**: 15.239
- **Calculated Depth of Grouting**: 15.239
- **Depth of Grouting provided**: 20 **okay** Section 2.6(c)
- Minimum Annular Space required: 2
- **Thickness of Annular Space**: 4.625 **okay** Section 2.6(d)
PUBLIC RECORD DATA

▲ TMK # 1-9-1-69-34  FORT WEAVER RD

- **Owner:** GENTRY INVESTMENT PROPERTIES
- **Tax Payer:** GENTRY INVESTMENT PROPERTIES
- **Tax Bill:** PO BOX 295, HONOLULU, HI 96809 USA
- **Tenure:** Fee Simple
- **Annual Tax (2010):** $19,109.00

**Assessed Value (2010) Exemption**

<table>
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<th>Dwellings:</th>
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<tr>
<td>Total:</td>
<td>$5,337,800</td>
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**Zoning:** PITT Code: 1-RESIDENTIAL (Hawaii,Maui,Oahu)

**Land Use:** 0

**Bedrooms/Baths:** 0/0

**Subdivision:** 0

**Total $0 $0 sq ft**

**Lots: Land Use:** 0

**Census Tract:**

**BUILDING PERMITS FROM REAL PROPERTY TAX**

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<th>Date</th>
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<th>Amount</th>
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EWA BY GENTRY - AREA 45/46
WELL LOCATION
AT HONOLULU, EWA, OAHU, HAWAII
Aloha Ryan,

Please see attached revised WCR Part I (page 4 of 5). Good catch.

Please let me know if this is sufficient or if you would like a complete WCR Part I hardcopy mailed to you. Thank you.

v/f,
Fred G. Camero, Jr.

From: Wayne Teruya [mailto:wteruya@pareninc.com]
Sent: Thursday, November 03, 2011 6:58 AM
To: Fred Camero
Subject: Re: Park Engineering

Fred:
Attached is the corrected plate. Sorry for the delay.

Wayne M. Teruya
Licensed Land Surveyor
ParEn, Inc. dba Park Engineering
Pacific Park Plaza
711 Kapiolani Blvd, Suite 1500
Honolulu, Hawaii 96813
Tel: (808) 593-1676 (ext.121)
Cell: (808)-291-9086
Fax: (808) 593-1607

----- Original Message -----­
From: Fred Camero
To: ‘Wayne Teruya’
Sent: Wednesday, November 02, 2011 8:46 AM
Subject: RE: Park Engineering
Hi Wayne,

Just checking if I have your email address correct and that you received the below request. Please confirm. Thank you.

v/f,
Fred G. Camero, Jr.
Branch Manager
Beylik Drilling & Pump Service, Inc.
Ph 808 478-7114

From: Fred Camero
Aloha Wayne,

Please confirm the correct latitude for the well location (the numbers for the seconds are switched). Thank you.

v/r,

Fred G. Camero, Jr. With Location-revised plat.pdf
Ryan,

Gentry confirmed the current TMK is **9-1-149: 028**. The TMK changes because of ongoing subdivision of parcel taking place, this should be the final TMK.

Greg

Tom Nance Water Resource Engineering
Gentry Pacific Design Center
560 N. Nimitz Hwy. - Suite 213
Honolulu, Hawaii  96817
Ph: 537-1141  Fax: 538-7757
TO
COMMISSION ON WATER RESOURCE MGMT

PO BOX 621

HONOLULU, HI 96809

WE ARE SENDING YOU □ Attached □ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ ____________________________

<table>
<thead>
<tr>
<th>COPIES</th>
<th>DATE</th>
<th>NO.</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>WCR PART I</td>
</tr>
</tbody>
</table>

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _______ copies for approval

☐ For your use ☐ Approved as noted ☐ Submit _______ copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return _______ corrected prints

☐ For review and comment ☐ ____________________________

☐ FOR BIDS DUE ____________________________ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

__________________________________________

COPY TO C:FILE / 9429F

SIGNED: __________________________

If enclosures are not as noted, kindly notify us at once. FOR: FRED CAMERON
1. State Well No.: 1901-08  Well Name: Gentry Area 45  Island: Oahu
2. Address: Keaunui Drive, Ewa Beach, HI 96706  Tax Map Key: 9-1-069:034
4. Drilling method used during construction: Yes Rotary  No Percussion  No Other
5. Date Well Construction (drilled, cased, grouted) completed: 1-27-11
6. Was the subject well cored? Yes
7. Step-Drawdown Test completed? Yes
8. Constant Rate Aquifer Test completed? Yes
9. Reference point elevation: 23.87
10. Depth to water (feet): 22.04
11. Water Level ft. above mean sea level (see note below): 1.83
12. Date/time of measurement: 1/18/11 @ 10:30am
13. Chloride: 900 ppm, Temperature: 78.9°F
14. After casing installation (this information should be before any pump tests are performed with casing installed)
15. If this reference point is not the benchmark, the difference between the benchmark and this point is:
16. Remarks: Threaded plug with set screws
17. As-built section filled in completely
18. Photograph of well and concrete pad showing benchmark on concrete pad attached
19. GPS coordinates provided in degrees, minutes, seconds
20. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)
21. Remarks:
23. C-57 Lic. No. AC-21896
24. Date 6/02/2011
12. AS-BUILT WELL SECTION (Please attach as-built if different from diagram provided below)

**Solid Casing Material:**
- **Carbon Steel:** compliant with (check one or more): □ ANSI/AWWA C200 □ API Spec. 5L □ ASTM A63 □ ASTM A139
  And compliant with (check one or more): □ ASTM A242 or A606 □ Type E □ Type S □ Grade B □ Other
- **Stainless Steel:** (check one):
  □ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
- **ABS Plastic** conforming to ASTM F480 and ASTM D1527: (check one) □ Schedule 40 □ Schedule 80
- **PVC Plastic** conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): □ Schedule 40 □ Schedule 80 □ Schedule 120
- **Thermoset Plastic:** (check one)
  □ Filament Wound Resin Pipe conforming to ASTM D2996
  □ Centrifugally Cast Resin Pipe conforming to ASTM D2997
  □ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
  □ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  □ PTFE Fluorocarbon Tubing conforming to ASTM D3296
  □ FEP Fluorocarbon Tubing conforming to ASTM D3296

**Open Casing Material:**
- **Carbon Steel:** compliant with (check one or more): □ ANSI/AWWA C200 □ API Spec. 5L □ ASTM A63 □ ASTM A139
  And compliant with (check one or more): □ ASTM A242 or A606 □ Type E □ Type S □ Grade B □ Other
- **Stainless Steel:** (check one):
  □ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
- **ABS Plastic** conforming to ASTM F480 and ASTM D1527: (check one) □ Schedule 40 □ Schedule 80
- **PVC Plastic** conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): □ Schedule 40 □ Schedule 80 □ Schedule 120
- **Thermoset Plastic:** (check one)
  □ Filament Wound Resin Pipe conforming to ASTM D2996
  □ Centrifugally Cast Resin Pipe conforming to ASTM D2997
  □ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
  □ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  □ PTFE Fluorocarbon Tubing conforming to ASTM D3296
  □ FEP Fluorocarbon Tubing conforming to ASTM D3296

Please refer to the HAWAII WELL CONSTRUCTION AND PUMP INSTALLATION STANDARDS to ensure that your as-built is in compliance with applicable standards.
**DRILLER'S LOG**

WELL NUMBER: 1901-08  
*In addition to the driller's log, if a geologic log was prepared, please submit with this form*

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Remarks:
NAD83:
Latitude: 21 degrees 19 min 31 sec
Longitude: -158 degrees 01 min 19 sec

EWA BY GENTRY - AREA 45/46
WELL LOCATION
AT HONOLULU, EWA, OAHU, HAWAII
Well Elevation

I certify that the elevation shown above:

1) Was done in accordance with acceptable surveying practices
2) Is accurate to the nearest 0.01 ft.
3) Is referenced to mean sea level

Wayne M. Taryon
Surveyor
License No. 6297
Date 2/2/11
### STEP-DRAWDOWN PUMP TEST DATA

**Pumped Well No.** 1901-08  
**Observation Well No.**  

**Pumped Well Name** Gentry Area 45  
**Reference pt. for depth to water** 27.21 ft. msl  
**Static Water Level @ start of test** 1.91 ft. msl  

**START TEST**  
**Date** 1/24/2011  
**Time of day:** 12:20PM  

**Flow Meter Reading Start:** 3,070,470 gal  

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<th>Actual Elapsed time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown S (unadj) To nearest 0.1 ft</th>
<th>Pumping rate Q (gpm)</th>
<th>Specific Conductance (μS/cm)</th>
<th>Cl* (mg/l)</th>
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**End Time:**  
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**Final Meter Reading:** 3084970

**END TEST**

Date: 1/24/2011
Time of Day: 2:20 PM

**ADDITIONAL REMARKS:**

Person in charge of pump test (print): MURIS MITCHELL
Signature: [Signature]

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
## CONSTANT RATE PUMP TEST DATA

**Pumped Well No.** 1901-08  
**Pumped Well Name** Gentry Area 45  
**Target Q** 150 gpm  
**Reference pt. for depth to water** 27.21 ft. msl  
**Static Water Level @ start of test** 1.86 ft. msl  

**START TEST**  
**Date** 1/24/2011  
**Time of day:** 2:20PM  

**Flow Meter Reading Start:** 3,084.970 gal

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Observation Well **Not Required**  
Remarks **Not Required**
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**Date: 1-25-11**

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**Data in this table is for:**
- Pumped well ____________
- Observation well ____________
- Remarks ____________

**Meter end:** 3302881.5
## Continuous Test Recovery Follow Up

**Date:** 1-25-11

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**Final Meter Reading:** 3302881.5

**END TEST**

**Date:** 1/25/2011  **Time of Day:** 2:55 PM

**ADDITIONAL REMARKS:**

Person in charge of pump test (print): **MURIS MITCHELL**

Signature: **[Signature]**

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
Note: This permit shall be prominently displayed at the site until the work is completed.

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the pump installation for Gentry 45 Well (Well No. 1901-08) at TMK 9-1-069:005, Oahu, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work covered by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules (HAR).

2. No withdrawal of water shall be made other than for testing until a Certificate of Pump Installation Completion has been issued by the Commission.

3. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

4. The pump installation permit shall be for installation of a 100 gpm rated capacity, or less, pump in the well. This permanent capacity may be reduced in the event that the pump test data does not support the capacity.

5. A water-level measurement access shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels.

6. The permittee shall install an approved meter or other appropriate means for measuring and reporting withdrawals and appropriate devices or means for measuring chlorides and temperature at the well head.

7. Well Completion Report Part II shall be submitted to the Chairperson within sixty (60) days after completion of work (please contact staff or visit www.hawaii.gov/dlnr/cwrm/resources_permits.htm for current form).

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

9. The pump installation permit application and, if relevant, any related staff submittal approved by the Commission are incorporated into this permit by reference.

10. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

11. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.

12. The work proposed in the pump installation permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.

13. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

14. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: January 7, 2011
Expiration Date: January 7, 2013

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Installer's Signature: 
Printed Name: Toni Gonsalves
Firm or Title: Beylik Drilling and Pump Service, Inc.

Please sign both copies of this permit, return one copy to the Commission office, and retain the other for your records.

Attachments
WELL CONSTRUCTION PERMIT

Gentry 45 Well, Well No. 1901-08

Note: This permit shall be prominently displayed at the construction site until the work is completed.

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of Gentry 45 Well (Well No. 1901-08) at TMK 9-1-069:005, Oahu, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-12, Hawaii Administrative Rules (HAR).

2. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

3. The well construction permit shall be for construction and testing of the well only. The permittee shall coordinate with the Chairperson and conduct a pumping test in accordance with the HWCPIS (the latest pump test worksheet can be obtained by contacting Commission staff or at www.hawaii.gov/dlnr/cwrmlresources_permits.htm). The permittee shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson. No withdrawal of water shall be made for purposes other than testing without a Certificate of Pump Installation Completion. The permitted pump capacity described on the pump installation permit may be reduced in the event that the pump test does not support the capacity.

4. In all ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson. If it can be shown that the well does not tap basal ground water then this condition may be waived after consultation with and acceptance by Commission staff. However, in no instance can the well be drilled deeper than one-half (1/2) of the theoretical thickness without Commission approval.

5. The permittee shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

6. In the event that historically significant remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee shall stop work and immediately contact the Department of Land and Natural Resources' State Historic Preservation Division. Work may recommence only after written concurrence by the State Historic Preservation Division.

7. The proposed well construction shall not adversely affect existing or future legal uses of the area, including any surface water or established instream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.

8. The Well Completion Report Part I shall be submitted to the Chairperson within sixty (60) days after completion of work (please contact staff or visit www.hawaii.gov/dlnr/cwrmlresources_permits.htm for current form).

9. The permittee shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

10. The well construction permit application and, if relevant, any related staff submittal approved by the Commission are incorporated into this permit by reference.

11. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

12. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.

13. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.

14. If the well is not to be used it must be properly capped. If the well is to be abandoned during the course of the project then the permittee must apply for a well abandonment permit in accordance with §13-168-12(f), HAR, prior to any well sealing or plugging work.

15. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

16. This permit shall apply to the location shown on the application only. If the well is to be relocated, the permittee shall apply for a new well construction/pump installation permit in accordance with §13-168-12(f), HAR.

17. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: January 7, 2011
Expiration Date: January 11, 2013

WILLIAM J. AILA, JR., Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a necessary and underlying condition of my ability to proceed and understand that I shall not commence work until I have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Driller's Signature: [Signature] C-57 License #: AC-21896 Date: 06/11/2011
Printed Name: Toni Gonsalves Firm or Title: Beylik Drilling and Pump Service, Inc.

Please sign both copies of this permit, return one copy to the Commission office, and retain the other for your records.

Attachment
**WELL LOCATION INFORMATION**

<table>
<thead>
<tr>
<th>1. STATE WELL NO. (if already assigned)</th>
<th>2. WELL NAME</th>
<th>3. ISLAND</th>
<th>4. TMK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1101-08</td>
<td>Gentry 45 Well</td>
<td>Oahu</td>
<td>69</td>
</tr>
</tbody>
</table>

The following must be attached before this application is accepted as complete:

- Portion of 7.5-Minute Series USGS topographic map (scale 1:24,000) with well location labeled and include the name of the quad map
- Property tax map, showing well location referenced to established property boundaries
- Photograph of the proposed well site
- A schematic diagram showing the well site, access road and proposed well infrastructure.
- For dug wells, attach a grading plan with cross section profiles showing existing and finished grades

**WELL OPERATOR’S NAME/COMPANY**

Gentry Homes, Ltd.

Mike Brant

**WELL OPERATOR’S MAILING ADDRESS**

P.O. Box 295

Hawaii, Hawaii 96809

**Well Operator’s Phone**

599-8229

**Well Operator’s Fax**

599-8240

**Well Operator’s E-mail**

mikeb@gentryhawaii.com

**LANDOWNER’S NAME/COMPANY**

Gentry Investment Properties

**LANDOWNER’S MAILING ADDRESS**

P.O. Box 295

Hawaii, Hawaii 96809

**LANDOWNER’S PHONE**

599-8229

**LANDOWNER’S FAX**

599-8240

**LANDOWNER’S E-MAIL**

mikeb@gentryhawaii.com

**PROPOSED WELL CONSTRUCTION**

<table>
<thead>
<tr>
<th>Proposed Work</th>
<th>Proposed Pump Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modify Existing Well</td>
<td>Install New Pump</td>
</tr>
<tr>
<td>Abandon/Seal Well</td>
<td>Replace Pump</td>
</tr>
<tr>
<td>Drilled</td>
<td>11. Proposed Pumping Rate, gpm</td>
</tr>
<tr>
<td>Dug</td>
<td>(gallons per minute)</td>
</tr>
<tr>
<td>Shaft</td>
<td>Modify CHP</td>
</tr>
<tr>
<td>Tunnel</td>
<td>100 GPM</td>
</tr>
<tr>
<td>8. Construction Type</td>
<td>12. Proposed Amount of Withdrawal, gpd (gallons per day)</td>
</tr>
<tr>
<td>Drilled</td>
<td></td>
</tr>
<tr>
<td>Dug</td>
<td>66,085</td>
</tr>
<tr>
<td>Shaft</td>
<td></td>
</tr>
<tr>
<td>Tunnel</td>
<td></td>
</tr>
</tbody>
</table>

**PROPOSED USE**

- 15. Municipal (water systems serving greater than 25 individuals or 15 service connections)
- 16. Domestic
- 17. Industrial (describe)
- 18. Irrigation (describe crop and no. of acres) Road: and Common Area Irrigation, 10.62 Acres
- 19. Military
- 20. Other (describe)

**OTHER LEGAL REQUIREMENTS**

- If required, items 21 and 22 must be obtained before the Commission can legally issue a permit:

  21. Conservation District Use Permit (CDUP)

    - Required, CDUP #
    - date approved
    - Not Required
    - (attach documentation from OCCL)
    - I do not have checked with OCCL about whether or not a CDUP is required. I understand that checking with OCCL prior to making this application will expedite my review.
    - I further understand that issues raised by this agency may delay or result in denial of the permit issuance, or revocation of the permit after it is issued.

  22. Special Management Area Permit (SMAP)

    - Required, SMAP #
    - date approved
    - Not Required
    - (attach documentation from applicable County agency)
    - I have not checked with the county about whether or not an SMAP Permit is required. I understand that checking with the County prior to making this application may expedite my review.
    - I further understand that issues raised by this agency may delay or result in denial of the permit issuance, or revocation of the permit after it is issued.

  23. State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources

    - I have consulted with the HDPR regarding potential impacts of well construction activities on historic sites. I have attached applicable documentation from the HDPR.
    - I have not consulted with the HDPR regarding potential impacts of well construction activities on historic sites. I understand that checking with the HDPR prior to making this application may expedite my review.
    - I further understand that issues raised by this agency may delay or result in denial of the permit issuance, or revocation of the permit after it is issued.

**LEGAL REQUIREMENTS:**

- Additional remarks, explanations, etc. (attach additional sheet if more space is needed)

Note: Signing below indicates that the signatory understands and agrees that the information provided is accurate and true to the best of their knowledge.

- For Official Use Only:

  - RECEIVED
  - AUG 18
  - 11:45 AM
  - 300

**PUMP INSTALLATION**

- Must be filled out if application is for Well Construction

- Signature

- Date

**PUMP INSTALLER**

- Must be filled out if application is for Pump Installation

- Signature

- Date

WCPI Application Form 02/28/2007
COMMISSION ON WATER RESOURCE MANAGEMENT
ROUTE SLIP FOR PERMIT ISSUANCE 3/31/11

FROM: RYAN
DATE: 3/31/11
TO:
CHONG, R. KIMURA, J.
DANBARA, S. OYHE, L.
FUJII, N. TAM, B.
HOARD, R. UYENO, D.
HOAGBIN, S. YODA, K.
ICE, C. YOSHINAGA, M.
IMATA, R.

SUSPENSE DATE: ______________________

TO: INIT. TO: INIT. FOR: PLEASE:
CHONG, R. KIMURA, J. Approval
DANBARA, S. OYHE, L. 3 Signature
FUJII, N. TAM, B. 1 Information
HOARD, R. UYENO, D. 1 Review & Comment
HOAGBIN, S. YODA, K. 2 Take Action
ICE, C. YOSHINAGA, M. 2 Type Draft
IMATA, R. 3 Type Final

WELL NUMBER 1901-08 WELL NAME Gentry 45 Well

application type BOTH
1 WCP COVER LETTER
2 WCP
3 WELL CHECK PRINTOUT
proposed well section issues?

4 PIP COVER LETTER
5 PIP

COMMENTS: date rec'd issues? if checked, send to applicant

6 SDWB
7 WWB
8 CWB
9 HEER
10 LD
11 HP
12 LUC
13 OCCL
14 SMA
15 BWS (Oahu)

NOTES:

DRILLER Beylik
Beylik Drilling and Pump Service, Inc.
21896
91-259A Olai Street
Kapolei HI 96707

phone 682-5554
fax 682-5866
cell 478-7112

TMK 9-1-069:005
PUMP CAPACITY 100
WELL OWNER Gentry Homes, Ltd.
LAND OWNER Gentry Investment Properties
COMMENT DEADLINE 1/0/00
90-DAY DEADLINE 1/0/00
April 4, 2011

Ms. Toni Gonsalves
Beylik Drilling and Pump Service, Inc.
91-259A Olai Street
Kapolei, HI 96707

Dear Ms. Gonsalves:

Pump Installation Permit

Gentry 45 Well (Well No. 1901-08)

Enclosed are two (2) originals of your approved Pump Installation Permit for the captioned well(s) that authorize permanent pump installation work for your well(s). As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 14:

Special Conditions

1. If the elevation benchmark needs to be altered, the permittee, well operator, and/or well owner shall ensure that the benchmark is transferred (or the well resurveyed) and documentation of the new benchmark shall be submitted to the Commission within sixty (60) days after the pump is installed.

2. Attached for your information are copies of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities. Also, please contact the Noise Radiation and Indoor Air Quality Branch at 586-4700 to check compliance with construction noise permit requirements for this project.

The permittee is responsible for all conditions of the permit. This includes ensuring the submission of a completed Well Completion Report Part II form within sixty (60) days after the pump installation work is completed. Be advised that you may be subject to fines of up to $5,000 per day for any violations of your permit conditions starting from the permit approval date.

Please sign both permit originals and return one copy to the Commission office for our files.

IMPORTANT - Pump installation shall not commence until a fully signed permit is returned to the Commission.

If you have any questions, please call Ryan Imata of the Commission staff at 587-0255.

Sincerely,

WILLIAM J. AILA, JR.
Chairperson

Enclosure

C: Gentry Homes, Ltd.
PUMP INSTALLATION PERMIT
Gentry 45 Well, Well No. 1901-08

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the pump installation for Gentry 45 Well (Well No. 1901-08) at TMK 9-1-069:005, Oahu, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work covered by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules (HAR).

2. No withdrawal of water shall be made other than for testing until a Certificate of Pump Installation Completion has been issued by the Commission.

3. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

4. The pump installation permit shall be for installation of a 100 gpm rated capacity, or less, pump in the well. This permanent capacity may be reduced in the event that the pump test data does not support the capacity.

5. A water-level measurement access shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels.

6. The permittee shall install an approved meter or other appropriate means for measuring and reporting withdrawals and appropriate devices or means for measuring chlorides and temperature at the well head.

7. Well Completion Report Part II shall be submitted to the Chairperson within sixty (60) days after completion of work (please contact staff or visit www.hawaii.gov/dlnr/cwrm/resources_permits.htm for current form).

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

9. The pump installation permit application and, if relevant, any related staff submittal approved by the Commission are incorporated into this permit by reference.

10. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

11. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.

12. The work proposed in the pump installation permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.

13. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

14. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: January 7, 2011  Expiration Date: January 7, 2013

WILLIAM J. AILA, JR., Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Installer's Signature: _______________________________ C-57, C-57a, or A License #: AC-21896  Date: ___________________________

Printed Name: Toni Gonsalves  Firm or Title: Beylik Drilling and Pump Service, Inc.

Please sign both copies of this permit, return one copy to the Commission office, and retain the other for your records.

Attachments
Ms. Toni Gonsalves
Beylik Drilling and Pump Service, Inc.
91-259A Olai Street
Kapolei, HI 96707

Dear Ms. Gonsalves:

Well Construction Permit
Gentry 45 Well (Well No. 1901-08)

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s) that authorize well construction activities but excludes installation work for a permanent pump. As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 17:

**Special Conditions**

1. Attached for your information are copies of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities. Also, please contact the Noise Radiation and Indoor Air Quality Branch at 586-4700 to check compliance with construction noise permit requirements for this project.

Please refer to the Permit Processes Worksheet (transmitted with your acknowledgement letter) for further information regarding the process of drilling a well and installing a pump.

No withdrawal of water shall be made other than for testing purposes until a certificate of pump installation completion has been issued by the Commission.

Please sign both permit originals and return one copy to the Commission office for our files. For copies of the aquifer pump test worksheet, please call staff or visit www.state.hi.us/dlnr/cwrmlforms.htm.

**IMPORTANT** - Drilling work shall not commence until a fully signed permit is returned to the Commission. The permit shall be prominently displayed or made available at the construction site during construction. Be advised that you may be subject to fines of up to $5,000 per day for any violations of your permit conditions starting from the permit approval date.

If you have any questions, please call Ryan Imata of the Commission staff at 587-0255 or toll-free at 974-4000 (Hawaii), 274-3141 (Kauai), 984-2400 (Maui), or 1-800-468-4644 (Lanai & Molokai), extension 70255.

Sincerely,

[Signature]

WILLIAM J. AILA, JR.
Chairperson

Enclosures

C: Gentry Homes, Ltd.
WELL CONSTRUCTION PERMIT

Gentry 45 Well, Well No. 1901-08

Note: This permit shall be prominently displayed at the construction site until the work is completed.

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of Gentry 45 Well (Well No. 1901-08) at TMK 9-1-069:005, Oahu, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules (HAR).

2. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

3. The well construction permit shall be for construction and testing of the well only. The permittee shall coordinate with the Chairperson and conduct a pumping test in accordance with the HWCPIS (the latest pump test worksheet can be obtained by contacting Commission staff at www.hawaii.gov/dlnr/cwrm/resources_permits.htm). The permittee shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson. No withdrawal of water shall be made for purposes other than testing without a Certificate of Pump Installation Completion. The permitted pump capacity described on the pump installation permit may be reduced in the event that the pump test does not support the capacity.

4. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson. If it can be shown that the well does not tap basal ground water then this condition may be waived after consultation with and acceptance by Commission staff. However, in no instance can the well be drilled deeper than one-half (1/2) of the theoretical thickness without Commission approval.

5. The permittee shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

6. In the event that historically significant remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee shall stop work and immediately contact the Department of Land and Natural Resources' State Historic Preservation Division. Work may recommence only after written concurrence by the State Historic Preservation Division.

7. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.

8. The Well Completion Report Part I shall be submitted to the Chairperson within sixty (60) days after completion of work (please contact staff or visit www.hawaii.gov/dlnr/cwrm/resources_permits.htm for current form).

9. The permittee shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

10. The well construction permit application and, if relevant, any related staff submittal approved by the Commission are incorporated into this permit by reference.

11. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

12. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.

13. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.

14. If the well is not to be used it must be properly capped. If the well is to be abandoned during the course of the project then the permittee must apply for a well abandonment permit in accordance with §13-168-12(f), HAR, prior to any well sealing or plugging work.

15. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

16. This permit shall apply to the location shown on the application only. If the well is to be relocated, the permittee shall apply for a new well construction/pump installation permit in accordance with §13-168-12(f), HAR.

17. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: January 7, 2011
Expiration Date: January 11, 2013

WILLIAM J. AILA, JR., Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Driller's Signature: __________________________ C-57 License #: AC-21896 Date: _____________
Printed Name: Toni Gonsalves Firm or Title: Beylik Drilling and Pump Service, Inc.

Please sign both copies of this permit, return one copy to the Commission office, and retain the other for your records.

Attachment
January 27, 2009

Mr. Mike Brant
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Dear Mr. Brant:

Letter of Assurance for Well Nos. 1901-08, 1900-24, and 2000-06

We have completed the review process for the three captioned Well Construction/Pump Installation Permit applications, which we accepted as complete on September 25, 2008. Your well construction permit and pump installation permits are ready to be issued. However, in accordance with the State Water Code, HRS § 174C-84(a), these permits can only be issued to a licensed contractor and, to date, one has not been identified for your well work.

Once you have selected a licensed contractor, please have the contractor sign and return to the Commission a copy of the original application. Item 24 on the application must be signed by your contractor before we will issue a well construction permit; Item 25 must be signed before we will issue a pump installation work. Upon receiving a signed application for each of the captioned wells, we will issue permits to your contractor(s) provided that the following conditions are met:

1. The contractor has no outstanding issues with the Commission.
2. There are no significant changes to the application.
3. There have been no significant changes to applicable laws, rules or regulations since the application date.
4. There have been no significant changes to the local hydrogeologic conditions since the application date.

Also, on January 22, 2009, the Commission on Water Resource Management approved your applications for two new existing water use permits for these wells. We will send your water use permits to you under separate cover. As you know, we postponed issuance of this letter of assurance until the Commission acted on your water use permit applications.

If you have any questions, please contact Denise Mills of the Commission staff at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DM:ss

c: Tom Nance Water Resource Engineering
Ms. Laura H. Thielen, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Water Use Permit Application, Puuola Ground Water Management Area, Ewa Beach, Oahu, Tax Map Keys: 9-1-116:013, 9-1-102:064, 9-1-136:064, and 9-1-069:005

We have reviewed Water Use Permit Applications (WUPA) 855, 857, 858, and 859 submitted by Gentry Homes, Ltd. and have the following comments to offer.

1. **WUPA 855**: The area identified by the TMK in Table 1 of the application is zoned A-2 Medium Apartment District as stated in Table 1. The proposed use of water for roadway landscaping irrigation in areas of the Ewa by Gentry development is consistent with supporting A-2 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

2. **WUPA 857**: The areas identified by the TMKs in Table 1 of the application are zoned R-5 Residential District, A-1 Low Density Apartment District, and P-2 General Preservation District as stated in Table 1. The proposed use of water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting R-5, A-1, and P-2 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.
Ms. Laura H. Thielen, Chairperson  
Commission on Water Resource Management  
Department of Land and Natural Resources  
November 18, 2008  
Page 2

3. **WUPA 858:** The areas identified by the TMKs in Table 1 of the application are zoned A-1 Low Density Apartment District as stated in Table 1. The proposed use of the water for roadway landscaping in areas of the Ewa by Gentry development is consistent with supporting A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

4. **WUPA 859:** The areas identified by the TMKs in Table 1 of the application are zoned R-5 Residential District and A-1 Low Density Apartment District as stated in Table 1. The proposed use of water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting R-5 and A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

The locations of the two (2) existing and three (3) proposed wells, and the areas identified by the TMKs in all four (4) applications are not in the Special Management Area.

The Board of Water Supply requests contingency plans for well nos. 1901-08, 1900-24, and 2000-06, should the chloride levels of these wells exceed the 1,000 ppm CWRM limit.

Should you have any questions, please contact Tim Hata of our staff at 768-8043.

Very truly yours,

[Signature]

Henry Eng, FAICP, Director
Department of Planning and Permitting

HE: lh
p:DivFunction/WUP/2008elog2678

cc: Board of Water Supply, Attn: Glenn Oyama
TO: Morris Atta, Administrator  
   Land Division  
FROM: Ken C. Kawahara, P.E., Deputy Director  
   Commission on Water Resource Management  
SUBJECT: Well Construction/Pump Installation Permit Application  
   Gentry Area 45 well (Well No. 1901-08), TMK (1) 9-1-069:005

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by November 20, 2008. If we do not hear from you by that date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Denise Mills of the Commission staff at 587-0251.

RESPONSE:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

XX A water lease/permit is not required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no. __________.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact Person: Gary Martin  
Phone: 587-0421

Signed: ____________________________  
Date: NOV 18 2008
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WFPIA review transmittals

Gentry Homes - Wells 1901-08, 2000-06,
1900-24
October 28, 2008

Mr. Mike Brant
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Dear Mr. Brant:

Well Construction/Pump Installation Permit Application for Well No. 1901-08

We acknowledge receipt, on September 25, 2008, of your Well Construction/Pump Installation permit application and filing fee for the proposed Gentry Area 45 well (Well No. 1901-08). However, applications for permits are required to be made by a contractor with a valid and active C-57, C-57a or A license and who will perform the work, in accordance with the State Water Code, §174C-84(a), HRS.

Because you have not identified a qualified contractor, your application will not be accepted as complete until a qualifying contractor signs and completes items 24 and 25 on the application form. We will, however, process your incomplete application for review, and if the review warrants issuance of a permit, we will issue a letter of assurance in lieu of the permit. The letter of assurance will indicate that a permit will be issued when the contractor signs the application and the following conditions are met: (a) the contractor has no outstanding issues with the Commission; (b) there have been no significant changes to the application; (c) there have been no significant changes to applicable laws, rules or regulations; and (d) there have been no significant changes to hydrologic conditions at the proposed well site.

For your information, the attached table describes the process, responsible parties, and deadline requirements for drilling or modifying a well and installing, modifying, or replacing a pump.

By this letter, we are also notifying you that upon acceptable completion of the well construction and pump installation work required under the permits, we will issue certificates of well construction and pump installation completion to Gentry Homes, Ltd. These certificates will transfer all responsibility for well care, maintenance, and pumpage from to Gentry Homes. Until that time, your drilling and pump installation contractor will be responsible for complying with all permit conditions.

If you have any questions about your permit application, please contact Denise Mills of the Commission staff at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DM:ss
Attachment
c: Tom Nance
TO: Morris Atta, Administrator  
Land Division
FROM: Ken C. Kawahara, P.E., Deputy Director  
Commission on Water Resource Management
SUBJECT: Well Construction/Pump Installation Permit Application  
Gentry Area 45 well (Well No. 1901-08), TMK (1) 9-1-069:005

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by November 20, 2008. If we do not hear from you by that date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Denise Mills of the Commission staff at 587-0251.

DEM:ss
Attachment(s)

RESPONSE:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

[ ] A water lease/permit is not required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no. ________________.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact Person: ____________________________ Phone: ________________

Signed: ____________________________ Date: ________________
October 28, 2008

Mr. Clifford Lum, Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Dear Mr. Lum:

Well Construction/Pump Installation Permit Review
Well Construction/Pump Installation Permit Application
Gentry Area 45 well (Well No. 1901-08)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application. Please submit any comments on this application, if any, by November 20, 2008. If we do not hear from you by that date, we will assume you have no comments.

If you have any questions about this permit application, please contact Denise Mills of the Commission staff at 587-0251.

Sincerely,

[Signature]

LAURA H. THIELEN
Chairperson

DM:ss
Ewa by Gentry
Water Supply Wells for Irrigation Master Plan
WUPA Nos. 855 through 859

Existing wells: 1901–05, 2001–12
New proposed wells: 1900–24, 1901–08, 2000–06

http://maps.google.com/maps?f=q&hl=en&geocode=&q=keaunui+drive,+ewa+beach&sl... 10/16/2008
Assessed Values reflect tax year 2008.

Search criteria: TMK Taxkey 1-9-1-69-5

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Well No. 1901-08 (Gentry 25)

This information has been supplied by third parties and has not been independently verified by Hawaii Information Service and is, therefore, not guaranteed.

Copyright ©9/3/2008 by Hawaii Information Service
### Well Check Program
4/1/04 - Revised for update to Well Standards (February 2004)

**Data Input**

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<td>Open Casing Length</td>
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**Results**

### Well Depth

- Theoretical Thickness of Aquifer: 69.7
- 1/4 Aquifer Thickness: 17.425

### Well Casing

- Minimum Wall Thickness Material: pvc plastic
- Minimum Thickness per standards: no requirement
- Wall Thickness Provided: 0.406
- Minimum Length of Solid Casing: 20.97
- Length of solid casing Provided: 22
- Casing Material: Schedule 40
- (for pvc only - check for 200' limit): in compliance

### Annular Space

- Depth of Grouting: 16.31
- Thickness of Annular Space: 3.5

---

Ok - saltwater well/irrigation

- yes
- no
- steel
- stainless steel
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
APPLICATION FOR A WELL CONSTRUCTION / PUMP INSTALLATION PERMIT

Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Application must be accompanied by 10 copies and a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at 987-0226. For further information and updates to this application form, visit http://www.hawaii.gov/dlnr/cwrm.

WELL LOCATION INFORMATION
1. STATE WELL No. (if already assigned) 19DI-01
2. WELL NAME Gentry 45 Well
3. ISLAND Oahu
4. TMK 09 50 69 005

The following must be attached before this application is accepted as complete:
• Portion of 7.6-Minute Series U.S.G.S. topographic map (scale 1:24,000) with well location labeled and include the name of the quad map
• Property tax map, showing well location referenced to established property boundaries
• Photograph of the proposed well site
• A schematic diagram showing the well site, access road and proposed well infrastructure
• For dug wells, attach a grading plan with cross section profiles showing existing and finished grades

5. WELL OPERATOR’S NAME/COMPANY Gentry Homes, Ltd.
6. WELL OPERATOR’S Contact Mike Brant
7. WELL OPERATOR’S Mailing Address P. O. Box 295
   Honolulu, Hawaii 96809
8. LANDOWNER’S NAME/COMPANY Gentry Investment Properties
9. LANDOWNER’S Contact Mike Brant
10. LANDOWNER’S Mailing Address P.O. Box 285
    Honolulu, Hawaii 96809

PROPOSED WELL CONSTRUCTION
7. Proposed Work
   □ Construct New Well
   □ Modify Existing Well
   □ Abandon/Seal Well
8. Construction Type
   □ Drilled
   □ Dug
   □ Shaft
   □ Tunnel

PROPOSED PUMP INSTALLATION
10. Proposed Work
   □ Install New Pump
   □ Replace Pump

11. Proposed Pumping Rate, gpm
    (gallons per minute)
    100 GPM

12. Proposed Amount of Withdrawal, gpd
    (gallons per day)
    68,085

WELL LOCATION INFORMATION
13. Method of flow measurement
    □ Flowmeter
    □ Other (explain)

14. Proposed Surveyor name and license number (a surveyor is required for all Well Construction Permits and may be required for some Pump Installation Permits)

15. Municipal (water systems serving greater than 25 individuals or 15 service connections)
16. Domestic
17. Industrial (describe)
18. Irrigation (describe crop and no. of acres)
19. Military (describe)
20. Other (describe)

OTHER LEGAL REQUIREMENTS If required, items 21 and 22. must be obtained before the Commission can legally issue a permit:

21. Conservation District Use Permit (CDUP)
   □ Well is in Conservation District
   □ Required, CDUP # date approved
   □ Not Required (attach documentation from CDUP)
   □ I have not checked with OCCL about whether or not a CDUP is required. I understand that checking with OCCL prior to making this application will expedite my review. I further understand that issues raised by this agency may delay or result in denial of the permit issuance or revocation of the permit after it is issued.
   □ Well is not in Conservation District.

22. Special Management Area Permit (SMAP)
   □ Required, SMA # date approved
   □ Not Required (attach documentation from applicable County agency)
   □ I have not checked with the county about whether or not an SMA Permit is required. I understand that checking with the County prior to making this application may expedite my review. I further understand that issues raised by this agency may delay or result in denial of the permit issuance, or revocation of the permit after it is issued.

23. State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources
   □ I have consulted with the HPD regarding potential impacts of well construction activities on historic sites. I have attached applicable documentation from the HPD.
   □ I have not consulted with the HPD regarding potential impacts of well construction activities on historic sites. I understand that checking with the HPD prior to making this application may expedite my review. I further understand that issues raised by this agency may delay or result in denial of the permit issuance, or revocation of the permit after it is issued.

Additional remarks, explanations, etc. (attach additional sheet if more space is needed)

NOTE: SIGNED indicates that the signatories understand and swear that the information provided is accurate and true to the best of their knowledge.

For Official Use Only: RECEIVED

REVIEWER
Revised: AUG 18

APPROVED

WCPI Application Form 02/25/2007

For Official Use Only:

RECEIVED

DATE: AUG 18

APPROVED

WCPI Application Form 02/25/2007

For Official Use Only:

RECEIVED
PROPOSED WELL SECTION

(Please attach schematic if different from diagram provided below)

Hole Diameter: 19 in.

Minimum of 2’ Radius & 4” Thick Concrete Pad (to contain benchmark surveyed to nearest 0.01 ft.).

Ground Elevation: 25 ft., msl*

Cement Grout: 20 ft. (min. 70% of distance from ground elevation to top of water surface or 50 ft., whichever is less.)

Annular space between hole and casing (1.5” for positive displacement, 3” for other methods):

3 in.

Rock or Gravel Packing:

None

Material:

Crushed Basalt

Rounded Gravel

Estimated Water Level Elevation: 1.7 ft., msl*

Grouting method:

☑ Positive displacement

☐ Other

Solid Casing: (≥ 90% x (Ground Elev. - Water Level Elev))

Total Length: 22 ft.

Nominal Diameter: 12 in.

Wall Thickness: 0.406 in.

Bottom Elevation: -7 ft., msl*

Solid Casing: (check one) 0 Schedule 40 0 Schedule 80 0 Schedule 120

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): 0 Schedule 40 0 Schedule 80 0 Schedule 120

Thermoset Plastic: (check one)

☑ Filament Wound Resin Pipe conforming to ASTM D2996

☐ Centrifugally Cast Resin Pipe conforming to ASTM D2997

☐ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517

☐ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950

☐ PTFE Fluorocarbon Tubing conforming to ASTM D3296

☐ FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing:

Total Length: 10 ft.

Nominal Diameter: 12 in.

Wall Thickness: 0.406 in.

Bottom Elevation: -7 ft., msl*

Open Casing: 0 Perforated 0 Screen

Open Hole:

Length: 5 ft.

Diameter: 19 in.

Bottom Elevation: -12 ft., msl*

Gentry 45 Well

*The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,

Bottom Elevation of Well Limit = \( \frac{(\text{Water Elevation} - \text{Hole Elevation})}{4} \)

Example: Estimated + 2 ft. Water Level Elev.  Bottom Elevation of Well Limit = \( \frac{(2 - 1.7)}{4} \) = -0.85 ft.

Solid Casing Material:

Carbon Steel: compliant with (check one or more): 0 ANSI/AWWA C200 0 API Spec. 5L 0 ASTM A53 0 ASTM A139

And compliant with (check one or more): 0 ASTM A242 (or A606) 0 Type E 0 Type S 0 Grade B 0 Other

Stainless Steel: (check one): 0 ASTM A409 (production wells) 0 ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) 0 Schedule 40 0 Schedule 80 0 Schedule 120

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): 0 Schedule 40 0 Schedule 80 0 Schedule 120

Thermoset Plastic: (check one)

0 Filament Wound Resin Pipe conforming to ASTM D2996

0 Centrifugally Cast Resin Pipe conforming to ASTM D2997

0 Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517

0 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950

0 PTFE Fluorocarbon Tubing conforming to ASTM D3296

0 FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:

Carbon Steel: compliant with (check one or more): 0 ANSI/AWWA C200 0 API Spec. 5L 0 ASTM A53 0 ASTM A139

And compliant with (check one or more): 0 ASTM A242 (or A606) 0 Type E 0 Type S 0 Grade B 0 Other

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Thermoset Plastic: (check one)

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0 Centrifugally Cast Resin Pipe conforming to ASTM D2997

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0 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950

0 PTFE Fluorocarbon Tubing conforming to ASTM D3296

0 FEP Fluorocarbon Tubing conforming to ASTM D3296

WCP I Application Form 02/26/2007
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Address List:

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GENTRY AREA 45 WELL
Ms. Elaine Jourdane
Assistant Archaeologist
Historic Preservation Division
Department of Land and Natural Resources
Kakuihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Dear Ms. Jourdane:

Subject: Gentry Ewa Makai Environmental Impact Statement Preparation Notice

Thank you for your comments regarding the subject project. We understand your review of the project has determined that no historic properties will be affected because the site has been intensively cultivated, previous grubbing and grading has altered the land, and an acceptable archaeological assessment has found no historic properties.

We appreciate your review of this project and will include your letter in the Draft Environmental Impact Statement that is being prepared for the Ewa Makai development.

Sincerely,

Taeyong Kim
Environmental Communications, Inc.
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<td>YOSHINAGA, M.</td>
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*edits ok* then to Susan

*OK - Susan - I made changes already.*

combined WQUP transmittal letter w/ notice of action.

my is attachment.
**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete Item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

   Ms. Yvonne Izu  
   Haseko (Ewa) Inc. 
   c/o Morihara Lau & Fong, LLP  
   841 Bishop Street, Suite 400  
   Honolulu, HI 96813

   (WUP No. 854)

2. Article Number  
   *(Transfer from service label)*

   7006 2150 0003 3953 6257

**COMPLETE THIS SECTION ON DELIVERY**

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3. Service Type

- [X] Certified Mail
- [ ] Express Mail
- [ ] Registered
- [ ] Return Receipt for Merchandise
- [ ] Insured Mail
- [ ] C.O.D.

4. Restricted Delivery? *(Extra Fee)*  
   Yes

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PS Form 3811, February 2004  
Domestic Return Receipt  
102595-02-M-1540
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. Box 621
Honolulu, Hawaii 96809
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MS. YVONNE IZU
Haseko (Ewa) Inc.
c/o Morihara Lau & Fong, LLP
841 Bishop Street, Suite 400
Honolulu, HI 96813
Certified Mail Provides:
- A mailing receipt
- A unique identifier for your mailpiece
- A record of delivery kept by the Postal Service for two years

Important Reminders:
- Certified Mail may ONLY be combined with First-Class Mail or Priority Mail.
- Certified Mail is not available for any class of international mail.
- NO INSURANCE COVERAGE IS PROVIDED with Certified Mail. For valuables, please consider Insured or Registered Mail.
- For an additional fee, a Return Receipt may be requested to provide proof of delivery. To obtain Return Receipt service, please complete and attach a Return Receipt (PS Form 3811) to the article and add applicable postage to over the fee. Endorse mailpiece "Return Receipt Requested". To receive a fee waiver for a duplicate return receipt, a USPS postmark on your Certified Mail receipt is required.
- For an additional fee, delivery may be restricted to the addressee or their authorized agent. Advise the clerk or mark the mailpiece with the endorsement "Restricted Delivery".
- If a postmark on the Certified Mail receipt is desired, please present the article at the post office for postmarking. If a postmark on the Certified Mail receipt is not needed, detach and affix label with postage and mail.

IMPORTANT: Save this receipt and present it when making an inquiry.
PS Form 3800, August 2006 (Reverse) PSN 7530-02-900-9047
April 26, 2010

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Yvonne Izu
Haseko (Ewa) Inc.
c/o Morihara Lau & Fong, LLP
841 Bishop Street, Suite 400
Honolulu, HI 96813

Dear Ms. Izu:

Approval of Water Use Permit (WUP No. 884) for Well Nos. 1901-06, 1902-01, -09 to -11
Puuloa Ground-Water Management Area, Oahu

This letter is notification that the Commission approved your Water Use Permit at their meeting on April 21, 2010. Attached is your water use permit for Ocean Pointe 1-4 Wells and EP-27 (Well Nos. 1901-06, 1902-01, -09 to -11) for use of 1.337 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on April 21, 2010. This permit supercedes WUP 784 but extends your chloride cap variance to exceed 1,000 mg/l. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 19:

Special Conditions

1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

2. The applicant shall contact the Environmental Management Division, State Department of Health, at 586-4304, concerning "GUIDELINES APPLICABLE TO GOLF COURSES IN HAWAII" dated July, 2002 (version 6).

3. Standard Condition 16 for a water shortage plan requirement is waived.

4. The permittee shall submit a contingency plan for water use in the event the chloride concentration in the permitted well(s) exceeds the 1,000 mg/l sustainable capacity limit established for Ewa caprock aquifer sources, the permittee shall seek an alternative source of supply. The contingency plan shall be submitted to the Commission within 30 days of the issuance of this permit.
5. The area that this permit is valid for is defined by the footprint in Exhibit 1 (TMK 9-1:various). The permittee is not required to notify the Commission of TMK changes provided that the change occurs within the footprint and that the uses remain in compliance with state and county general plans and land use designations and county land use plans and policies.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit.

We draw your attention to two key conditions of your permit that require your response. First, you are required to keep a record of your monthly total pumpage, water level, salinity, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

Second, you are required to submit a water shortage plan to the Commission within thirty (30) days of the issuance date of this permit. Your water shortage plan simply identifies what you are willing to do should the Commission declare a water shortage situation in the Puuloa Ground-Water Management Area and can be as short as a one page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from all sources. The Commission is required, by law, to formulate a plan to implement such area-wide reductions, which should accommodate, include, and be consistent with your plans. Therefore, your help, by submitting your water shortage plan, is greatly needed in formulating the Commission's overall Water Shortage Plan.

If you have any questions, please call Ryan Imata of the Commission staff at 587-0255.

Sincerely,

LAURA H. THIELEN
Chairperson

Attachments: WUR Form
GROUND-WATER USE PERMIT
WUP NO. 884

PERMITTEE

<table>
<thead>
<tr>
<th>Permittee/Water User</th>
<th>Landowner of Source</th>
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<tbody>
<tr>
<td>Haseko (Ewa) Inc.</td>
<td>c/o Morihara Lau &amp; Fong, LLP</td>
</tr>
<tr>
<td>841 Bishop Street, Suite 400</td>
<td>Same</td>
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<tr>
<td>Honolulu, HI 96813</td>
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PERMITTED SOURCE INFORMATION

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<td>Puuloa</td>
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<td>System Sustainable Yield</td>
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<td>State Well No.</td>
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PERMITTED USE INFORMATION

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<tr>
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<td>9-1-various</td>
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<tr>
<td>County zoning classification</td>
<td>various</td>
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Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the permittee is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its April 21, 2010 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).
11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

LAURA H. THIELEN, Chairperson
Commission on Water Resource Management

Attachment
AGENDA
FOR THE MEETING OF THE
COMMISSION ON WATER RESOURCE MANAGEMENT

DATE: April 21, 2010
TIME: 9:00 am
PLACE: Kalanimoku Building
DLNR Board Room 132
1151 Punchbowl Street
Honolulu, Hawaii 96813

A. APPROVAL OF MINUTES
   1. March 15, 2010

B. ANNOUNCEMENTS

C. STREAM PROTECTION AND MANAGEMENT
   1. Application for After-the-Fact Stream Channel Alteration Permit (SCAP.2601.3), Emergency Repair of Numana Street Bridge, Kalihi Stream, Kalihi, Oahu, TMKs: (1) 1-4-009:007, 1-4-017:001, 028 and 033
   2. Application for Stream Diversion Works Permit (SDWP.2586.6) and Petition to Amend Interim Instream Flow Standard for New Auwai for Irrigation and Domestic Use, Honokala Gulch, Haiku, Maui, TMK: (2) 2-9-002:041

D. GROUND WATER
   1. Application for a Water Use Permit, Ocean Point 1-4, EP-27 (Well No. 1902-09,-10,-11, 1901-06, 1902-01), TMK 9-1: various WUP No. 884 (Modification of WUP No. 784), To New (Agricultural) Use for 1.500 mgd, Pualoa Ground Water Management Area, Oahu

E. NEXT COMMISSION MEETINGS (TENTATIVE)
   1. May 19, 2010
   2. June 16, 2010

Materials related to items on this agenda are available for review at our office at 1151 Punchbowl Street, Room 227, and also will be available at the meeting.

Any person may testify or present information on any meeting agenda item, unless the item involves a proceeding in an existing contested case. In addition, if you have a legal interest that may be adversely affected by the proposed action, you may have a right to an administrative contested case hearing. You must make the request for such a hearing either orally or in writing at the public hearing or meeting for which this notice is given. Hawaii Administrative Rules (H.A.R.) Section 13-167-52(a).

If you request a contested case hearing, you will have the opportunity to present to the Commission oral or written evidence or testimony or both to establish your standing. You may present your testimony or evidence on standing at the meeting or public hearing described above or, alternatively, at a hearing set by the Commission at a later date.

If you request a contested case hearing either orally or in writing, you must also complete and file (or mail and postmark) a written petition for a contested case with the Commission within ten days after the date of the public hearing or meeting noticed here. Petition forms are available from the Commission. H.A.R. Section 13-167-52(a).

If you do not make such a request or fail to file a timely written petition with the Commission, the consequence is that you will be precluded from later obtaining a contested case hearing and seeking judicial review of any adverse decision. H.A.R. Chapter 13-167.

Disabled individuals planning to attend the public hearing or meeting are asked to contact the Commission at the above address or phone (Kauai) 274-3141 ext. 70214, ( Maui) 984-2400 ext. 70214, (Hawaii) 974-4000 ext. 70214, (Molokai or Lanai) 1-800-GOV-INHI ext. 70214 or 587-0214 at least three days in advance of the public hearing or meeting to indicate if they have special needs which require accommodation.
STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

April 21, 2010
Honolulu, Oahu

Haseko (Ewa), Inc.
APPLICATION FOR A WATER USE PERMIT
Ocean Point 1-4, EP-27 (Well No. 1902-09,-10,-11, 1901-06, 1902-01), TMK 9-1:various
WUP No. 884 (Modification of WUP No. 784)
To New (Agricultural) Use for 1.500 mgd
Puuloa Ground Water Management Area, Oahu

APPLICANT: Haseko (Ewa), Inc.
841 Bishop Street, Suite 400
Honolulu, HI 96813

LANDOWNER: Same

SUMMARY OF REQUEST:

The applicant requests that the Commission on Water Resource Management (Commission) modify water use permit no. 784 by decreasing the current allocation from 3.300 million gallons per day (mgd) to 1.500 mgd of non-potable caprock ground water from an existing well to supply golf course irrigation, landscape irrigation, and dust control.

LOCATION MAP: See Exhibit 1

BACKGROUND:

On May 14, 1997, the Commission approved water use permit (WUP) no. 192 to Haseko (Ewa) Inc. (Haseko) for 1.800 mgd, with a chloride cap of 1,000 mg/l, for agricultural use. On the same day, the Commission also approved WUP no. 347 to Haseko for 1.500 mgd, with a chloride cap of 1,000 mg/l, for golf course, roadway and maintenance irrigation, and dust control. Both of these water use permits covered the same well source, EP-27.
On July 15, 2002, the Commission approved a variance for the 1,000 mg/l chloride cap, subject to repeal once the R-1 wastewater use started.

On May 15, 2003, the Commission administratively modified and combined WUP nos. 192 and 347 into WUP no. 650, for a total of 3.3 mgd. This modification also added the Ocean Point Wells 1-4 (Well Nos. 1901-06, 1902-09, 10 & 11).

On August 3, 2006, the Commission issued WUP no. 784 to convert WUP no. 650 from interim to permanent status.

On October 1, 2008, the Commission approved a second variance to the chloride cap of 1,000 mg/l, despite starting to use of R-1 water in early 2008 because the available amount of R-1 was not sufficient to meet their irrigation needs and the only alternative was to use potable Board of Water Supply (BWS) water.

On December 29, 2009, the Commission received a completed application from Haseko to modify WUP no. 784. The application requests the following: 1) the reduction of allocation from 3.300 to 1.500 mgd; 2) the modification of the end use area to encompass the entire Ocean Pointe/Hoakalei project area; and 3) the deletion of Special Condition b., which requires reporting TMK changes of end uses.

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**

   If approved by the Commission, there will be a net reduction of this allocation from 3.300 mgd to 1.500 mgd. Further, as part of the Ewa Caprock Aquifer Sector, the Puuloa Aquifer System is regulated by the maximum allowable chloride concentration limit of 1,000 mg/l, not total pumpage. Current chlorides for these sources have been reported at between 830 and 1,075 mg/l for the period between November 2009 and February 2010, and this reduction in allocation should not increase these concentrations. Therefore, water is available.

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 brackish, non-potable ground water for dust control and irrigation. These are considered industrial and irrigation uses of water. The Declaration of Policy section, §174C-2(c) HRS, states that the Water Code shall be liberally interpreted to obtain maximum beneficial use of the waters of the State for various purposes including industrial and irrigation uses.

II. Quantity Justification

The applicant is requesting a total of 1.500 mgd for the following uses: golf course irrigation, landscape irrigation, and dust control.

Golf course irrigation

The current allocation for golf course irrigation is 1.080 mgd. The change in total area covered under this permit request does not affect the golf course net land area. However, there is now 600,000 gpd of R-1 water that is provided for the golf course by the BWS from the Honouliuli Wastewater Treatment Plant. Therefore, the total amount of groundwater that is justifiable for golf course use is now 1.080 - 0.600 = 0.480 mgd.

Landscape irrigation

The current allocation for landscape irrigation is 0.105 mgd. Presently, there are approximately 10 acres of nursery used to provide plants for the development.

Since its presentation to the Commission in April 2008, the Commission staff has used an ArcGIS based numerical simulation irrigation model, created in conjunction with the College of Tropical Agriculture and Human Resources (CTAHR), from the University of Hawaii, as a guideline to help review irrigation requirements for proposed water use permit applications. Most applications do not have the level of irrigation analysis as provided by this application. Nevertheless, it is useful to use the Irrigation Water Requirement Estimation Decision Support System (IWREDSS) model for comparative purposes.

Based on the IWREDSS, staff has calculated that landscape tree irrigation requirements may be on the order of 3,187 gpd/acre. At 10 acres, a reasonable approximation would be 31,870 gpd, or 0.032 mgd.
Dust control

The Commission has used estimates of between 1,500 and 3,500 gpd/acre for dust control in the past. However the higher of this range took composting requirements into account. According to the applicant, approximately 50% of the homes are now constructed. Applying 1,500 gpd/acre for half of the total land area (550 acres), the applicant would require 0.825 mgd.

Therefore, the total projected demand is the sum of golf course irrigation (0.480 mgd) + landscape irrigation (0.032 mgd) + dust control (0.825 mgd) = 1.337 mgd.

III. Efficiency of Use

The golf course is irrigated using sprinklers, and watering is done at night. Nursery irrigation is done using sprinklers. Dust control is done with truck spray. These methods, while not the most efficient, are the most economical and practical.

IV. Analysis of Practical Alternatives

The golf course is already using R-1 reuse water for irrigation, with the remainder coming from the wells under this permit. Surface and ditch water are not available. Desalinization is too expensive. Potable water from the BWS is available, but is more expensive and the use of nonpotable brackish water is more suitable than potable water for irrigation and dust control use.

Given these considerations (I through IV), 1.337 mgd seems to be a reasonable and beneficial quantity.

(3) Interference with other existing legal uses

Because the total amount of proposed water use will decrease and there is currently no interference with other existing legal uses, the potential for interference is less than currently exists.

(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 applicant states that the golf course serves as a greenbelt, as well as retention/detention basins for stormwater flows. Dust control measures are required by the Department of Health. Additionally, irrigation is deemed to be in the public interest. Also, no objections have been made through the agency and public review process. Therefore, this application is consistent with the public interest.

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

The proposed uses are in various state districts and county zones.

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) with its Clean Water, Safe Drinking Water, and Wastewater Branches; the Department of Hawaiian Home Lands (DDHL), and Land Use Commission (LUC); and the Office of Hawaiian Affairs (OHA);
2) the County’s County Council, Department of Planning and Permitting, and the Honolulu Board of Water Supply.

Additionally, no comments or objections have been made through this review. These proposed uses and land use designations have been confirmed and are consistent with the state and county general plans and land use designations.

(6) County land use plans and policies

Again normal County review includes County Council, Department of Planning and Permitting, and the Board of Water Supply and this water use application has been confirmed to be consistent with County land use plans and policies. No comments or objections have been made.

(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) and the Office of Hawaiian Affairs have reviewed this application and made no comments or objections. Further, 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 DHHL rights.
Other issues

The applicant wishes to have this permit issued for a general defined footprint within TMK 9-1:various rather than individual TMKs down to the normal parcel level. The reason for this request is to reduce the burdensome requirement to notify the Commission when each and every individual new parcel number is assigned. Originally, Haseko was only located on TMKs 9-1-011:various and 9-1-012:various since 2006. The plat numbers have been subdivided into at least 10 additional plats with hundreds of parcel updates for each lot, common areas, and roads. The continued subdivision process and size of the parcels in question would make changes relatively frequent and numerous, within additional changes to be made on the order of as much as 1,000 updates. Therefore, staff believes the intent of tracking TMK changes can be met at the larger plat, TMK 9-1:various, as represented by the map shown on Exhibit 1A.

RECOMMENDATION:

Staff recommends that the Commission modify WUP No. 784 by approving the issuance of WUP No. 884 to Haseko (Ewa), Inc. for the reasonable and beneficial use of 1.337 million gallons per day of non-potable brackish water for golf course and landscape irrigation and dust control from the Ocean Point 1-4, EP-27 Wells (Well Nos. 1902-09,-10,-11, 1901-06, 1902-01), subject to the standard water use permit conditions listed in Attachment B and the following special conditions:

1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

2. The applicant shall contact the Environmental Management Division, State Department of Health, at 586-4304, concerning "GUIDELINES APPLICABLE TO GOLF COURSES IN HAWAII" dated July, 2002 (version 6).

3. Standard Condition 16 for a water shortage plan requirement is waived.

4. The permittee shall submit a contingency plan for water use in the event the chloride concentration in the permitted well(s) exceeds the 1,000 mg/l sustainable capacity limit established for Ewa caprock aquifer sources, the permittee shall seek an alternative source of supply. The contingency plan shall be submitted to the Commission within 30 days of the issuance of this permit.
5. The area that this permit is valid for is defined by the footprint in Exhibit 1 (TMK 9-1: various). The permittee is not required to notify the Commission of TMK changes provided that the change occurs within the footprint and that the uses remain in compliance with state and county general plans and land use designations and county land use plans and policies.

Respectfully submitted,

KEN C. KAWAHARA, P.E.
Deputy Director

Attachments:  
A (Water Use Permit Detailed Information)  
B (Water Use Permit Standard Conditions)

Exhibit:  
1 (Location Map)

APPROVED FOR SUBMITTAL:

LAURA H. THIELEN  
Chairperson
WATER USE PERMIT DETAILED INFORMATION

Source Information

AQUIFER: Puuloa System, Ewa Caprock Sector, Oahu
Sustainable Yield: 1000 mg/l

Use Information

Quantity Requested: 1.500 million gallons per day
New Type of Water Use: golf course and landscape irrigation and dust control
Place of Water Use: refer to Exhibit 1

Public Notice

In accordance with HAR §13-171-17, a public notice was published in the Honolulu Advertiser on January 29, 2010 and February 5, 2010 and a copy of the notice was sent to the Mayor’s office. Copies of the completed application were sent to the Board of Water Supply, Department of Planning and Permitting, Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, the various divisions within the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by February 22, 2010.

Objections

The public notice specifies that an objector meet the following requirements: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; (3) state all grounds for objections to the proposed permits, (4) provide a copy of the objection letter(s) to the applicant, and (5) submit objections meeting the previous requirements to the Commission by February 22, 2010.

No objections were submitted. To the best of staff’s knowledge there are no objectors who have property interest within the Puuloa Aquifer System or who will be directly and immediately affected by the proposed water use.

Briefs in Support

Responses to objections, or briefs in support, regarding the application are required to be filed with the Commission ten (10) days after an objection is filed and, presumably, copies are served to the applicant. No briefs in support were filed with the Commission.
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its April 21, 2010 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:

a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

ATTACHMENT B
16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
Hi Yvonne and Jill,

Sorry for the late notice, this didn't get posted until recently.


Thanks,

Ryan
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REMARKS:
- LINE (1): Reimbursement for Public Notice cost for WUPA No.884

LINE (2)
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TRANSMITTAL MEMORANDUM

TO: Mr. Ryan Imata  
Commission on Water Management  
Kalaninoku Building, Room 227  
1151 Punchbowl Street  
Honolulu, Hawaii 96813

FROM: Jill K. Velasco, Legal Assistant

DATE: February 19, 2010

RE: HASEKO (Ewa), Inc. – WUPA No. 884

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<td>Our firm’s check No. 1120, payable to the Department of Land &amp; Natural Resources in the amount of $275.11, for payment of the Public Notice publication fee; together with a copy of the Honolulu Star-Bulletin-MidWeek Invoice dated 02-05-2010</td>
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( ) For your information  
( ) For signature & return  
( ) For signature, forwarding as noted below & return  
( ) For review & comment  
( ) For correction  
( ) For distribution  
( ) For recording/filing  
( ) For payment  
( ) For necessary action  
( ) For your approval  
( ) Approved as noted  
( ) Returned for corrections  
( ) Disapproved  
( ) For your files  
( ) See remarks below

Ryan, thank you for processing Haseko’s modification request so quickly. Please feel free to call if we can be of further assistance.

c: HASEKO (Ewa), Inc.
**INVOICE**

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**BILLING DATE:** 02/05/2010  
**TERMS OF PAYMENT:** NET 30 DAYS  
**BILLED ACCOUNT NO:** 5828  
**CLIENT NAME:** DLNR, COMM ON WATER RESOURCE MGMT  
**BILLED ACCOUNT NO:** 5828

Payment is due upon receipt. Accounts over 30 days will be assessed a finance charge of 1 1/2% per month (18% APR)

**PAGE NUMBER** 1  
**BILLING DATE** 02/05/2010  
**BILLED ACCT#** 5828  
**ADVERTISER/CLIENT#** 5828

**TOTAL AMOUNT DUE** $0.00

**AMOUNT REMITTED**

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Make checks payable to: Oahu Publications, INC.

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Rose Mae Rosales being duly sworn, deposes and says that she is a clerk, duly authorized to execute this affidavit of MidWeek Printing, Inc. publisher of MidWeek and the Honolulu Star-Bulletin, that said newspapers are newspapers of general circulation in the State of Hawaii, and that the attached notice is true notice as was published in the aforementioned newspapers as follows:

Honolulu Star-Bulletin 2 times on:
01/29, 02/05/2010

Midweek Wed. 0 times on:

Midweek Fri. 0 times on:

And that affiant is not a party to or in any way interested in the above entitled matter.

Rose Mae Rosales

Subscribed to and sworn before me this 5th day of February, 2010.

Patricia K. Reese, Notary Public of the First Judicial Circuit, State of Hawaii

My commission expires: October 07, 2010

Ad # 0000172553
COMMISSION ON WATER RESOURCE MANAGEMENT
ROUTE SLIP FOR NEW APPLICATIONS

FROM: RYAN
DATE: 30-Dec-09
SUSPENSE DATE: 6-Jan-10

TO: CHING, F. INIT. TO: KUNIMURA, I. INIT. FOR:
FUJII, N. HARDY, R. HARDY, R.
GOODING, K. OHYE, M. OHYE, M.
HIGA, D. SAKODA, E. SAKODA, E.
HOAGBIN, S. SWANSON, S. SWANSON, S.
ICE, C. UYENO, D. UYENO, D.
IMATA, R. YODA, K. YODA, K.
KAWAHARA, K. YOSHINAGA, M. YOSHINAGA, M.

WELL NUMBER EP 27 & Oceaa
WELL NAME EP 27 & Oceaa

☐ WELL CONSTRUCTION ☐ PUMP INSTALLATION

ATTACHMENTS FOR APPLICATION PROCESSING - Both applicant & staff generated:
1 TRANS. LETTER ✔
2 PERMIT PROCESS TABLE
3 CWRM MAP
4 APPL. FORM (11 COPIES)
5 USGS MAPS (11 COPIES)
6 TAX MAPS (11 COPIES)
7 PARCEL OWNER VERIF.
8 CONTRACTOR VERIF.
9 ALL INFO FILLED IN
10 BACKGROUND CHECK
11 $25 FEE DEPOSIT SLIP
12 DHP/CDUP/SMA pre-screen (SMA map printout http://gis.hicentral.com/website/parcelzoning/viewer.htm, or INGRID'S SMA/CD MAP)
(LUC map printout http://luc.state.hi.us/luc_maps.htm, or INGRID'S SMA/CD MAP)

FOLDER:
☐ MADE NEW FILE FOLDER, ATTACHED
☐ FILE FOLDER ALREADY MADE, IN FILE CABINET

INCOMPLETE ACTION DATES:

DATE ACTION

note tab comments while accepting

Dec 19, 2009

Dec
Ms. Yvonne Izu  
Haseko (Ewa) Inc.  
c/o Morihara, Lau & Fong, LLC  
841 Bishop Street, Suite 400  
Honolulu, HI 96813  

Dear Ms. Izu:  

We acknowledge receipt, on December 29, 2009, of your completed water use permit application (WUPA No. 884) for the EP 27 & Ocean Pr. 1-4 Wells (Well Nos. 1901-06, 1902-01,-09,-10,-11). You can expect your application to be processed within ninety (90) days from the date of receipt unless there are objections to your application.  

Enclosed is a copy of the public notice for your water use permit application which will be published in the Honolulu Star Bulletin issues of January 29, 2010 and February 5, 2010. You will be required to pay for the cost of the public notice, which runs about $400. We will send you an invoice shortly after your notice is published.  

Please be aware that there may be objections to your application. If objections are made, the objector is required to file such objections with the Commission and is also required to send you a copy of the objections.  

You, or any other party, may respond to objections by filing a brief in support of your application with the Commission within ten (10) days of the filing of an objection. You, or the other party, must also send a copy of the response to the objector.  

If you have any questions, please contact Ryan Imata at 587-0255.  

Sincerely,  

KEN C. KAWAHARA, P.E.  
Deputy Director  

RI:ss  
Enclosure
January 27, 2010

TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    State Parks

FROM: Ken C. Kawahara, P.E., Deputy Director
      Commission on Water Resource Management

SUBJECT: Request for Comments
         Water Use Permit Application
         Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application (WUPA No. 884) for Haseko (Ewa) Inc. for Well Nos. 1901-06, 1902-01,-09,-10,-11. Public notice of this application will be published in the Honolulu Star Bulletin issues of January 29, 2010 and February 5, 2010.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by February 22, 2010, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Ryan Imata at 587-0255.

RI:ss
Attachment(s)

Response:

( ) We have no objections or comments
( ) Objections attached
( ) Only comments attached

Contact person: _____________________________ Phone: _____________________________

Signed: _____________________________ Date: _____________________________
January 27, 2010

TO: Morris Atta, Administrator
   Land Division

FROM: Ken C. Kawahara, P.E., Deputy Director
   Commission on Water Resource Management

SUBJECT: Request for Comments
   Water Use Permit Application
   Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application (WUPA No. 884) for Haseko (Ewa) Inc. for Well Nos. 1901-06, 1902-01,-09,-10,-11. Public notice of this application will be published in the Honolulu Star Bulletin issues of January 29, 2010 and February 5, 2010.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by February 22, 2010, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Ryan Imata at 587-0255.

RI:ss
Attachment(s)

Response:

( ) A water lease/permit is required of this applicant and an application for such will be requested by our division.
( ) A water lease/permit is not required of this applicant.
( ) A water lease/permit has been obtained by the applicant through lease no.
( ) Other relevant Land Division rules/regulations, information, or recommendations are attached.
( ) No objections
( ) Other comments:

Contact person: ___________________________ Phone: ___________________________

Signed: ________________________________ Date: ___________________________
Transmitted for your review and comment is a copy of a water use permit application (WUPA No. 884) for Haseko (Ewa) Inc. for Well Nos. 1901-06, 1902-01,-09,-10,-11. Public notice of this application will be published in the Honolulu Star Bulletin issues of January 29, 2010 and February 5, 2010.

We would appreciate your review of the proposed use that is described in the attached application for any conflicts or inconsistencies with the land use designations, plans, policies, programs, or objectives specific to your organization or department only. Please respond by returning this cover memo form by February 22, 2010, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Ryan Imata at 587-0255.

RI:ss
Attachment(s)

Response:

( ) We have no objections or comments
( ) Objections attached
( ) Only comments attached

Contact person: ____________________________ Phone: ____________________________

Signed: ____________________________ Date: ____________________________
Transmitted for your review and comment is a copy of a water use permit application (WUPA No. 884) for Haseko (Ewa) Inc. for Well Nos. 1901-06, 1902-01,-09,-10,-11. Public notice of this application will be published in the Honolulu Star Bulletin issues of January 29, 2010 and February 5, 2010.

We would appreciate your review of the proposed use that is described in the attached application (i.e. line item 6 or Table 1). Specifically, we request that you inform us of the current state land use designation for the TMK parcel, or portion thereof, for the proposed use area(s) and, secondly, whether the current state land use designation is appropriate for the proposed project.

We have attached a TMK map(s) that covers the proposed use area(s). Where water is proposed for use on only a portion of a TMK parcel, or on parcels with multiple zoning, the proposed use area(s) has been clearly delineated on the attached map. Please respond by returning this cover memo along with your review comments by February 22, 2010, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Ryan Imata at 587-0255.

RI: ss
Attachment(s)

Response:

( ) We have no objections or comments
( ) Objections attached
( ) Only comments attached

Contact person: Phone:

Signed: Date:
January 27, 2010

TO: Mr. David Tanoue, Director
   Department of Planning and Permitting
   City and County of Honolulu

FROM: Laura H. Thielen, Chairperson
   Commission on Water Resource Management

SUBJECT: WATER USE PERMIT APPLICATION
   Puuloa Ground Water Management Area, Oahu

For your review and record, we are forwarding a copy of the application (WUPA No. 884) for Haseko (Ewa) Inc. for Well Nos. 1901-06, 1902-01-09, 10, 11, for confirmation of the zoning designation for the proposed uses on the attached application, confirmation of the consistency of the proposed projects with the current zoning designation, and any special management area issues. Public notice of this application will be published in the Honolulu Star Bulletin issues of January 29, 2010 and February 5, 2010. Please respond by returning this cover memo form by February 22, 2010, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Ryan Imata at 587-0255.

RI: ss
Attachment(s)

Response:

( ) The proposed water use(s) is consistent with the current zoning designation(s).

( ) This well project ( ) requires ( ) does not require a SMA. If a SMA is required it ( ) has ( ) has not been approved and ( ) is ( ) is not currently active.

( ) Comments attached

Contact person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
TO: Other Interested Parties
FROM: Ken C. Kawahara, P.E., Deputy Director
Commission on Water Resource Management
SUBJECT: Request for Comments
Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

In addition to serving you notice as required by 174C-52 (a), Hawaii Revised Statutes, we transmit for your review and comment a copy of a water use permit application (WUPA No. 884) for Haseko (Ewa) Inc. for Well Nos. 1901-06, 1902-01,-09,-10,-11. Public notice of this application will be published in the Honolulu Star Bulletin issues of January 29, 2010 and February 5, 2010.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives of the organization or agency that you represent. Written objections should be made in accordance with Section 13-171-18, Hawaii Administrative Rules and must be filed by the February 22, 2010 deadline. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Ryan Imata at 587-0255.

RI:ss
Attachment(s)

Response:

( ) We have no objections or comments
( ) Objections attached
( ) Only comments attached

Contact person: ___________________________ Phone: ___________________________
Signed: ___________________________ Date: ___________________________
<table>
<thead>
<tr>
<th>F YR</th>
<th>APP D</th>
<th>SRC/ OBJ</th>
<th>COST</th>
<th>CTR</th>
<th>PROJECT</th>
<th>PH ACT</th>
<th>AMOUNT</th>
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<td>326</td>
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<td>(1) $25.00 Morihara Lau &amp; Fong LLP</td>
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</table>

REMARKS: LINE (1) WUP No. 784
Ms. Laura H. Thielen, Chairperson
and Members of the Commission
on Water Resource Management
Kalanimoku Building, Room 227
1151 Punchbowl Street
Honolulu, Hawaii 96813

Re: Water Use Permit No. 784 ("WUP #784")
HASEKO (Ewa), Inc. - Request for Modification

Dear Chairperson Thielen and Commissioners:

HASEKO (Ewa), Inc. ("Haseko") submits this application to modify WUP #784 by:

(1) reducing the amount of the allocation from 3.3 mgd to 1.5 mgd (12-MAV);

(2) modifying the location of use to encompass the entire Ocean Pointe/Hoakalei project area; and

(3) identifying the location of use by way of a map and deleting Special Condition b. requiring the reporting of TMK changes.

WUP #784 authorizes the withdrawal of 3.3 mgd of brackish water from the Puuolua Sector of Ewa Caprock Aquifer for dust control, golf course and landscape irrigation.

I. Background

Haseko is owner and developer of the Ocean Pointe/Hoakalei project ("Project") located at the southern edge of the east Ewa Plain. A man-made marina excavated out of fast lands will be the focal point of this 1100-acre multi-use development, which also includes resort, commercial and marine industrial components, an 18-hole Ernie Els signature golf course, and nearly 5000 residences.

Until 1994, a large portion of the 1100-acre Project area was cultivated in sugar cane by Oahu Sugar Company ("OSCo"). To irrigate the sugar cane, OSCo had a water use permit with an allocation for 4.16 mgd. In 1994, as OSCo was ratcheting down its sugar operations and as Haseko was gearing up for construction, OSCo relinquished 1.5 mgd of its agricultural allocation and Haseko obtained a permit for the same amount for golf course and landscape irrigation, maintenance, and dust control. The remaining 2.66 mgd was retained by OSCo for agricultural use. After OSCo's lease terminated at the end of 1994, its 2.66 mgd agricultural water use permit was transferred to Haseko. At the time, Haseko held two water use permits: one for
1.5 mgd for urban types uses (WUP #347), and another for 2.66 mgd for agricultural uses (WUP #192). The allocation for the agricultural water use permit was reduced to 1.8 mgd in 1997.

In 2003, Haseko sought approval to replace EP-27 with a battery of small, shallow wells without changing the allocation amount. Approval was granted administratively, and in the process, the two water use permits were combined into one, WUP #650, with an allocation of 3.3 mgd. Subsequently, in 2006, the Commission on Water Resource Management ("Commission") converted all Ewa caprock water use permits from interim to permanent permits pursuant to a Hawaii Supreme Court opinion in an unrelated case. Haseko's permanent permit was designated WUP #784.

II. Reducing Allocation to 1.5 mgd

WUP #784 carries an allocation of 3.3 mgd. Haseko no longer needs that amount of water and is willing to voluntarily relinquish 1.8 mgd and be left with an allocation of 1.5 mgd.

After OSCo's lease terminated at the end of 1994, Haseko continued to use some of the 1100-acre Project site to grow agricultural crops primarily to prevent the landscape from becoming a dust bowl. As development of the Project and construction progressed, agricultural operations diminished, although some of the land, to this day, continues to be used in a nursery operation that provides plants for the Project. As a result of the decrease in agricultural uses, the amount of water needed for irrigation has also significantly decreased.

Additionally, since 2008, the Hoakalei Golf Course has been receiving from the Honolulu Board of Water Supply up to 600,000 gpd of R-1 water from the Honouliuli wastewater treatment plant.

Today Haseko needs only 1.5 mgd of caprock water to supplement the available R-1 water for golf course irrigation, for other landscape irrigation, and for dust control.

III. Modifying Location of Use

As indicated in Section I, above, WUP #784 has its origins in permits held by OSCo when it was cultivating sugar cane in the area. About two-thirds of the 1100-acre Ocean Pointe/Hoakalei project area used to be cultivated in sugar cane. The remainder of the land was comprised of the shoreline area, a wetland, and some kiawe forest close to the shoreline. When OSCo held the water use permits, the location of use was identified by OSCo field numbers, which, of course, did not include the uncultivated shoreline, wetland and kiawe forest areas. When the permits were transferred or taken over by Haseko, the field numbers were converted to TMKs, but the location of use was not changed.

For years, Haseko incorrectly assumed that the water use permits it held covered the entire 1100-acre Project area. It was in 2008, as Haseko was working with Commission staff in attempting to update TMK numbers that Haseko realized that the location of use authorized by
WUP #784 did not encompass the entire Project area, but instead was limited to the areas previously cultivated by OSCo.

Development will occur throughout the entire 1100-acre Project site (except within the protected wetland area). Water will be needed for dust control, at least, over the entire Project area. Thus, Haseko is requesting that the location of use be modified to encompass the entire Project site, even though the amount of the allocation is being decreased.

III. Identify Location of Use by Map and Delete Special Condition b

Special Condition b. to WUP #784 provides:

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.

When Haseko first acquired the Project site in 1988, there were only a handful of TMK numbers associated with the entire 1100 acres. With every subdivision and consolidation, the TMK numbers change. Today, there are thousands of TMK numbers associated with the Project site, and those numbers continue to change.

Because it would take a lot of time and effort to continually update TMK numbers, Haseko proposes that the location of use be identified with a map of the Project site instead of by TMK numbers (see Exhibit A attached hereto). Should the Commission agree to identify the location of use by way of a map, Special Condition b. would then be irrelevant and unnecessary.

The Commission uses maps to identify locations of use for the Waiahole Ditch permits. In that situation, because the authorized locations of use sometimes constitute only portions of large TMKs, maps are useful to identify the areas where the water allocation may be used.

IV. Criteria for Water Use Permit Modification

Pursuant to HRS § 174C-57(b), “[a]ll permit modification applications shall be treated as initial permit applications and be subject to sections 174C-51 to 174C-56[.]” Under HRS § 174C-53(a), the Commission needs to determine whether the conditions set forth in HRS § 174C-49(a) have been established. As set forth below, Haseko’s application for permit modification meets the requirements of HRS § 174C-49(a).

HRS § 174C-49(a) reads as follows:

Conditions for a permit. (a) To obtain a permit pursuant to this part, the applicant shall establish that the proposed use of water:

1. Can be accommodated with the available water source;
(2) Is a reasonable-beneficial use as defined in section 174C-3;
(3) Will not interfere with any existing legal use of water;
(4) Is consistent with the public interest;
(5) Is consistent with state and county general plans and land use designations;
(6) Is consistent with county land use plans and policies; and
(7) Will not interfere with the rights of the department of Hawaiian home lands as provided in section 221 of the Hawaiian Homes Commission Act.

A. Can Be Accommodated With Available Water Source

This permit modification request includes a proposal to reduce the allocation currently permitted.

B. Is Reasonable-Beneficial

The term “reasonable-beneficial use” is defined in HRS § 174C-3 as “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.”

In granting WUP #784 (or, more precisely, the predecessor permits WUP #192 and WUP #347), the Commission found that the proposed uses were reasonable-beneficial. Since then, agricultural use has diminished (but not completely terminated), but water continues to be used and needed for golf course and other irrigation and dust control. Due to the decrease in agricultural use, Haseko is proposing to decrease its allocation from 3.3 mgd to 1.5 mgd.

Alternative Sources. In accordance with the Commission’s policy of championing the use of reclaimed water, the Hoakalei Golf Course has been receiving from the Honolulu Board of Water Supply (“BWS”) up to 600,000 gpd of R-1 water from the Honouliuli wastewater treatment plant. Under the agreement with BWS, Haseko is obligated to take 600,000 gpd of R-1 water so long as that amount is available. Thus, caprock water is used to supplement R-1 water to the extent that R-1 water is not sufficient to meet daily irrigation needs.

The only other alternative would be to use potable water provided by BWS.

C. Will Not Interfere With Any Existing Legal Use of Water

Although Haseko seeks to expand the location of use, the requested modification also proposes to reduce the amount of the currently permitted allocation. The water will
be withdrawn from the currently permitted sources. Therefore, there should be no adverse impact on any existing legal uses of water.

D. Is Consistent With the Public Interest

Dust control measures during construction are required by the State Department of Health.

The Hoakalei Golf Course is part of the greenbelt that winds through the many developments within secondary urban center. In addition, the golf course serves as retention/detention basins for stormwater flows, thus minimizing the amount of stormwater discharge into the ocean. Irrigating the golf course is essential to fulfilling these purposes.

Using brackish caprock water for irrigation and dust control is in the public interest for it reduces the demand on potable water supplied by BWS.

E. Consistent with State and County General Plans and Land Use Designations

The appropriate land use approvals and entitlements have been obtained for development of the Ocean Pointe/Hoakalei project, including the golf course. Zoning designations within the project site include: A-1 Apartment; A-2 Apartment; B-1 Neighborhood Business; B-2 Community Business; BMX-3 Commercial; I-3 Marina Waterfront; P-2 General (golf course and marina); R-5 Residential; and Resort. (See attached zoning map.)

F. Consistent With County Land Use Plans and Policies

The Ocean Pointe/Hoakalei project is a recognized in the City's Ewa Development Plan ("Ewa DP"). (The currently approved Ewa DP, which dates back to August 1997, denominates the Project as the Ewa Marina Community Development.) As indicated in the Ewa DP, the Hoakalei Golf Course is part of the greenbelt that winds through the many developments within secondary urban center. One of the policies set forth in the Ewa DP is to encourage the use of drainage swales rather than concrete channels to deal with stormwater runoff. Consistent with this policy, the Hoakalei Golf Course, which provides retention/detention basins for stormwater flows, promotes recharge of the caprock aquifer and minimizes the amount of stormwater discharge into the ocean.

G. No Interference with DHHL Rights

The Department of Hawaiian Home Lands ("DHHL") does not have a reservation for Ewa caprock water. Neither does it own any lands downgradient of the EP-27
battery of wells. Therefore, the proposed modification will have no impact on DHHL's rights to water under Section 221 of the Hawaiian Homes Commission Act.

V. Conclusion

Based on the foregoing, Haseko respectfully requests that the Commission approve the modification of WUP #784 by:

(1) reducing the amount of the allocation from 3.3 mgd to 1.5 mgd (12-MAV);

(2) modifying the location of use to encompass the entire Ocean Pointe/Hoakalei project area; and

(3) identifying the location of use by way of a map and deleting Special Condition b. requiring the reporting of TMK changes.

Respectfully submitted,

Yvonne Y. Izu
Attorney for HASEKO (Ewa), Inc.

c: HASEKO (Ewa), Inc.

Attachments:
1. Project area
2. Zoning map
Ocean Pointe Zoning (Nov. 23, 2009)

Legend
Zoning 2009-11-23

- A-1
- A-2
- AG-2
- B-1
- B-2
- BMX-3
- F-1
- I-3
- IMX-1
- P-2
- R-5
- Resort

Prepared For:
HASEKO (Ewa) Inc.

Prepared By:
PLANNING SOLUTIONS

Source:
Honolulu County GIS (Nov. 23, 2009 upload)
For detailed instructions on filling out this application form completely, refer to the attached instructions. Incomplete applications will not be accepted for processing.

The following must be attached before this application is accepted as complete:
- Portion of 7.5-Minute Series USGS topographic map (scale 1:24,000) with source location labeled and include the name of the quad map.
- Property tax map, showing source location referenced to established property boundaries.
- Photograph(s) of the source(s) and location(s) of proposed end use(s), if applicable.

### Applicant Information
- **Name/Company**: HASEKO (Ewa), Inc.
- **Contact Person**: Yvonne Y. Izu, attorney for HASEKO (Ewa), Inc.
- **Mailing Address**: c/o Yvonne Y. Izu, Esq.
  Morihara Lau & Fong, LLP
  841 Bishop Street, Suite 400
  Honolulu, Hawaii 96813
- **Phone**: 526-2888
- **Fax**: 566-0800
- **E-mail**: yizu@moriharagroup.com

### Source Information
- **Island**: Oahu
- **Ground Water Management Area**: Puuloa

### Source Information
- **Existing or Proposed?**: Existing
- **Well Number**: 1901-006
- **Well Name**: Ocean Pointe 4
- **TMK**: 9-1-134-009
- **Sustainable Yield**: 1000 mg/d

### Total Quantity of Water Requested
- **1.5 gallons per day, averaged over 1 year**

### Source Information
- **Landowner/Joint Applicant (if applicable)**: Yvonne Y. Izu, attorney for Landowner
- **Print Name**: Yvonne Y. Izu, attorney for Landowner

### Application Form
- **Application for New Use**
- **Application to Modify WUP No. 784**

### Instructions
- For Item 4, show the location of the proposed use on the same USGS and TMK maps as the proposed source of water (Table 1, column B) of this application.
### PROPOSED NEW USE OR MODIFIED USE INFORMATION

#### 11. TABLE 1: LAND USE CONSISTENCY / EFFICIENCY OF USE
(Attach additional copies, if necessary.)

<table>
<thead>
<tr>
<th>USES THAT REQUIRE POTABLE (DRINKING) WATER</th>
<th>TOTAL POTABLE USE</th>
<th>USES THAT DO NOT REQUIRE POTABLE WATER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation / Dust Control</td>
<td>See attached</td>
<td>See attached</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FORM GWUPA-N (April 28, 2009) Page 2 of 7**
## PROPOSED NEW USE OR MODIFIED USE INFORMATION (continued)

### 12. TABLE 2: IRRIGATION INFORMATION

List all crops that will be grown, including landscape and golf course irrigation uses. Copy Table 2 and attach additional sheets to complete your list, if necessary.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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</tbody>
</table>

**See attached**

- **zone** sector plat parcel
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- **zone** sector plat parcel
- **zone** sector plat parcel
- **zone** sector plat parcel
- **zone** sector plat parcel
- **zone** sector plat parcel
- **zone** sector plat parcel

### Comments (continued from Column I)

Please clearly indicate the crop (i.e., the row in table) these comments relate to.

See attached
13. TABLE 3: ALTERNATIVES ANALYSIS

<table>
<thead>
<tr>
<th>A. Analysis of potable alternatives</th>
<th>B. Analysis of non-potable alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal sources</td>
<td>See attached</td>
</tr>
<tr>
<td>Wastewater reuse</td>
<td>See attached</td>
</tr>
<tr>
<td>Ditch system</td>
<td></td>
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<tr>
<td>Desalinization</td>
<td></td>
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<tr>
<td>Surface water</td>
<td></td>
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<td>Conservation Measures</td>
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<tr>
<td>Other (specify)</td>
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</tr>
</tbody>
</table>

14. PUBLIC INTEREST

§174C-2(C), HRS states: 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.

Explain how the proposed new use(s) in your application are consistent with the public interest.

See attached

15. INTERFERENCE WITH THE RIGHTS OF THE DEPARTMENT OF HAWAIIAN HOME LANDS

Explain how the proposed new use(s) of water will not interfere with the rights of the Department of Hawaiian Home Lands, as provided in section 221 of the Hawaiian Homelands Commission Act.

See attached

16. INTERFERENCE WITH ANY EXISTING LEGAL USES

Explain how the proposed new use(s) of water will not interfere with any other existing legal use(s) of water.

See attached

17. PUBLIC WATER SYSTEM INFORMATION

Check the appropriate box or boxes.

☐ PUC-Regulated Private System / ☐ Non-PUC-Regulated Private System / ☑ Not a Public Water System

☐ Intended dedication to Honolulu Board of Water Supply or to County of Maui, Department of Water Supply.
The Pearl Water Cons. Plan looks good. Does the use sound high?

1.08 mgd = 4000 gpd (2700 cfs)

Does anyone have a table showing use amounts for golf courses across the state? (Units gpd)
\[ 3.3 \text{ mgd} = \frac{1,209.75 \text{ ac-ft/yr}}{270 \text{ ac}} \times \frac{12 \text{ in}}{\text{ ft}} = 1.08 \text{ mgd} \]

\[ 3,696.5 \text{ ac-ft/yr} \times \frac{1}{270 \text{ ac}} \times \frac{12 \text{ in}}{\text{ ft}} = 164 \text{ in/yr} \]

\[ 1,080 \text{ mgd} = 394,200 \text{ mg/yr} = \frac{1,209.75 \text{ ac-ft/yr}}{270 \text{ ac}} \times \frac{12 \text{ in}}{\text{ ft}} = 53.77 \text{ in/yr} \]

1.08 mgd / 270 ac = 4,000 gpd/ac.

\[ 152.5 \text{ ac-ft/yr} \times \frac{325,851 \text{ gals}}{\text{ ac-ft}} = 1,687 \text{ gpd/acre/day} \]

\[ \frac{152.5 \text{ ac-ft/yr}}{365 \text{ days}} \times 80.7 = 1,748 \text{ gpd} \]

U.S. Ave

Pacific 158 ac-ft/yr

\[ \text{a nice round figure. I think reasonable based on U.S. Ave.} \]

\[ \text{Second only to Southern most State and almost most we use} \]

\[ \text{Ocy, we're Southern most State and almost most we use} \]
GOLF COURSE DEVELOPMENT ON OAHU
## EXHIBIT 6

WATER USAGE FOR SELECTED GOLF COURSES ON OAHU

<table>
<thead>
<tr>
<th>GOLF COURSE</th>
<th>ACREAGE</th>
<th>HIGH</th>
<th>LOW</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ALA WAI*</td>
<td>150</td>
<td>1.3 (8,450)</td>
<td>0.05 (317)</td>
<td>0.7 (4,540)</td>
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<tr>
<td>2. TED MAKALENA</td>
<td>150</td>
<td>0.8 (5,210)</td>
<td>0.2 (1,355)</td>
<td>0.5 (3,472)</td>
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<tr>
<td>3. SHERATON MAKAAH COUNTRY CLUB</td>
<td>167</td>
<td>2.3 (13,971)</td>
<td>0.4 (2,617)</td>
<td>1.6 (9,512)</td>
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<td>4. HAWAII KAI** CHAMPIONSHIP AND EXECUTIVE</td>
<td>204</td>
<td>1.9 (9,437)</td>
<td>0.3 (1,351)</td>
<td>1.3 (6,328)</td>
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<tr>
<td>5. MAKAAH VALLEY COUNTRY CLUB</td>
<td>145</td>
<td>1.6 (11,326)</td>
<td>0.6 (4,197)</td>
<td>1.1 (7,391)</td>
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<tr>
<td>6. HONOLULU INTERNATIONAL COUNTRY CLUB</td>
<td>177</td>
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<td>---</td>
<td>1.0 (5,762)</td>
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<tr>
<td>7. WAIALAE COUNTRY CLUB</td>
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<td>---</td>
<td>---</td>
<td>1.0 (7,034)</td>
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</tbody>
</table>

* Does not include water from private wells
** Does not include wastewater used as irrigation source

SOURCE: Board of Water Supply, July 1989
EXHIBIT 6

WATER USAGE FOR SELECTED GOLF COURSES ON OAHU

<table>
<thead>
<tr>
<th>GOLF COURSE</th>
<th>ACREAGE</th>
<th>HIGH</th>
<th>LOW</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ALA WAI*</td>
<td>150</td>
<td>0.4 (2.833)</td>
<td>0.003 (200)</td>
<td>0.2 (1.513)</td>
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<td>2. TED MAKALENA</td>
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<td>0.2 (1.157)</td>
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<td>3. SHERATON MAKAYA COUNTRY CLUB</td>
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<td>0.15 (872)</td>
<td>0.5 (3.170)</td>
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<tr>
<td>4. HAWAII KAI** CHAMPIONSHIP AND EXECUTIVE</td>
<td>204</td>
<td>0.65 (3.145)</td>
<td>0.1 (450)</td>
<td>0.4 (2.100)</td>
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<tr>
<td>5. MAKAYA VALLEY COUNTRY CLUB</td>
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<td>0.55 (3.775)</td>
<td>0.2 (1.400)</td>
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<td>6. HONOLULU INTERNATIONAL COUNTRY CLUB</td>
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<tr>
<td>7. WAIALAE COUNTRY CLUB</td>
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<td>0.34 (2.344)</td>
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</tbody>
</table>

* Does not include water from private wells
** Does not include wastewater used as irrigation source

SOURCE: Board of Water Supply, July 1989
Table 4. Irrigated turfgrass acres, water use, and water use per irrigated turfgrass acre on an average 18-hole golf facility by agronomic region.

<table>
<thead>
<tr>
<th>Agronomic region*</th>
<th>NE</th>
<th>NC</th>
<th>Trans</th>
<th>SE</th>
<th>SW</th>
<th>UW/Mtn</th>
<th>Pac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigated turfgrass acres**</td>
<td>54f</td>
<td>66e</td>
<td>74d</td>
<td>100b</td>
<td>115a</td>
<td>103b</td>
<td>84c</td>
</tr>
<tr>
<td>Water use (acre-feet)**</td>
<td>42.4f</td>
<td>76.7e</td>
<td>78.9e</td>
<td>241.8c</td>
<td>459.0a</td>
<td>300.4b</td>
<td>158.0d</td>
</tr>
<tr>
<td>Water use/irrigated turfgrass acre (acre-feet)</td>
<td>0.8</td>
<td>1.2</td>
<td>1.1</td>
<td>2.4</td>
<td>4.0</td>
<td>2.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Water use/irrigated turfgrass acre (inches)</td>
<td>9.4</td>
<td>13.9</td>
<td>12.8</td>
<td>29.0</td>
<td>47.9</td>
<td>35.0</td>
<td>22.6</td>
</tr>
</tbody>
</table>

* Agronomic regions: NE, Northeast; NC, North Central; Trans, Transition; SE, Southeast; SW, Southwest; UW/Mtn, Upper West/Mountain; Pac, Pacific.

** Within a row, values followed by the same letter are not significantly different from one another. Letters denote significance at the 90% confidence level.

Table 5. Changes in irrigated turfgrass acres on U.S. golf facilities since 2001.

<table>
<thead>
<tr>
<th>Changes in turfgrass acres since 2001</th>
<th>US</th>
<th>NE</th>
<th>NC</th>
<th>Trans</th>
<th>SE</th>
<th>SW</th>
<th>UW/Mtn</th>
<th>Pac</th>
</tr>
</thead>
<tbody>
<tr>
<td>% increased**</td>
<td>25</td>
<td>33a</td>
<td>28ab</td>
<td>25b</td>
<td>18c</td>
<td>16c</td>
<td>26ab</td>
<td>28ab</td>
</tr>
<tr>
<td>Avg. increase (acres)</td>
<td>13.0</td>
<td>14.0</td>
<td>20.5</td>
<td>10.7</td>
<td>5.1</td>
<td>16.7</td>
<td>9.5</td>
<td>7.7</td>
</tr>
<tr>
<td>% stayed the same**</td>
<td>66</td>
<td>60c</td>
<td>66abc</td>
<td>66abc</td>
<td>71a</td>
<td>70ab</td>
<td>63bc</td>
<td>60c</td>
</tr>
<tr>
<td>% decreased**</td>
<td>9</td>
<td>7b</td>
<td>6</td>
<td>9ab</td>
<td>11ab</td>
<td>14a</td>
<td>11ab</td>
<td>12ab</td>
</tr>
<tr>
<td>Avg. decrease (acres)</td>
<td>12.3</td>
<td>9.4</td>
<td>14.1</td>
<td>14.5</td>
<td>10.0</td>
<td>17.9</td>
<td>8.2</td>
<td>12.7</td>
</tr>
</tbody>
</table>

* Agronomic regions: US, United States; NE, Northeast; NC, North Central; Trans, Transition; SE, Southeast; SW, Southwest; UW/Mtn, Upper West/Mountain; Pac, Pacific.

** Within a row, values followed by the same letter are not significantly different from one another. Letters denote significance at the 90% confidence level.
The Environmental Institute for Golf is the philanthropic organization of the Golf Course Superintendents Association of America.
Irrigation Water Use

From 2003-2005, the average total water use for golf course irrigation in the U.S. was estimated to be 2,312,701 acre-feet of water per year. Using water use data nationally, an 18-hole golf course uses an average of 152.5 acre-feet of water per year to irrigate 80.7 acres of turfgrass. This is an average of 1.9 acre-feet of irrigation water per irrigated acre (Figure 7, Appendix Table 6).

One acre-foot or 12 inches of water over one acre equals 325,851 gallons.

Water use figures for 18-hole facilities are based upon the following measures: 50 percent metered, 37 percent estimated, 13 percent both.

50 percent of 18-hole golf facilities are required to report water use volumes to a state or local governing entity.

Figure 7 – Average water use in acre-feet for 18-hole golf facilities in the U.S. by agronomic region (Appendix Table 6).

<table>
<thead>
<tr>
<th>Region</th>
<th>Average Water Use (acre-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southwest</td>
<td>459.0 (a)</td>
</tr>
<tr>
<td>Upper West/Mountain</td>
<td>300.4 (b)</td>
</tr>
<tr>
<td>Southeast</td>
<td>241.8 (c)</td>
</tr>
<tr>
<td>Pacific</td>
<td>158.0 (d)</td>
</tr>
<tr>
<td>U.S. Average</td>
<td>152.5</td>
</tr>
<tr>
<td>Transition</td>
<td>78.9 (e)</td>
</tr>
<tr>
<td>North Central</td>
<td>76.7 (e)</td>
</tr>
<tr>
<td>Northeast</td>
<td>42.4 (f)</td>
</tr>
</tbody>
</table>

Letters denote significance at 90% confidence level.
# Irrigation Water Use Across Agronomic Regions

## Southwest

<table>
<thead>
<tr>
<th><strong>The Southwest agronomic region has the greatest use of irrigation water per acre, the largest irrigated acreage per 18-hole golf facility and uses the second greatest total volume of water per agronomic region.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ An 18-hole facility in the Southwest agronomic region irrigates, on average, 115 acres of turf grass.</td>
</tr>
<tr>
<td>▶ An 18-hole facility in the Southwest agronomic region irrigates with an average 459 acre-feet annually.</td>
</tr>
<tr>
<td>▶ An 18-hole facility in the Southwest agronomic region irrigates with 4 acre-feet (47.9 inches) of water per irrigated turf grass acre annually.</td>
</tr>
</tbody>
</table>

> There are 1,272 golf facilities in the Southwest agronomic region including 9-hole, 18-hole and greater-than-18-hole golf facilities, approximately 7.5 percent of the total nationally.

> The total irrigation water use for all facilities in the Southwest agronomic region is estimated to be 553,442 acre-feet per year.

## North Central

<table>
<thead>
<tr>
<th><strong>The North Central agronomic region has more facilities than any other region. The water use per irrigated acre is comparable to the Transition region and is significantly lower than all other regions except the Northeast. Because of the relatively large number of facilities, it ranks third in the total water use per region.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ An average 18-hole facility in the North Central agronomic region irrigates, on average, 66 acres of turf grass.</td>
</tr>
<tr>
<td>▶ An 18-hole facility in the North Central agronomic region irrigates with an average of 76.7 acre-feet annually.</td>
</tr>
</tbody>
</table>

> An 18-hole facility in the North Central agronomic region irrigates with 1.2 acre-feet (13.9 inches) of water per irrigated turf grass acre annually.

> There are 4,238 golf facilities in the North Central agronomic region including 9-hole, 18-hole and greater-than-18-hole facilities.

> The total irrigation water use for all facilities in the North Central agronomic region is estimated to be 313,037 acre-feet per year.
Mr. Ken Kawahara, Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawai‘i  
P.O. Box 621  
Honolulu, HI 96809

Attention: Mr. Neal Fujii

Subject: Water Use Permit (WUP) 784 (formerly 650)  
Water Conservation Plan for Hoakalei Golf Course

Dear Mr. Kawahara:

On behalf of the Hoakalei Golf Club, we are pleased to submit the enclosed Water Conservation Plan for the Hoakalei Golf Course (formerly Ewa Marina Golf Course). The Plan fulfills Special Condition “h” of Water Use Permit No. 784, which mandates compliance with the CWRM “Conservation Conditions for ‘Ewa Caprock Use Permits”. The basic components of this water conservation plan are compliant with the Conditions. These components include:

1. Reduction in the demand for ground water by the use of recycled (R-1) water.

2. Reduction of the demand for all irrigation water by:
   a. Extensive use of drought-tolerant plants such as kiawe trees,
   b. Mulching of planting and waste areas with organic materials,
   c. Careful formulation of topsoil, design of drainage, and selection of plant types for optimum maintenance of the plantings,
   d. Continuous monitoring, using a state of the art SCADA system, of irrigation water application to minimize runoff and ensure effective maintenance of the system.

The course opened for limited play this January, and all water conservation measures described in the plan are currently in place. Please call me at 550-4539 or Mr. Kalani Voeller, the Golf Course Senior Superintendent, at 282-0181 with any questions you may have.

Sincerely,

Charles L. Morgan, Ph.D.
Senior Environmental Planner

Attachment:
Ewa Marina Golf Course Water Conservation Plan

cc: Ray Kanna, Executive Vice President, Haseko (Ewa), Inc.  
Kalani Voeller, Hoakalei Golf Course Senior Superintendent  
Angela Fong, Esquire, Ishikawa Morihara Lau & Fong
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Appendix A Conservation Conditions, Ewa Caprock Water Use Permits
Appendix B Summary of State Department of Health’s Guidelines for Use of Reclaimed Water
EWA MARINA GOLF COURSE
WATER CONSERVATION PLAN

1.0 INTRODUCTION

The Ewa Marina Golf Course will be constructed on approximately 270 acres of land along the mauka side of HASEKO (Ewa), Inc.’s 1,100-acre Ewa Marina Community project (Figure 1). The course is being developed independently of the marina from which the project derives its name. Construction of the course is slated to begin in 1996 and will continue for approximately two years.

This document was prepared pursuant to directives from the Commission on Water Resource Management to all users of Ewa caprock water (Appendix A). It describes water conservation measures that will be implemented during the design and operation of the proposed golf course. The discussion begins with a brief description of the environmental setting; emphasis is placed on aspects of the natural environment relevant to golf course irrigation needs and irrigation system design.

2.0 SITE DESCRIPTION

The proposed Ewa Marina Golf Course (the “site”) will be a 27-hole championship course located within the Ewa Marina community development on the Ewa plain of Oahu. It is surrounded by Barbers Point Naval Air Station and its golf course to the west and northwest, cane land (to be developed as housing and a golf course by Gentry) to the north, the Hawaii Prince Golf Course to the east (across Fort Weaver Road), and the proposed Ewa Marina and Ewa Beach residential area to the east and south. The site was cultivated for sugarcane until the spring of 1995; it is now fallow land overgrown with weeds.

3.0 NATURAL SETTING

3.1 Climate

Hawaii is at the northern extreme of the tropical climate zone, within a belt of cooling northeasterly trade winds. The climate is mild throughout the year, with average monthly air temperature ranging from 72.4°F to 79.4°. The maximum and minimum temperatures of record at Honolulu International Airport (only six miles east of the site) are 94°F and 43°F, respectively (Armstrong, 1973). Northeasterly trade winds are common over Oahu at all times of the year, but are more persistent in summer than in winter. At the airport, trade wind frequency is about 65 percent, with wind speeds of 4 to 24 mph (Armstrong, 1973). Moderate to strong southerly winds associated with kona frontal passages are dominant from November through March.
Annual rainfall in the Hawaiian Islands is highly variable and is dependent upon altitude and leeward or windward location. The site is in leeward Oahu at no more than 25 feet above mean sea level (+25 msl). Its annual rainfall over the past 40 years averaged 21 inches (CDM, 1993). Winter is typically wetter than summer. Average January rainfall in Ewa is 3.79 inches, and average June rainfall is 0.23 inches. With an average annual pan evaporation rate of approximately 80 inches per year (CDM, 1993), the rate of evapotranspiration in Ewa is nearly four times the average annual rainfall.

3.2 Geology and Soil

Bedrock at the site is highly permeable, pitted coralline (reef) rock mixed with alluvium; it is locally known as "caprock." The caprock is underlain by basalt at least 500 feet below ground surface (Macdonald et al., 1983). Both rock types function as aquifers. The deep basalt aquifer is separated from the caprock aquifer by an impermeable layer of clay. The upper, caprock aquifer is brackish and is recharged principally by rainfall. Until recently, it was also recharged by irrigation return water from sugarcane cultivation. Salinity ranges from 800 to 1000 parts per million (ppm) chloride (Murdoch and Green, 1994). The water table has a head of approximately 1.5 feet and is about 22 feet below grade at the site. Groundwater flow in the caprock aquifer is south towards the ocean (TNWRE, 1991). This aquifer has been pumped heavily over the last century by sugarcane irrigation methods. The caprock aquifer will be used for golf course irrigation.

Soils at the site consist of 6 to 50 inches of reddish-brown silty clay loam. According to the Soil Conservation Service, 6 to 24 inches of sugarcane waste mixed with crushed coral dredge spoils were used as fill in various portions of the site (SCS, 1972). All site soil exhibits moderate permeability, slow runoff, and slight erosion hazard.

During site development, coral outcrop at the west end of the site will be filled with soils excavated from other portions of the site. Topsoil will be added to provide suitable turf rooting depth.

3.3 Topography and Drainage

The topography of the Ewa plain is relatively level, with an average gradient toward the ocean of less than one percent. Elevations at the site range between +10 and +23 msl. The combination of low relief, low rainfall, and permeable soil and rock results in minimal surface drainage. There is no existing storm drain at the site. Stormwater drains directly into the underlying coralline rock or runs across the site to drain into a sinkhole in the rock.
3.4 Vegetation

Only plants adapted to low rainfall conditions flourish on the Ewa plain. Until the spring of 1995, vegetation at the site was dominated by sugarcane cultivated by Oahu Sugar Company with heavy irrigation from the caprock and basalt aquifers. Surrounding vegetation would normally consist of koa haole, kiawe, and associated underbrush. The last sugarcane crop has been harvested, and the site is now fallow, with miscellaneous grasses and shrubs growing sporadically in the old cane fields.

4.0 SOURCES OF WATER SUPPLY

The Ewa Marina Golf Course will use potable water for domestic water and nonpotable water for irrigation.

4.1 Potable Water

An *Ewa Water Master Plan* (1987) approved by the Board of Water Supply (BWS) has allocated 3.2937 million gallons per day (mgd) of potable water from the BWS system for Ewa Marina (Tyrone, 1991). The golf course clubhouse and associated domestic water uses will utilize an estimated 40,000 to 50,000 gpd of that allocation, which will be supplied via the BWS Waianae District water system (Tyrone, 1991). Potable water will not be used for golf course irrigation.

4.2 Nonpotable Water

Consistent with State and City policies, the Ewa Marina Golf Course is committed to using nonpotable water for irrigation purposes. Potential sources of nonpotable water include the Ewa caprock aquifer, reclaimed water, and desalinized seawater. The caprock aquifer is the preferred nonpotable source; reclaimed water will be used if this becomes unfeasible. Desalination is too costly at the present time to be a viable alternative.

4.2.1 Caprock Aquifer Water

The Ewa Marina Golf Course is expected to use about 1.35 mgd of nonpotable groundwater from the caprock aquifer (Tyrone, 1991). This water will come from the irrigation well and pump station (Well No. 3-1902-01, also known as EP27). This skimming well was installed by Oahu Sugar Company in 1964 and until recently was used to irrigate sugarcane at the site. Over the entire Ewa Marina project, the change from sugarcane cultivation to golf course and landscape irrigation will reduce pumping from the caprock aquifer by approximately 5.0 mgd.
4.2.2 Reclaimed Water

Wastewater treatment plant effluent may be reused—or "reclaimed"—for irrigation, conserving existing groundwater resources. New DOH regulations regulate the use of reclaimed water (Appendix B). Reclaimed water, for the purpose of this report, is wastewater treatment plant effluent. The Honouliuli wastewater treatment plant is presently the only public source of reclaimed water in the Ewa Plain. If caprock water sources were not available in sufficient quantity (e.g., if salinity in the caprock aquifer were to rise above usable levels), reclaimed water would become the most economically viable source at the site.

DOH guidelines for the use of effluent are included in Chapter 11-62-25 of the Hawaii Revised Statutes. The main points are summarized here to indicate the type and magnitude of restrictions on effluent reuse.

Reclaimed water under the DOH regulations is classified as follows:

- **R-1**: Virtually pathogen-free effluent
- **R-2**: Disinfected secondary effluent
- **R-3**: Undisinfected secondary effluent

The Honouliuli Wastewater Treatment Plant will provide Class R-2 reclaimed water.

Regulatory requirements have been proposed relative to design, operation, and maintenance of facilities for reclaimed water. Water used to irrigate golf courses and landscaped areas may be Class R-1, R-2, or R-3. The following restrictions apply, however:

Golf courses associated with residences:

- **R-1**: Any type of irrigation system
- **R-2**: Subsurface irrigation only

Restricted access golf courses:

- **R-1**: Any type of irrigation system
- **R-2**: Subsurface irrigation only

Non-edible vegetation and freeway landscaping with limited public access:

- **R-1 and R-2**: Any type of irrigation system
- **R-3**: Subsurface irrigation only
4.3 Evaluation of Nonpotable Water Supply Alternatives

Various water sources were considered for irrigation of the Ewa Marina Golf Course. Use of potable water was ruled out. Brackish water from the caprock aquifer is the preferred source, because it is a proven resource for golf course irrigation. Turf species will be selected for tolerance of existing salinity of the caprock water (see Section 5.1).

However, there is a possibility of increased salinity in the aquifer over time, due to the loss of freshwater recharge from sugarcane irrigation. If salinity were to rise above acceptable levels, reclaimed wastewater would be a preferred source of irrigation water.

Therefore, it is important to minimize water use through conservation measures. Such measures are discussed in Section 5.

5.0 WATER CONSERVATION MEASURES

Population growth and resultant development, especially in the relatively dry Ewa plain, have acutely increased awareness of the high value of water and the need to conserve it. Although potable water use at the golf course represents only a tiny fraction of total water use, low-flow plumbing fixtures will be installed and guests will be invited to cooperate in conserving potable water.

Golf course irrigation water use can be minimized by three primary practices. The first is selection and maintenance of plant materials and plumbing fixtures with the lowest water requirements. The second is providing necessary water using the most efficient possible irrigation system and practices. The third is maximum possible use of nonpotable and reclaimed water. As discussed below, selection of turfgrass and other plant materials, golf course design, and operation and maintenance will be undertaken with all of these factors in mind.

5.1 Selection and Maintenance of Plant Materials

The amount of water needed to maintain plant health varies widely among different species of turfgrass and other plants typically used on golf courses. In order to minimize water use at the proposed Ewa Marina Golf Course, plants with relatively low water use will be selected. Salt-tolerant species will be preferred, to maximize use of the brackish caprock water and to minimize the need for fertilizers and biocides. The final choice of turfgrass species will not be made until construction plans are being prepared for the golf course. However, the following species with proven ability to grow well under the anticipated conditions are being considered:
### Trees
- Sea Grape
- Silver Buttonwood
- Royal Poinciana
- Indian Coral
- Beach Heliotrope
- Milo
- Monkey Pod
- Paperbark

### Shrubs
- Canna Lily
- Carissa (Natal Plum)
- Spiderlily
- Lantana
- Naupaka
- Hibiscus

### Grasses
- Saint Augustine
- Centipede
- Seashore Paspallum
- Zoysin (Zoysin japonica)
- Hybrid Bermuda

---

Water use can also be reduced through a variety of horticultural practices. For example, many plants require more water during their early growth stages and less water once they are well established. This is due to a number of factors, including the additional ground shading provided by mature foliage, the effect fully grown plants have on near-ground wind speeds (and, therefore, on evaporation rates), and the lower photosynthetic rate that occurs once plantings have matured. The operators of the Ewa Marina Golf Course will carefully maintain plant materials at the golf course to ensure the longest feasible life, thereby minimizing the maturation period during which higher-than-average watering rates are needed.

Trees and other landscaping plantings that will be used on the Ewa Marina Golf Course and in the landscaping surrounding the entrance driveway, the clubhouse, and other golf course facilities, will be mulched with organic material to minimize water loss from the area immediately surrounding them.

### 5.2 Irrigation System Design and Operation

The Ewa Marina Golf Course irrigation system will be designed and operated to eliminate unnecessary water use, in accordance with Condition 2(b) of the Conservation Conditions, Ewa Caprock Water Use Permits (Appendix A). The overall approach, including physical design features and irrigation management policies and practices, is discussed below.

#### 5.2.1 Irrigation System Design

The irrigation system will include many features that help avoid unnecessary water use. The most important of these are listed below:

- Sprinkler heads will be carefully spaced to ensure even application of irrigation water, thereby avoiding wasteful double-coverage of any areas.
Sprinkler heads will be selected which perform well under the sometimes windy conditions that prevail at the site; this will maximize the volume of irrigation water which actually reaches the turf.

Sprinkler heads which minimize clogging will be selected to ensure that the water needs of plants can be met without over-watering some areas.

The irrigation control system will provide information on temperature, relative humidity, wind speed and, most importantly, soil moisture, to the irrigation manager. Tensiometers and/or other devices for measuring soil moisture will be located at numerous locations. This will provide the golf course manager with information needed to adjust irrigation water application rates so that they are closely aligned with each area's needs.

Meters will be located strategically throughout the system to assist in the identification of unusual water use patterns and leaks.

Irrigation water storage ponds will be designed to limit evaporative losses. To the extent practicable, this will be accomplished by maintaining adequate water depth and minimizing the water surface area. Where appropriate, storage ponds will be sited in conjunction with vegetative screens to reduce the wind speed across the pond surfaces and to provide shade (further minimizing evaporation).

The irrigation system will be designed to facilitate the use of reclaimed water if that should become necessary.

5.2.2 Irrigation Practices and Maintenance

Irrigation water will be applied to the golf course in a fashion which avoids waste. Factors such as temperature, wind, insolation, forecast precipitation, and the water-holding capacity of the soil will be considered in making the decision. Specific guidelines include the following:

Irrigation water will be applied only to the extent necessary to maintain adequate soil moisture for healthy plant growth. Weather and soil moisture monitoring devices described above will provide the information needed to accomplish this objective.

Except as needed to prevent plant damage, the course will be irrigated only during the late evening and early morning hours. This is the period when irrigation is most effective from an agronomic standpoint and when potential losses to the atmosphere are lowest.

To the extent practicable, the turf will be irrigated only when wind speed is in the design range of the sprinkler system. This will prevent unnecessary drift losses.
Increased irrigation water usage can result from a number of factors, including normal wear, debris clogging sprinkler nozzles, accidental damage to sprinkler heads or piping that result in leaks, leaking storage ponds, and other factors. Unnecessary water use from these will be controlled by the following measures:

- The system will be inspected regularly while in operation to detect broken or malfunctioning sprinkler heads, reduced coverage resulting from vegetation growth, poorly programmed control systems, and other deficiencies. Correction of these deficiencies will be made a maintenance priority.

- Water meters located throughout the irrigation system will be read regularly to track water use rates over time; unusual patterns indicative of leaks or other problems will be investigated, and corrective action will be taken as necessary.

- The irrigation system will be checked regularly to ensure that it has not been tampered with and that settings designed to conserve water have not been altered by the staff or others.

The operators of the Ewa Marina Golf Course will emphasize the need for careful and wise water use practices through a systematic program of staff education and training. Staff will be made aware of Ewa Marina’s conservation goals and the measures taken to achieve them. Staff will be encouraged to identify improvements in irrigation facilities and/or practices that could further reduce water use. Examples of water conservation techniques that will be covered by the training include:

- The use of sweeping in lieu of hosing for cleaning;

- The use of controllable nozzles on all hoses to ensure that they are shut off when not being used for the intended purpose; and

- The use of high-pressure/low volume systems for cleaning and other uses, where this is appropriate.

The staff will be thoroughly trained in water conservation techniques. Their full participation and support in implementing water conservation measures will be encouraged through incentives that reward wise water use practices. Supervisors and management will be instructed to solicit and act upon water-saving recommendations made by the field staff.
6.0 REFERENCES


FIGURE 1
Site Location
APPENDIX A
Conservation Conditions, Ewa Caprock Water Use Permits
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.
   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.
   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
APPENDIX B

Summary of State Department of Health's Guidelines for Use of Reclaimed Water
GUIDELINES FOR THE USE OF RECLAIMED WATER

The information summarized in this Appendix is based on the Hawaii Department of Health (DOH) Guidelines For the Treatment and Use of Reclaimed Water dated November 22, 1993. The intent of the regulations is to protect public health, prevent degradation of aquifers and surface waters, and to facilitate and delineate use of reclaimed water. DOH allowable uses for reclaimed water are summarized in Table C-1. The items summarized herein are those required for submittal to DOH for approval of effluent reuse. The primary items are listed below and further detailed in the remainder of this Appendix.

A. Basis of Design Report for Reclamation Treatment Facility
B. Engineering Design Report for Reclamation Treatment Facility
C. Construction Plans for Reclamation Treatment Facility
D. Basis of Design Report for Water Reclamation Reuse
E. Engineering Design Report for Water Reclamation Reuse
F. Construction Plans for Water Reclamation Reuse

A. BASIS OF DESIGN REPORT FOR RECLAMATION TREATMENT FACILITY

This report requires:

1. Population and flow projections;
2. Wastewater characterization, including wastewater, effluent, and non­domestic waste;
3. Optimization for coagulants and polymers;
4. Water reclamation site selection, including existing and proposed collection systems, existing and proposed zoning and land use, wind rose, land availability, location with respect to floor plan, soil characteristics, geology, and topography;
5. Development and evaluation of treatment alternatives, which address treatment levels compatible with reuse proposals and unit processes with respect to hydraulic and wastewater loadings;
6. An institution plan, including development of reclamation standards, metering program, rates and charges, inspection program to assure
conformance to plans, inspection protocol and standards, regulations and policies regarding cross connections, sewers, and industrial pretreatment, and identifying the owner and entity with authority over work.

B. ENGINEERING DESIGN REPORT FOR RECLAMATION TREATMENT FACILITY

This report is to include:

1. Summary of "Basis of Design Report";

2. Selection of treatment processes, including schematics of the treatment train, descriptions and calculations for significant treatment processes, mass balances, and staging schedules of future changes;

3. Descriptions of how each of the "Treatment Design Parameters" contained in Chapter IV of the Guidelines are incorporated into the facility design, including secondary treatment, coagulation, filtration, disinfection, alarms, power supply, flexibility, reliability, storage impoundments, and emergency backup systems.

4. Development of an operations plan which incorporates intended design parameters, operation parameters, and the training of personnel to reliably produce the optimal water quality for the designated product level;

5. A treatment monitoring program which includes frequency and location of sampling.

C. CONSTRUCTION PLANS FOR RECLAMATION TREATMENT FACILITY

Required submittals include:

1. General layout plan: location and size of facility, site improvements, schematic flow diagrams, piping, hydraulic profiles, elevations of high and low water levels, requirements of Section 12.3.1 (Chapter 10 - "Plans of Wastewater Pump Station-General Layout"), bench mark elevation, and basis of bearings with description;

2. Detailed construction drawings: requirements of Section 12.3.2 (Chapter 10 - "Plans of Wastewater Pump Station-Details Plan"), location, dimensions, and elevations of facility units, and type, size, pertinent features, and rated capacity of all pumps, blowers, motors, and other mechanical devices.
D. BASIS OF DESIGN REPORT FOR WATER RECLAMATION REUSE

This report is to include:

1. Descriptions of the project area, properties of the raw and reclaimed wastewater, supplemental water supply, and transmission and distribution systems. Project area boundaries, present and anticipated land use within one mile of site boundaries, and project area drainage and soil survey are required. Data must be collected on the maximum daily permeability rate, design application rate, water balance, macro nutrient balance, total dissolved solids balance, and other constituents like heavy metals. Further, a vegetation cover monitoring and maintenance plan, and consumptive rates of water, nitrogen, phosphorus, and potassium are needed.

2. A Monitoring Plan which includes establishment of a baseline groundwater and coastal water quality, and a monitoring schedule (the frequency and type of monitoring depend on project location, depth to groundwater, etc.);

3. A Project Evaluation Plan which assesses the overall long-term effects of the proposed project on environmental resources in the area. The evaluation is to include changes in water table elevations due to natural fluctuations and application of reclaimed water, prediction of the rate and direction of movement of the applied water, and changes in the area associated with the project.

E. ENGINEERING DESIGN REPORT FOR WATER RECLAMATION REUSE

This report requires:

1. Irrigation Plan, which delineates the methods and controls to be used in the irrigation system such that no runoff or ponding will occur. The irrigation plan shall minimally describe the following components:

   a. The exact boundaries of the proposed use area, and delineated irrigation areas within these boundaries;

   b. Amount and type of reclaimed water available for irrigation and the associated maximum and minimum average gallons per day;

   c. Location and characteristics of the transmission line from the reclamation treatment facility to the proposed use area or storage reservoir;
d. Design data for storage reservoirs or impoundments (if needed);

e. All pertinent data for materials use in the system including types and size of pipes, meters, pumps, valves, and sprinklers; sprinkler pattern, height, and radius; flow, application rates, and periods; operating pressure, uniformity coefficient of irrigation distribution, and data on surface irrigation systems where used;

f. Identification of measures to prevent runoff to areas not under owner's control;

g. Location plan for area drinking water fountains.

2. Management Reuse Plan, which establishes and delineates responsibilities of operation and maintenance. This includes procedures and restrictions for distributors and users, operation criteria for irrigation, quality control, and provisions for a contingency plan that shall identify actions and precautions to be taken to protect public health in the event of a non-approved use;

3. Public Education Plan, to inform persons likely to come in contact with reclamation water, including signage, fencing, advisories, etc;

4. Employee Training Plan;

5. Vector Control Plan, which establishes conditions necessary to limit mosquito production in impoundments, conveyance facilities, and wetlands;


F. CONSTRUCTION PLANS FOR WATER RECLAMATION REUSE

The plans are to detail the piping system, including irrigation components. They are generally to conform to the requirements of Section 12 "Construction Plans" of Chapter 10, Design Standards of the Division of Wastewater Management, Vol. 1, except for section 12.2 which will be substituted by Section 9 - Construction Plans, Water System Standards. Additional details include a bench mark, bearings, and color coding of pipes.

G. OTHER SUBMITTALS

1. An Operations and Maintenance Manual is required to ensure that all equipment is kept in a reliable operating condition. A written statement is needed from the engineer responsible for the Operation and Maintenance
Manual that all applicable effluent requirements are met by operating under manual guidelines.

2. Contingency Plan, to be designed to assure that inadequately treated reclaimed water is not delivered to the user. The Contingency Plan shall include:

   a. A list of conditions which would require an immediate diversion to take place;

   b. A description of the diversion procedures;

   c. Designation of the diversion system components. If storage basins are used, they must be sized to prevent any overflows or discharges of effluent when the irrigation system is not in operation or when effluent quantities exceed the irrigation requirements, only basins with impervious impoundments are allowed. A minimum emergency storage of 20 days should be provided unless demonstrated otherwise. The system storage capacity should proved adequate retention under adverse weather conditions, based on a 50-year storm recurrence interval.

   d. A plan for the disposal of any inadequately treated effluent. Reclaimed water produced at the treatment facility that fails to meet the criteria established in the guidelines is not to be discharged into the system storage or to the distribution system. Substandard reclaimed water shall be either stored for subsequent-additional treatment or shall be discharged to another reuse system requiring lower levels of treatment or a DOH approved effluent disposal facility.

   e. A plan for notifying the reclaimed water user, DOH Wastewater Branch, and other appropriate agencies.

3. Compliance Report and Submittals:

The items include:

   a. Conforming to the Sampling and Analysis Plan with submittal to DOH on a regular basis.
b. An annual report to DOH describing the quality and quantity of water reclaimed, method of irrigation and areas irrigated, rates of application, total application and climatic conditions, corrective actions taken, and monitoring reports.

c. Monthly operating records to be filed with DOH.

d. Inspection, supervision, employee training and record keeping requirements for operation of the system.

There are also infrastructure requirements for irrigation systems. Cross connection control must be provided for the reclaimed water system where the supply is supplemented with potable water supply or from irrigation wells. Below grade piping separations and concrete jacketing requirements apply to reclaimed water and potable water lines. All reclaimed water piping, valves, and outlets are to be permanently labeled to differentiate them from potable or other water.
Table C-1: Summary of Suitable Uses for Reclaimed Water

<table>
<thead>
<tr>
<th>SUITABLE USES OF RECLAIMED WATER</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRRIGATION: (S)pray, (D)rip &amp; Surface, (S(U)burface, (A)ll = S D &amp; U, Spray with (B)uffer, (N)ot allowed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golf course landscapes</td>
<td>A</td>
<td>UB</td>
<td>N</td>
</tr>
<tr>
<td>Freeway and cemetery landscapes</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Parks, elementary schoolyards, athletic fields and landscapes around some residential property</td>
<td>A</td>
<td>U</td>
<td>N</td>
</tr>
<tr>
<td>Roadside and median landscapes</td>
<td>A</td>
<td>UB</td>
<td>N</td>
</tr>
<tr>
<td>Non-edible vegetation in areas with limited public exposure</td>
<td>A</td>
<td>DUB</td>
<td>U</td>
</tr>
<tr>
<td>Sod farms</td>
<td>A</td>
<td>DUB</td>
<td>U</td>
</tr>
<tr>
<td>Ornamental plants for commercial use</td>
<td>A</td>
<td>DUB</td>
<td>U</td>
</tr>
<tr>
<td>Food crops above ground &amp; not contacted by irrigation</td>
<td>A</td>
<td>U</td>
<td>N</td>
</tr>
<tr>
<td>Pastures for milking and other animals</td>
<td>A</td>
<td>U</td>
<td>N</td>
</tr>
<tr>
<td>Fodder, fiber, and seed crops not eaten by humans</td>
<td>A</td>
<td>DUB</td>
<td>DU</td>
</tr>
<tr>
<td>Orchards and vineyards bearing food crops</td>
<td>A</td>
<td>DU</td>
<td>DU</td>
</tr>
<tr>
<td>Orchards and vineyards not bearing food crops during irrigation</td>
<td>A</td>
<td>DUB</td>
<td>DU</td>
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<tr>
<td>Timber and trees not bearing food crops</td>
<td>A</td>
<td>DUB</td>
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<tr>
<td>Food crops undergoing commercial pathogen destroying process before consumption</td>
<td>A</td>
<td>DUB</td>
<td>DU</td>
</tr>
<tr>
<td>SUPPLY TO IMPOUNDMENTS: (A)llowed (N)ot allowed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restricted recreational impoundments</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Basins at fish hatcheries</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Landscape impoundments without decorative fountain</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Landscape impoundments with decorative fountain</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUITABLE USES OF RECLAIMED WATER</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPPLY TO OTHER USES: (A)llowed (N)ot allowed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flushing toilets and urnals</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Fire fighting</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Commercial and public laundries</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Cooling saws while cutting pavement</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Decorative fountains</td>
<td>A</td>
<td>N</td>
<td>N</td>
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<tr>
<td>Washing yards, lots and sidewalks</td>
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<td>N</td>
<td>N</td>
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<tr>
<td>Flushing sanitary sewers</td>
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<td>A</td>
<td>N</td>
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<tr>
<td>High pressure water blasting to clean surfaces</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Industrial process without exposure of workers</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Industrial process with exposure of workers</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Cooling or air conditioning system without tower, evaporative condenser, spraying or other features that emit vapor or droplets</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Industrial boiler feed</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Water jetting for consolidation of backfill material around potable water piping during water shortages</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Water jetting for consolidation of backfill material around piping for reclaimed water, sewage, storm drainage, and gas and electrical conduits</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Washing aggregate and making concrete</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Dampening roads and other surfaces for dust control</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Dampening brushes and street surfaces in street sweeping</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
</tbody>
</table>
Ms. Yvonne Y. Izu, Esq.
Morihara Lau & Fong LLP
400 Davies Pacific Center
841 Bishop Street
Honolulu, HI 96813

Dear Ms. Izu:

Request for Variance from Chloride Limit
HASEKO (Ewa), Inc., Water Use Permit No. 784
EP-27 Battery of Wells – Well Nos. 1901-06, 1902-01, and 1902-09 to -11

We received, on July 16, 2008, the letter you sent on behalf of Haseko (Ewa), Inc.
(Haseko) requesting a variance from the 1,000 mg/l chloride limit for the EP-27 battery of wells,
which draws brackish water from the Puuloa Aquifer System. The EP-27 battery is near the
ocean, there are no wells downgradient or other water users downgradient of the EP-27 battery,
and Haseko owns the land from the well site to the shoreline.

The Commission on Water Resource Management’s (Commission) July 18, 2001, action
to extend interim caprock water use permits delegated the authority to the Chairperson to
approve variances from the chloride limit, with consideration to a well’s proximity to the ocean
and to other wells, it’s history of chloride concentrations and pumpage, the availability of
alternative sources of water, and the possibility of conversion to another source. Under this
authority, on March 12, 2003, the Commission granted a variance from the chloride limit for
Well No. 1902-01. That variance was to expire six months after the first date of reclaimed water
delivery to Haseko’s project area. Our approval of that variance was based on the observation
that chloride levels in Well No. 1902-01 fluctuated around the 1,000 mg/l for two years of
record, sometimes exceeding this limit, and because chloride levels above this limit are not likely
to adversely impact other ground water users in the area.

The EP-27 battery was expanded in 2003 by the construction of Well Nos. 1902-09 to -11
and Well No. 1901-06. Data from the EP-27 battery show that chloride levels have fluctuated
around 1,000 mg/l and have frequently risen above 1,000 mg/l. As you have noted, since the
cessation of sugar cane agriculture on the Ewa plain, the chloride concentration of well water in
the area has gradually increased, as was expected with the loss of imported basal irrigation water.
Ms. Yvonne Izu
Page 2
October 1, 2008

We understand that Haseko has entered into an agreement with the Honolulu Board of
Water Supply (HBWS) to provide reclaimed water from the Honolulu Wastewater Reclamation
Plant to supply nonpotable reclaimed water (R-1 water) for Haseko's development around the
Ewa Marina project. When we met with you on July 3, 2008 you stated that, in early 2008,
Haseko started using up to 600,000 gallons per day of R-1 water for golf course irrigation.
However, the amount of R-1 water available to Haseko is not sufficient to supply all of the
project's nonpotable water needs. Consequently, Haseko continues to rely on the EP-27 battery
to meet its total irrigation and dust control water use needs. If Haseko is required to stop
pumping when chloride levels exceed 1,000 mg/l, the only alternative would be to use potable
water from the HBWS municipal system to supplement the available R-1 water supply and meet
its water demands. This alternative would not result in the most efficient use of available water
resources.

For the reasons stated above and in accordance with our delegated authority, Haseko's
request for a variance from the 1,000 mg/l chloride limit is approved. The variance will expire,
unless otherwise extended by the Commission, on the date when the marina begins operation. In
the event Haseko requires the term of this variance to be extended, a request shall be made in
writing at least 180 days before the marina is scheduled to begin operating.

If you have questions or to discuss our comments and questions, please call Denise Mills
of the Commission staff at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DM:ss

c: HASEKO (Ewa), Inc.
Ms. Laura Thielen, Chairperson  
Mr. Ken Kawahara, Deputy Director  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, Hawaii 96809  

Dear Chairperson Thielen and Mr. Kawahara:

HASEKO (Ewa), Inc. (Haseko) is requesting a variance from the 1,000 mg/l chloride limit for the EP 27 Battery of wells (Well Nos. 1901-06, 1902-01, -09, -10, -11) in the Puuloa Aquifer System, Ewa Caprock, O‘ahu.

The Commission on Water Resource Management, on July 18, 2001, delegated to Chairperson the authority to approve variances from the chloride limit with consideration of the well’s proximity to the ocean and to other wells, its history of chloride pumpage, the availability of alternative sources of water and possibility for conversion.

The EP 27 Battery is near the ocean; there are no other wells downgradient of these wells. Haseko owns the land from the well site to the ocean. Therefore, it is highly unlikely that anyone else will be adversely affected by the granting of this variance.

Since the cessation of sugarcane agriculture on the Ewa plain, the chloride concentration of caprock water at this well site has gradually increased, as was expected with the loss of imported basal irrigation water. Although the most recent data from the EP 27 Battery show chloride levels slightly below 1000 mg/l, the level has fluctuated and frequently risen above the 1000 mg/l chloride limit in the past.

Haseko began using R-1 water from the Honolulu Board of Water Supply to irrigate its golf course earlier this year. Pumping from the EP 27 Battery has decreased considerably with the availability of R-1 water. Nevertheless, because the amount of R-1 water available to Haseko is not sufficient to supply all of the project’s non-potable water needs, Haseko continues to rely on caprock water from the EP 27 Battery. Should Haseko be required to halt pumping when chloride levels exceed 1000 mg/l, the only alternative would be to use potable water to the extent that need exceeds R-1 availability.
Your favorable consideration of this request is greatly appreciated. Should you have any questions, please feel free to contact me.

Very truly yours,

Yvonne Y. Izu
Attorney for HASEKO (Ewa), Inc.

Cc: Haseko
See letter requesting corrections from Can. need to verify no "new" expanded TMK's added (otherwise modification is required). More info & clarification of Table attached showing TMK info in MLS db & questions noted.

Please update transfer request date in WVP database for T84 ("received" field).
Ms. Yvonne Y. Izu, Esq.
Morihara Lau & Fong LLP
400 Davies Pacific Center
841 Bishop Street
Honolulu, HI 96813

Dear Ms. Izu:

HASEKO (Ewa), Inc., Water Use Permit No. 784
Well Nos. 1901-06, 1902-01, 1902-09 to -11

We have reviewed the updated tax map key (TMK) information you provided in your letter, dated July 7, 2008, for HASEKO (Ewa), Inc.'s urban and other nonagricultural water uses allowed under Water Use Permit No. 784. We are unable to verify some of the information you provided and require additional information to update our records. The following specific issues need to be resolved before we can update our records.

1. **TMK 9-1-134:012 and 013 (portions of each)** – What is the area (in acres or square feet) of the portions of these parcels where water is used for golf course irrigation?

2. **TMK 9-1-134:007, 012, and 013 (portions of each)** – What is the area (in acres or square feet) of the portions of these parcels where water is used for dust control?

3. **TMK 9-1-011:001 to 007** – These parcels are within plat 11, and were not included in the original water use permits issued to the Oahu Sugar Company or, subsequently, to HASEKO. A water use permit modification is required to include these parcels among the permitted use TMKs for the Ewa Marina project.

4. **TMK 9-1-123:116 to 104**

   a. Please verify the parcel number sequence provided in your letter. Tentatively, we have interpreted this sequence as parcels 9-1-123:104 to 116; however, our research suggests that the parcel numbering sequence could be 9-1-123:116 to 134, which are located within a cluster on Kaiko Street. Please verify the parcel information and provide the correct TMKs for the parcels within plat 123 where water is used for dust control.
b. Our research shows that the parcels within plat 123 are owned by Ke Noho Kai Development, LLC. Please confirm whether Ke Noho Kai is owned and/or managed by HASEKO.

5. **TMK 9-1-027:143 to 161** – Our research indicates that plat 27 within zone 9, sector 1 does not exist. However, we are able to verify that HASEKO (Ewa) does own the parcels designated by TMKs 9-1-127:143 to 161. Please confirm if the current use TMKs in this sequence are within plat 127.

6. **TMK 9-1-142:001 to 148** – Our research indicates that the sequence of TMKs within plat 142 and owned by HASEKO consists of only 35 parcels numbered 9-1-142:001 to 032, 141, 145, and 148. The combined area of these parcels is 9.51 acres. Please confirm whether our information is correct.

WUP No. 784 authorizes urban and other nonagricultural water uses (i.e., golf course irrigation, roadway landscape irrigation, and dust control) on a total of 620 acres within TMKs originally given (in 1993) as 9-1-012:005, 006, and 007. (The total quantity of permitted urban and other nonagricultural water use on these areas is 1.5 million gallons per day.) We need additional details to reconcile the total acreage for which water use is authorized with the updated use TMKs and use areas. A map showing how the original use TMKs covered by WUP No. 784 relate to the current TMK designations and boundaries would help with this reconciliation.

Unless we can verify that all of the new TMKs are located within the same footprint covered by WUP No. 784 and that the total area of the new TMKs is not greater than the permitted area, HASEKO will be required to apply for a water use permit modification.

If you have questions or to discuss our comments and questions, please call Denise Mills of the Commission staff at 587-0251.

Sincerely,

Ken C. Kawahara, P.E.
Deputy Director

DM:ss

c: HASEKO (Ewa), Inc.
Mr. Ken C. Kawahara, P.E., Deputy Director
Commission on Water Resource Management
Kalanimoku Building, Room 227
1151 Punchbowl Street
Honolulu, Hawaii 96813
Attention: 

Re: Water Use Permit No. 784, TMK 9-1-012-005
Well Nos. 1901-06, 1902-01, 1902-09 to 11
Permittee: HASEKO (Ewa), Inc.

Dear Mr. Kawahara:

We would like to thank Mr. Roy Hardy and Ms. Denise Mills for meeting with us on February 3, 2008.

As mentioned during that meeting, one of the conditions of Haseko’s permit is to notify the Commission when the tax map key number at the location of water use have changed. In accordance with such condition, we provide you with the following tax map key numbers:

1. Hoakalei Golf Course:
   - 9-1-134-003, 009, por 012, and por 013; and
   - 9-1-137-065

2. Dust Control:
   - 9-1-011-001 to 007;
   - 9-1-012-081 and 084;
   - 9-1-123-116 to 104;
   - 9-1-127-143 to 161;
   - 9-1-128-143 to 146;
   - 9-1-134-001, por 007, 008, 011, por 012, por 013;
   - 9-1-142-001 to 148; and
   - 9-1-143-001 to 063.

Please feel free to call should you have any questions.

Very truly yours,

Yvonne Y. Izu

cc: HASEKO (Ewa), Inc.
<table>
<thead>
<tr>
<th>Use Description</th>
<th>TMK</th>
<th>Area (acres) (MLS Research)</th>
<th>Total Area, TMK Plat (acres)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoakalei Golf Course</td>
<td>9-1-134:003</td>
<td>189.44</td>
<td>507.04</td>
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<tr>
<td></td>
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<td></td>
<td>9-1-134:012, por</td>
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<td>9-1-134:013, por</td>
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<td>Dust Control</td>
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<td>9-1-134:007, por</td>
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**Assessed Values reflect tax year 2008.**

Search criteria: TMK Owner HASEKO (EWA) INC OR HASEKO (EWA) INC /ETAL OR HASEKO CENTER PROPERTY OWNER LLC OR HASEKO HOMES INC OR HASEKO HOMES INC /ETAL...

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KAIKOHOLA ST
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0 0 5,169 sqft 0

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Prior Page  Next Page

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Search criteria: TMK Owner HASEKO (EWA) INC OR HASEKO (EWA) INC /ETAL OR HASEKO CENTER PROPERTY OWNER LLC OR HASEKO HOMES INC OR HASEKO HOMES INC /ETAL...

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Prior Page    Next Page
Assessed Values reflect tax year 2008.

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Prior Page    Next Page

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Prior Page    Next Page
Assessed Values reflect tax year 2008.

Search criteria: TMK Owner HASEKO (EWA) INC OR HASEKO (EWA) INC/ETAL OR HASEKO CENTER PROPERTY OWNER LLC OR HASEKO HOMES INC OR HASEKO HOMES INC/ETAL...

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Copyright ©7/28/2008 by Hawaii Information Service
Dear Water Use Permittee:

Hawaii Prince Golf Club/Hawaii Prince Hotel Waikiki Corp.,
Well Nos. 1900-02, 1900-17 to 20, 1901-03, WUP No. 469, 0.301 mgd, TMK 9-1-10:6
Haseko (Ewa), Inc., Well Nos. 1901-06, 1902-01, 1902-09 to 11, WUP No. 650, 3.300 mgd, TMK 9-1-12:5
Department of Parks and Recreation, Well No. 2001-03, WUP No. 167, 0.030 mgd, TMK 9-1-61:35
Palm Court Association, Well No. 2001-07, WUP No. 169, 0.040 mgd, TMK 9-1-61:22
Palm Villa II Association, Well No. 2001-08, WUP No. 168, 0.048 mgd, TMK 9-1-61:27
Arbors Association, Well No. 2001-01, WUP No. 171, 0.063 mgd, TMK 9-1-61:32
U.S. Fish & Wildlife, Well No. 2101-14, WUP No. 247, 0.216 mgd, TMK 9-1-17:12
Gentry Development Co., Well No. 2001-04, WUP No. 302, 0.040 mgd, TMK 9-1-61:7
Gentry Development Co., Well No. 2001-09, WUP No. 344, 0.023 mgd, TMK 9-1-61:2
Ewa by Gentry Community Association, Well No. 2001-05, WUP No. 450, 0.066 mgd, TMK 9-1-70:132
Gentry Homes, Ltd., Well No. 2001-12, WUP No. 504, 0.249 mgd, TMK 9-1-102:31
Gentry Homes, Ltd., Well No. 1901-05, WUP No. 505, 0.056 mgd, TMK 9-1-69:8
U.S. DOC/NOAA/NWS, Well No. 1900-23, WUP No. 501, 0.023 mgd, TMK 9-1-1:1
Coral Creek Golf, Inc., Well No. 2002-17, WUP No. 577, 0.498 mgd, TMK 9-1-69:10
Coral Creek Golf, Inc., Well No. 2001-13, WUP No. 578, 0.800 mgd, TMK 9-1-69:10
Coral Creek Golf, Inc., Well Nos. 2001-14, 2002-15, 17, 19,
WUP No. 579, 0.892 mgd, TMK 9-1-69:10&11, 9-1-61:54
AOAO Suncrest/The Shores/Lombard Way/Avalon, Well No. 2001-10,
WUP No. 629, 0.022 mgd, TMK 9-1-10:17
State Housing Community Development Corporation of Hawaii,
Well Nos. 2003-04,07, WUP No. 432, 0.494 mgd, TMK 9-1-16:25
State Housing Community Development Corporation of Hawaii,
Well Nos. 2003-08, WUP No. 520, 0.237 mgd, TMK 9-1-16:108
Kapolei People’s Inc., Well Nos. 2003-01,02,05, WUP No. 438, 1.000 mgd, TMK 9-1-16:25
Honolulu Board of Water Supply, Well Nos. 1905-08,10, WUP No. 740, 0.302 mgd, TMK 9-1-16:1

Conversion of Interim Water Use Permits for
New Irrigation Uses to Permanent Water Use Permits
Puuloa and Kapolei Ground Water Management Areas, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on the subject water use permits.
By a unanimous vote at their meeting on July 12, 2006, the Commission corrected the error of approving and issuing interim permits for new irrigation uses in the Puuloa and Kapolei Ground Water Management Areas of the Ewa Caprock Aquifer Sector Area by converting the subject interim water use permits to permanent water use permits. All terms and conditions of the permits shall remain unchanged, except for Special Condition d., which is deleted.

The Commission ruled that permittees shall be notified by letter of the Commission’s action to convert these water use permits from interim to permanent and the deletion of Special Condition d. The Commission further ruled that re-issuance of these water use permits is not necessary.

Please be advised that a compliance review will be initiated shortly as required under §174C-56 Hawaii Revised Statutes. We recommend that you carefully review the conditions of your permit and ensure that you are in compliance with all Standard and Special Conditions.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

DEAN A. NAKANO
Acting Deputy Director

LYN:ss
4. The permittee shall submit a detailed agriculture plan to support any future water use permit application for increased agricultural use at this parcel.

MOTION: (Ching/Frazier)
To approve submittal as amended by staff
UNANIMOUSLY APPROVED

C. GROUND WATER REGULATION


CONVERSION OF INTERIM WATER USE PERMITS, FOR NEW IRRIGATION USES TO PERMANENT WATER USE PERMITS,
Puuloa and Kapolei Ground Water Management Areas, Oahu

Presentation of submittal: Lenore Nakama
RECOMMENDATION:

Staff recommends that the Commission correct the error of approving and issuing interim permits for new irrigation uses in the Puuloa and Kapolei Ground Water Management Areas of the Ewa Caprock Aquifer Sector Area by converting the subject interim water use permits to permanent water use permits. All terms and conditions of the permits shall remain unchanged, except for Special Condition d., which is deleted. The permittees shall be notified by letter of the Commission's action to convert these water use permits from interim to permanent and the deletion of Special Condition d. Re-issuance of these water use permits is not necessary.

DISCUSSION:

Ms. Nakama stated that these interim permits expired on July 1, 2006 and staff is recommending that the Commission correct the error that was made in issuing the permits as interim, rather than permanent, water use permits. Action is also requested to inform these users that they may continue to pump their wells in accordance with their allocations and the chloride limit placed on irrigation wells in the Ewa Caprock Aquifer Sector Area.

Commissioner Ching inquired whether the subject permits covered all the users in the Ewa Caprock Aquifer Sector Area. She was concerned that giving certain permits a permanent status may give them a higher priority or status over other interim permits.

Ms. Nakama stated that the submittal covered all the new irrigation users which had a duration of July 1, 2006 attached to their interim permits. There are other interim permits that have been issued for industrial and other non-irrigation uses in the Ewa Caprock Aquifer Sector Area, there are also other interim permits that have been issued for other new and existing uses elsewhere in the State. Staff will address the rest of the interim permits as part of the 20-year compliance review that is mandated by the Water Code. Staff does not feel that the type of permit (i.e., interim or permanent) under which the water is being used will have a bearing on water use priorities should a future competition situation arise.

MOTION: (Ching/Frazier)
Approval of staff recommendation
UNANIMOUSLY APPROVED

G. NON-ACTION ITEMS

1. Rainfall Index Update Presentation by Dr. Pao Shin Chu, State Climatologist, University of Hawaii, Department of Meteorology

Presentor of non-action item: Neal Fujii
Minutes

July 12, 2006

Graduate student, Ms. Cindy Ditner presented an update of rainfall throughout the state through a PowerPoint presentation. She stated that it has been 33 years since the last update was done. In preparing this index they gathered rainfall data throughout the State through temperature, elevation and rain gages. If a station did not submit information for 4 months within a calendar year then it was deleted.

H. NEXT COMMISSION MEETING (TENTATIVE)

1. August 16, 2006
2. September 20, 2006

The meeting was adjourned at 12:00 p.m.

Respectfully submitted,

PAULYNE K. ANAKALEA
Secretary

Approved as submitted:

DEAN A. NAKANO
Acting Deputy Director
Ref: ewa caprock interim wup conversion.sub

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

July 12, 2006
Honolulu, Oahu

Hawaii Prince Golf Club/Hawaii Prince Hotel Waikiki Corp.,
Well Nos. 1900-02, 1900-17 to 20, 1901-03, WUP No. 469, 0.301 mgd, TMK 9-1-10:6
Haseko (Ewa), Inc., Well Nos. 1901-06, 1902-01, 1902-09 to 11, WUP No. 650, 3.300 mgd, TMK 9-1-12:5
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Honolulu Board of Water Supply, Well Nos. 1905-08,10, WUP No. 740, 0.302 mgd, TMK 9-1-16:1

CONVERSION OF INTERIM WATER USE PERMITS
FOR NEW IRRIGATION USES TO PERMANENT WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

ITEM C-2
PERMITTEES: See Exhibit 1

LANDOWNERS: See Exhibit 1

SUMMARY OF REQUEST:

Staff recommends that the Commission correct past water use permit approval errors in the Puuloa and Kapolei Aquifer Systems Areas of the Ewa Caprock Ground Water Management Area and convert the interim water use permits for new irrigation uses to permanent water use permits.

LOCATION MAP: See Exhibit 2

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Waiaawa, Ewa-Kunia, and Makaiwa Aquifer System Areas. Due to uncertainties regarding the caprock's sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock. All permitted Ewa Caprock irrigation uses prior to 1993 were operating under permanent water use permits.

Designation of the Ewa Caprock and its Aquifer System Areas as water management areas was precipitated by the City and County of Honolulu’s (City) urbanization plans for the Ewa area and a City ordinance requiring dual water systems for all new developments. Potable water was to be provided through the municipal system. Possible sources of non-potable water were brackish ground water from the Ewa Caprock Aquifer Sector Area and reclaimed sewage effluent from the Honouliuli Wastewater Reclamation Facility. The estimated non-potable demand of 25 mgd after full buildout (Kumagai, 1996) far exceeded the estimated natural recharge to the caprock aquifer of less than 16 mgd (Bauer, 1996).

Because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture, in 1993, the Commission began awarding temporary one-year permits for new uses of caprock ground water. In analyzing water availability, the Commission used guidelines for estimating sustainable yields for the Puuloa, Kapolei, and Malakole Aquifer System Areas (Yuen & Associates, Inc., 1989; Exhibit 2).

On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.

On July 5, 1995, the Commission extended the permits, which were now called interim (instead of temporary) permits.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a formal sustainable yield for the caprock.

Also on March 13, 1996, the Commission adopted the following policy statement, clearing the way for application of reclaimed water on lands overlying the Ewa Caprock Aquifer Sector Area:
It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for each individual irrigation well at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The rationale behind the chloride cap was to limit pumpage in those wells approaching the limit, to prevent a build-up of sodium in the clay soils, and to protect other users adjacent to those pumping higher chloride water. The Commission also adopted the Puuola, Kapolei, and Malakole Aquifer System Areas in the Ewa Caprock Aquifer Sector Area and approved pending applications for new and continued irrigation uses. The interim water use permits were to expire on October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincided with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provided a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999. (Note: Wastewater reuse was anticipated due to the 309 Consent Decree settlement between the City and DOH/EPA in 1994, which required the City to implement a reuse program with agreed-upon time schedule and associated volumes: 2.0 mgd by 7/1/98, 5 mgd by 6/30/99 and 10 mgd by 7/1/01. The City requested and received extensions to the implementation schedule.)

On October 22, 1998, the Commission extended the interim water use permits, subject to the Standard Conditions of a water use permit and new special conditions. The interim permits specified a duration to July, 2001, or 1) until treated wastewater is available and acceptable for use, or 2) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

On July 20, 2000, an agreement was reached between the Honolulu Board of Water Supply (BWS), the City, and U.S. Filter for BWS’ purchase of the Honouliuli Wastewater Reclamation Facility. The agreement includes BWS becoming the purveyor of reuse water, with the task of securing customers for 10 mgd by July 1, 2001. U.S. Filter will operate the facility for BWS under a 20-year service agreement. The City will provide secondary effluent to the facility and will take back 4 mgd of the R-1 water for City reuse applications. Some of the reclaimed water will supply industrial uses at Campbell Industrial Park.

On July 18, 2001, the Commission extended the interim water use permits, subject to the Standard Conditions of a water use permit and new special conditions (Exhibits 3 and 4). Special Condition 3 specifies that the duration of the interim permits is to July 1, 2006, or 1) until treated wastewater is available and acceptable for use, or 2) until such time that a significant change in permitted, actual, or projected uses of water supply occurs.
ANALYSIS/ISSUES:

All of the subject permits are for new irrigation uses that have a July 1, 2006 expiration date. Under the Water Code and Administrative Rules, interim permits are only mentioned in the sections dealing with existing uses. Section §174C-50 HRS contains the provisions for existing uses. Subsection (e) provides for the issuance of interim permits for existing uses:

"§174C-50 Existing uses. ...(e) The commission shall issue an interim permit; provided that the existing use meets the conditions of subsection (b). The commission shall also issue an interim permit for an estimated, initial allocation of water if the quantity of water consumed under the existing use is not immediately verifiable, but the existing use otherwise meets the conditions of subsection (b) for a permit of an interim permit. An interim permit is valid for such time period specified therein. The commission may issue successive interim permits of limited duration. Interim permits are subject to revocation under section 174C-58. Whenever interim permits are to be issued, the time periods specified in subsection (d) apply to the issuance or nonissuance of interim permits." §174C-50(e) HRS

Staff believes the intent of the provision is to bring existing users in newly-designated areas under regulation in a timely manner by issuing interim permits pending verification of the quantity of the existing use. Subsection (f) provides for the installation of metering or gauging devices, and if so prescribed, "....such metering or gauging devices shall be in place and operational for at least one year before a determination is made as to the quantity of water being consumed in an existing use and a final permit is issued." §174C-50(f) HRS

Because the Water Code gives preference to existing uses over new uses and water reservations, it is important that permitted existing use quantities be verified. In the event of future competition, existing uses may have a higher priority than new uses.

In issuing permits for new uses, the applicable statute, §174C-53 HRS, does not mention interim permits.

The recommended action is to correct the error that was made in issuing interim permits for new uses and to let users know that they can continue their use beyond July 1, 2006, subject to the Standard and Special Conditions that have been attached to these permits (Exhibits 3 and 4), with the exception of Special Condition d., which limits the duration of these new use permits. Special Condition d. is not necessary because the Water Code provides for review of water use permits (§174C-56 HRS), modification of water use permits (§174C-57 HRS), and revocation of water use permits (§174C-58 HRS); therefore, permanent permits are still subject to review, modification, and revocation.

The Deputies Attorney General have concurred that the awarding of interim permit for new uses is an error. The erroneous practice of approving and issuing interim permits for new uses was corrected beginning in about 2003. The current practice of the Commission is to approve permanent permits for new uses, which are always subject to standard and special conditions that define limitations of these permits.

There are other instances in which the Commission has issued interim permits for new uses in the Ewa Caprock and other water management areas. However, the Commission did not attach specific expiration dates to other interim permits for new uses. Therefore, the staff is planning to address the status of other interim permits, as well as all permanent water use permits, including the subject permits, as part of the 20-year compliance review that is required under §174C-56 HRS. This compliance review will be initiated in 2007 and completed in 2008.
RECOMMENDATION:

Staff recommends that the Commission correct the error of approving and issuing interim permits for new irrigation uses in the Puuloa and Kapolei Ground Water Management Areas of the Ewa Caprock Aquifer Sector Area by converting the subject interim water use permits to permanent water use permits. All terms and conditions of the permits shall remain unchanged, except for Special Condition d., which is deleted. The permittees shall be notified by letter of the Commission's action to convert these water use permits from interim to permanent and the deletion of Special Condition d. Re-issuance of these water use permits is not necessary.

Respectfully submitted,

DEAN A. NAKANO
Acting Deputy Director

Exhibit(s):
1 (Interim Water Use Permittees)
2 (Location Map)
3 (Standard Water Use Permit Conditions)
4 (Special Water Use Permit Conditions)

APPROVED FOR SUBMITTAL:

PETER T. YOUNG
Chairperson
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Exhibit 1
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STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;

EXHIBIT 3
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the [Puuloa or Kapolei] Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the [Puuloa or Kapolei] Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.
16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the [Puualo or Kapolei] Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

EXHIBIT 3
SPECIAL CONDITIONS

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment C.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

   • Sampling Schedule

     The sampling schedule depends upon your pump capacity:

     | Pump Capacity (gpm) | Sampling Schedule |
     |---------------------|-------------------|
     | Less than or equal to 50 | Once a month |
     | Greater than 50      | Once a week      |

   • When to Sample

     Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

   • Sample Bottle

     Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

   • Labeling

     On the sample bottle, affix a label that contains the following information:

     Well No.
     Date
     Time Sampled
     Elapsed Time after pump on
     Sampler's Name
     Water Temperature (if available)
     Pumping Rate (prior to sampling)

Attachment B
2. **Determination of Chloride Concentration**

**Private Laboratories**

If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

Private laboratories will use methods that are more accurate than field methods described below.

**Hach Kit (Drop Count Titrator)**

Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. **Be consistent with the end-point color change.**

For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

**Hach Kit (Digital Titrator)**

A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

**Note:** **Be consistent with the end-point color.** Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

**Other Methods**

An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. **Reporting Results**

- How to Report

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

**Under "Notes" Section of the Monthly Water Use Report:**

2. Method used for chloride analysis:______________

3. Total elapsed time before sampling:______________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
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1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

Attachment C
Island of O‘ahu

HASEKO (Ewa), Inc. Development

Hoakalei Marina Excavation (48.35 acres)

EXTRACTION POINT FOR DUST CONTROL

Sources:
- R.M. Towell, Inc.
- Hi-Base GIS
- Digital Globe Satellite Photo
(April 3, 2010)

Prepared for:
HASEKO (Ewa), Inc.

Hoakalei Marina Excavation
April 3, 2010
Addition of HASEKO's Excavated Marina to WUP 884 in the Puuloa Ground Water Management Area, Oahu

HASEKO (Ewa), Inc. has recently received approval of WUP 884 for Wells 1901-06, 1902-01, and 1902-09 to -11 for 1.337 MGD from the Puuloa Ground Water Management Area. Uses of the water are for golf course irrigation, other landscape irrigation, and dust control. By this letter, HASEKO (Ewa), Inc. requests that its excavated marina, currently not cut through to the shoreline, be added to the sites from which water would be extracted under WUP 884. The marina water is too saline for irrigation (chlorides in excess of 5,000 MG/L), so its use would be limited to dust control. The attached map shows the marina site in relation to the HASEKO property and its other extraction points included in WUP 884.

Based on a conversation with Roy Hardy of your staff, it is my understanding that this written request will suffice to add the marina to WUP 884. If you require anything else, please let me know.

Sincerely,

Tom Nance

cc: Ray Kanna [Email Only]  
Yvonne Izu [Email Only]  
Charles Morgan [Email Only]
Ryan, please get this finished today if possible. Tom called and said they're using potable water from a fire hydrant for dust control when they could use the marina water instead and I agreed it made sense to go ahead and do the conservative thing and use the marina water already. Thanks. (please file this email string in the well folder too).

----- Forwarded by Roy Hardy/DLNRIStateHiUS on 07/01/2010 08:03 AM -----

Roy Hardy/DLNRIStateHiUS
07/01/2010 07:58 AM
To Tom Nance <tom@tnwre.com>
cc Ryan R Imata/DLNRIStateHiUS@StateHiUS
Subject Re: Fwd: Addition of HASEKO's Excavated Marina to WUP 884 ... 06-03

Thanks Tom. I remember discussing, but I don't believe it actually passed my desk as it wasn't logged in our system and assigned a new WUP #. Anyway, it will be merging WUPs 409 and 884 administratively into WUP 897 via declaratory ruling DEC-ADM97-A1.

Tom Nance <tom@tnwre.com>

Roy:
The letter we sent in is attached to the email to Ryan.

Tom

-------- Forwarded message --------
From: Tom Nance <tom@tnwre.com>
Date: Tue, Jun 29, 2010 at 8:57 AM
Subject: Addition of HASEKO's Excavated Marina to WUP 884 ... 06-03
To: "Imata, Ryan (5-09)" <Ryan.R.Imata@hawaii.gov>

Ryan:
Attached is a copy of the letter sent to allow pumping from the excavated marina for dust control.

Tom

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

Tel: 808-537-1141 / Fax: 808-538-7757

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

Tel: 808-537-1141 / Fax: 808-538-7757[attachment "cwrn.pdf" deleted by Roy Hardy/DLNR/StateHiUS]
WATER USE PERMIT NO. 784

This report has been prepared in accordance with 13-171-22(b) of the Hawaii Revised Statutes requiring a 20-year review of issued water use permits to determine permit compliance. Following is a summary of permit information, site characteristics, methodology, findings, and recommendations for this State permit file.

**Permit Information**

<table>
<thead>
<tr>
<th>Water User:</th>
<th>Haseko (Ewa), Inc. 91-1001 Kaimaile St., Suite 205 Ewa Beach, HI 96706</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landowner of Source:</td>
<td>Haseko (Ewa), Inc. 91-1001 Kaimaile St., Suite 205 Ewa Beach, HI 96706</td>
</tr>
<tr>
<td>Permitted Withdrawal Rate:</td>
<td>3.30 mgd (Based upon a 12-month moving average)</td>
</tr>
<tr>
<td>Water Management Area:</td>
<td>Pu'uloa</td>
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<tr>
<td>Island:</td>
<td>Oahu</td>
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<tr>
<td>Aquifer Sector/System:</td>
<td>Ewa Caprock/Pu'uloa</td>
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<td>System Sustainable Yield:</td>
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<tr>
<td>Water Type:</td>
<td>Brackish</td>
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<tr>
<td>Original CWRM Date:</td>
<td>July 12th, 2006</td>
</tr>
<tr>
<td>Standard Conditions:</td>
<td>1-19</td>
</tr>
<tr>
<td>Special Conditions:</td>
<td>1-2, 38, 40-44</td>
</tr>
</tbody>
</table>

**Water Source**

| State Well Number(s): | 1901-06, 1902-01, 1902-09, 1902-10, 1902-11 |
| Well Name: | EP 27 Battery |
| Water Source TMK Number(s): | 1st Division, 9-1-012:039, 9-1-012:057 |
| State Land Use Classification(s): | Urban |
| County Zoning Classification(s): | A-2, BMX-3, P-2, R-5 |
| Geographical Coordinates: | Latitude 21° 19' 17.6" North  Longitude 158° 01' 39.6" West |
| Well No. 1901-06 | Latitude 21° 18' 52.5" North  Longitude 158° 02' 22.9" West |
| Well No. 1902-09 | Latitude 21° 19' 07.9" North  Longitude 158° 02' 01.2" West |
Well No. 1902-10

Latitude 21° 19' 08.1" North
Longitude 158° 01' 57.9" West

Well No. 1902-11

Latitude 21° 19' 13.8" North
Longitude 158° 01' 49.6" West

End Use

End Use TMK Number(s): 1st Division, 9-1-012:039, 9-1-012:045, 9-1-012:046, 9-1-012:057

State Land Use Classification(s): Urban

County Zoning Classification(s): A-2, BMX-3, P-2, R-5

Beneficial Use Explanation: Use for golf course irrigation and water features

Background Information

State Well Nos. 1901-06, 1902-01, 1902-09, 1902-10, and 1902-11 were originally governed by Water Use Permit 650, which was approved during the July 18th, 2001 Commission on Water Resource Management meeting for use of 3.30 mgd. In August of 2006, Water Use Permit 650 was transferred from an interim to a permanent status and was superseded by Water Use Permit 784, which is the most current water use permit.

Consistent water use reporting records are available up until mid-2005 when water use reporting was halted. During the time period when water use was being reported, the permittee’s 12-month moving average did not exceed the permitted allocation of 3.30 mgd. Reference the permit file for additional information on reporting history.

Water Use Permit 784 was approved during the July 12th, 2006 Commission on Water Resource Management meeting. Standard conditions 1-19 and special conditions 1-2, 38, & 40-44 are the governing conditions for this water use permit. A complete list of all standard and special conditions is given in the final summary report to the Legislature for this 20-year Water Use Permit Review.

Field Investigation Information

Contact: Kalani Voeller
Site Address: Hoakalei Country Club
Ewa Beach, HI 96706

Brown and Caldwell conducted a field investigation on March 12th, 2008 from 2:30 p.m. until 3:30 p.m. with Mr. Kalani Voeller. During this time, type of water usage was verified, GPS coordinates of well head(s) were recorded, flow meter installation and functionality were
documented, and property TMK information was verified. The wellhead, its related appurtenances, and water usage area were visually inspected to assess compliance with permit conditions. Visual inspection of water loss/waste was limited to outdoor areas within the usage boundary. The physical location of this site is at the future location of the Hoakalei Country Club at the end of Keomihula Boulevard. Reference the TMK and GIS maps in the permit file for a visual representation of the site.

Summary of Findings for Water Use Permit No. 784

State Well Nos. 1902-01, 1902-09, 1902-10, and 1902-11 are located on TMK parcel 9-1-012:039. State Well No. 1901-06 is located on TMK parcel 9-1-012:057. GPS coordinates of the wells are given in the 'Water Source' section of this report. TMK parcels 9-1-012:039, 9-1-012:045, 9-1-012:046, and 9-1-012:057 are the end use areas where water will be used for irrigation once the golf course construction is complete. Once development is further along, there is a chance that land may be re-parceled and re-zoned. As such, the water source TMK's, end use TMK's, State Land Use Classifications, and County Zoning Classifications should be verified upon completion of the Hoakalei Country Club.

Currently, only State Well No. 1902-01 is in use. It is an Artesian well that is being used for irrigation of the golf course. A pump draws water from a small pond that is fed by artesian overflow and directs water across the golf course for irrigation purposes. State Well Nos. 1901-06 and 1902-11 both are drilled, fitted with submersible well pumps and flowmeters, and are ready for immediate use. These two wells will empty into a water feature that will double as a storage reservoir. A pump house adjacent to this feature will draw water from the reservoir and feed the main irrigation system. Once the pump house is online, the entire system will be run on automatic controls. On the date of the field visit (March 12th, 2008), the permittee advised that within one week these two wells and the pump house would be fully operational.

State Well Nos. 1902-09 and 1902-10 are drilled, but do not have the necessary appurtenances to be put into operation. Once golf course development furthers, these two wells will be fitted with submersible pumps and flowmeters, and will be used to maintain water features on the grounds. Reference the Appendix for photographs of the previously described system components.

The following are a list of standard condition(s) that the permittee is found to be in non-compliance with:
(10) An approved flowmeter must be installed to measure monthly withdrawals and a month record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis.

After inspection, it was found that the permittee has flowmeters installed on all wells being used. However, since no monthly water use reports have been made since 2005, the permittee is in violation of Standard Condition (10).

Based upon visual inspection of the system, all components appear to be in full working order. The permittee demonstrated functionality of an installed flowmeter and provided access to the site grounds where no wasting of water or water loss was observed. Visual inspection also confirmed that water use was within the permitted TMK boundaries. Water use and salinity, however, are not currently being reported.

Recommendations

• Address the following discrepancies between the Commission’s electronic database and actual field investigation findings:
  o Water source and end use TMK’s
  o State land use and county zoning classifications
• Address violation of Standard Condition (10) regarding non-reporting of water use and salinity.
• Follow up on WUP 784 once Hoakalei Country Club is completed to check on any potential TMK, land use, or zoning changes.
20-Year Water Use Permit Review
Water Use Permit No. 784

APPENDIX

Field Investigation Photographs
Figure 1 - State Well No. 1902-11 w/installed flowmeter

Figure 2 - State Well No. 1901-06 w/installed flowmeter
Figure 3 – State Well No. 1902-09

Figure 4 – State Well No. 1902-10
Figure 5 – State Well No. 1902-01

Figure 6 – Well pump and system flowmeter for State Well No. 1902-01
Figure 7 – Storage reservoir/water feature for future irrigation system

Figure 8 – Pump house (under construction) w/booster pumps, controls, & other appurtenances
Figure 9 – Typical end use area

Figure 10 – Typical end use area
Standard Conditions List

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means “the use of water in such a quantity as is necessary for economic and efficient utilization, which is both reasonable and consistent with State and County land use plans and the public interest.” (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in Section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its <Insert Date> meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

Variations of Standard Condition (8) are as follows:
   i. Modification of any permit condition shall be approved by the Commission. Modification of any permit condition without notification may result in the revocation of the water use permit.
9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

Variations of Standard Condition (10) are as follows:
   i. The applicant shall keep monthly pumpage estimates to be submitted annually to the Commission.
   ii. An approved flowmeter(s) need not be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a yearly basis (attached).
   iii. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a monthly basis in accordance with the Commission's September 16, 1992 action on reporting requirements.
   iv. Approved flowmeters must be installed to measure monthly withdrawals and a monthly record of withdrawals must be kept and reported to the Commission on Water Resource Management on a monthly basis.
   v. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a quarterly/yearly basis (attached).
   vi. An approved flowmeter shall be installed to measure water withdrawals.
   vii. An approved flowmeter(s) must be installed to measure withdrawals; and a record of the withdrawals must be kept and reported to the Department of
Land and Natural Resources, Division of Water and Land Development,  
P.O. Box 373, Honolulu, HI 96809, on a monthly basis.  

viii. Although not stated as a condition of the permit §13-168-7 HAR requires you to keep a record of your monthly total pumpage, water level, salinity, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form.

ix. An approved flowmeter shall be installed and the withdrawal from Well 1851-73 shall be recorded and reported to DLNR on a monthly basis by the owner and/or operator of the well.

x. The withdrawals from these wells shall be recorded and reported to the DLNR on a monthly basis by the BWS.

xi. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting water usage on a monthly basis.

xii. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

xiii. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission along with water level and salinity measurements.

11. This permit shall be subject to the Commission's periodic review of the <Aquifer> Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the <Aquifer> Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:  
a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of use, remain the same; and  
b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The uses(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservations, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter
into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period or forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the <Aquifer>Ground-Water Management Area.

17. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter or attached exhibits are incorporated herein by reference.

20. If the ground-water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

Variations of Standard Condition (20) are as follows:
  i. The permit may be revoked if work is not started within six months of the date of issuance or if work is suspended or abandoned for six months. The work proposed in the permit application shall be completed within two years from the date of permit issuance.

21. This permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HRS § 174C-59 and the requirements of Chapter 174C, the Commission on Water Resource Management has the authority to allow the transfer of the permit and the use rights granted by this permit in a manner consistent with HRS § 174C-59. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

22. The water use permit granted shall be an interim water use permit, pursuant to HRS § 174C-50. The final determination of the water use quantity shall be made within five (5) years of the filing of the application to continue the existing use.

23. The water use permit shall be issued only after agricultural review.

24. That scheduled adjustments to Oahu Sugar Co. permitted use shall be initiated upon discontinuance of agricultural uses.
25. The issuance of this permit was approved by the Commission on Water Resource Management at its meeting on <Insert Date>.

26. The permit shall be subject to the review by the Attorney General.

27. The permit holder may be required to relinquish this permit at any time or specified time after issuance to the Board of Land and Natural Resources in accordance with Chapter 166 of Title 13.

28. The applicant shall obtain the necessary land acquisition documents from the Hawaii Housing Authority.
Special Conditions List

1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

2. 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.

3. The applicant shall contact the Environmental Management Division, State Department of Health, at 586-4304, concerning “GUIDELINES APPLICABLE TO GOLF COURSES IN HAWAII” date <Insert Date & Version #>.

4. Standard Condition 10 is emphasized, to report consumption on a regular basis.

5. The applicant may continue this existing use of ground water within the limits approved by the Commission, and the actual issuance of the interim permit shall not be a reason to interrupt this existing use.

6. This interim water use permit shall cease to become interim and shall be subject to HRS § 174C-55 upon administrative review of the quantity within five (5) years, provided that all conditions of the use (including the review of the quantity which shall not be greater than the amount initially granted) remain the same. Enforcement of the allocation limit shall be stayed pending staff’s review and issuance of a permanent water use permit.

7. As-built drawings of the well and pump, and a complete pumping test record shall be submitted within sixty (60) days.

8. In the event the pump tests show that aquifer boundary conditions do not support the requested withdrawals, the Commission reserves the right to amend this permit, after a hearing, to a level that is supported by the pump tests.

9. The existing use may be continued within the levels approved by the Commission, and the actual issuance of the permit document shall not be a reason to interrupt the approved level of use.

10. The filing of an application by Kukui, Inc. for a new or modified water use permit for the Kualapuu Aquifer in excess of 2.0 mgd (total system withdrawal) shall be just cause for re-consideration of this interim permit by the Commission.

11. Upon completion of a new transmission line for the transport of water use by Well #17, the permit shall be modified to reduce the allocation amount by the additional 79,220 gallons per day allocated for use of the Molokai Irrigation System.

12. Within six (6) months from the date of approval of a water use permit for the well, the applicant shall conduct a feasibility study and submit a report describing
alternative sources of nonpotable water for irrigation uses at the resort area. It is suggested that the developer consider use of dual lines in the subdivisions so that effluent may be used in the existing reuse system. Another consideration is the development of brackish water wells in the Kaluakoi Aquifer system for mixing with the effluent generated at the resort.

13. Within six (6) months from the date of approval of a water use permit for the well, the application shall evaluate the filter back discharges into Kakaako Gulch to determine if excessive preventable waste is occurring and identify possible measures to eliminate or reduce such waste. The evaluation shall be conducted in cooperation with the Commission staff and staff of the Department of Health’s Safe Drinking Water Branch, which regulates the drinking water system.

14. Within six (6) months from the date of approval of a water use permit for the well, the applicant shall 1) implement a leakage control and detection system and compete repairs to prevent such leakage and 2) implement use of xeriscaping and low-flow fixtures.

15. Action on the future use portion of the water use permit application for Well #17 (Well No. 0901-01) is deferred pending the establishment of existing uses in the aquifer. Kukui Inc.’s application for uses in excess of those uses existing on July 15, 1992 will be considered “new” uses and will be taken up by the Commission as soon as other existing use applications have been decided. In the interim,
   a. The Commission shall recognize that there is disagreement between the applicant’s staff calculations of reasonable-beneficial existing use
   b. The Applicant will have the burden of proof to show within six (6) months reasonable-beneficial existing use calculations that support the applicant’s request as opposed to staff’s calculations.
   c. The Commission’s enforcement of the approved existing use allocation will be suspended for six (6) months.

16. The permittee shall submit a notice of intent and written request to continue the use at least ninety (90) days prior to the expiration of the interim five-year permit.

17. The Commission shall delegate to Maui Department of Water Supply the authority to allocate the use of water for municipal purposes, as provided in §174C-48(b).

18. Maui Department of Water Supply shall be exempt from the requirements for permit modifications, as provided in §174C-57(c).

19. The permittee must meter water use and monitor chloride concentrations on a monthly basis and submit monthly reports of water use and chloride concentrations to the Commission.

20. Standard Condition 16 is waived for saltwater wells.

21. The permit will be revoked if (1) stream monitoring shows that pumping the well reduces stream flow, or (2) the electromagnetic resistivity survey indicates that the
well was drilled into a dike compartment, unless the applicant submits a petition for an amendment to the interim instream flow standard with the well completion report. However, no use of the water may be made without a Pump Installation Permit, which cannot be issued during consideration of the amendment of the interim instream flow standard.

22. The applicant shall present the results of the electromagnetic resistivity survey, pump tests, and stream monitoring to a community meeting as well as to the Commission.

23. A final determination of water use quantity shall be made within five (5) years of the filing date of the application (<Insert Date>) to continue existing use.

24. The applicant shall implement, by December 31, 1995, a biological and hydraulic monitoring program for a minimum 2-year period that: 1) documents the existing operating procedure, 2) seeks to identify the impacts of all operating alternatives on Waikolu Stream, and 3) seeks to identify the effectiveness of weir modifications (Dam No. 1). This program shall incorporate the three new wells, Wells #4-6 (Well Nos. 0855-06, -05, &-04, respectively), which may be pumped within the approved limits, for monitoring and testing purposes only. Further, semi-annual reports summarizing data and preliminary findings shall be submitted to the Commission. It is suggested that the Department of Agriculture work with the State Division of Aquatic Resources and other affected agencies to prepare the monitoring program in light of the difficult technical questions raised by this application. A particular concern is the coordination of this monitoring program with the ongoing National Park Service study by Anne Brasher. A draft of this plan shall be submitted to the Commission staff within ninety (90) days for technical review and comment. Results of the monitoring program shall be used to make recommendations to the Commission on any additional use of the wells, and shall be made readily available to all interested parties.

25. That the Commission approves the well construction permit for the Kamiloloa-Waiola Well (Well No. 0759-01), subject to the standard well construction conditions and the special conditions for the pumping well for the aquifer tests.

26. That the Commission authorizes the Chairperson to approve and issue a pump installation permit upon acceptance of adequate pump test result, subject to the standard pump installation conditions.

27. Should the well be used for back-up domestic supply, applicant is advised to contact DOH or otherwise ensure safe drinking water quality is maintained.

28. The applicant shall follow the agreed monitoring plan.

29. If pesticides used by the applicant are found in ground or surface water and can be traced to the applicant's use, the CWRM may revoke the permit immediately upon such finding.
30. Issuance of the interim permit shall be withheld until the reservation of water for DHHL is set by rule. Applicant may continue this existing use within the approved limits.

31. The applicant shall submit well modification and pump installation permit applications for administrative approval by chairperson prior to beginning any work required to complete well.

32. Should any stream flow impacts result from use, petition to amend interim instream flow standards shall be submitted.

33. Should any dewatering result from use, pumping shall cease immediately.

34. Shall submit accurate schematic diagram of distribution system for the battery of 5 wells.

35. Shall be subject to a 6-month independent audit & monitoring.

36. Final pump capacity shall be determined from pump test results & approved administratively by signature of chair.

37. The permittee shall seek and submit to the Commission within ninety (90) days written confirmation from the Department of Land Utilization of the non-conforming use.

38. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the chairperson.

39. The duration of the interim permit shall be:
   a. To July 1, 2006, or
   b. Until treated wastewater is available and acceptable for use, or
   c. Until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

40. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

41. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

42. Require adherence to the chloride sampling protocol and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

43. Require adherence to the Conservation Conditions.
44. In the event a water shortage is declared by the Commission, permittees in the <Insert Aquifer System> shall comply with the <Insert Aquifer System> water shortage plan adopted by the Commission.

45. The permittee shall contact the Department of Health, Clean Water Branch and obtain the necessary discharge permit(s).

46. Permit shall be interim and replaces existing WUP for 2051-07 & 11.

47. Applicant shall submit an acceptable archaeological inventory survey report to DHP. If historic sites affected, a plan to mitigate these affects must be accepted by DHP and completed by applicant.

48. Should the well be used for back-up domestic supply, applicant is advised to contact DOH or otherwise ensure safe drinking water quality is maintained.

49. (The permittee) may report monthly pumpage on yearly basis.

50. Prior to issuance of any permits, must submit filing fee for after-the-fact pump installation permit.

51. The term of this permit shall be twenty years from the date of issuance of the permit with a five-year Board review to determine compliance with the provisions of the permit.

52. The amount of water to be withdrawn under this permit shall be 0.19 mgd, averaged annually, for irrigation use. This permitted use of 0.19 mgd when added to a preserved use of 0.27 mgd amounts to a total of 0.46 mgd, averaged annually, which may be withdrawn from well 1646-01.

53. The use authorized by the permit must not interfered substantially and materially with existing individual household uses and existing uses.

54. The use of this well shall be subject to the shortage and emergency powers of the Board of Land and Natural Resources (BLNR).

55. This permit may be suspended or revoked, in accordance with Chapter 166.

56. The permit holder may be required to relinquish this permit to BLNR, in accordance with Chapter 166.

57. The withdrawal from Well 1646-10 shall be recorded and reported to DLNR on a monthly basis by the permittee.

58. In the event that emergency water use occurs, the permittee shall notify the Commission in writing within one (1) day of pumping, to in form the Commission as to the nature of the emergency and the expected duration of the emergency. A water
use report shall also be filed pursuant to Standard Condition 10 and Administrative Rule 13-168-7.

59. Note DOH’s requirements related to non-potable water systems (attached to original permit).

60. Standard Condition 16 requiring the submittal of a water shortage plan is waived.

61. All non-potable spigots and piping shall be clearly labeled as “DO NOT DRINK, NON-POTABLE” to prevent direct human consumption.

62. Standard Condition 10 is modified. Due to the inability to take water level measurements, the requirement to measure monthly water levels is waived. In addition, as long as the U.S. Geological Survey is collecting and analyzing the chloride content of the well water, the requirement for the permittee to measure and report chlorides is also waived.

63. Well elevation components must be surveyed by a licensed surveyor and this information must be submitted to commission prior to issuance of permanent permit.

64. The permittee shall obtain approvals from the Department of Health and the U.S. Environmental Protection Agency prior to use of the water.

65. This water use permit, WUP No. <Insert #>, shall supersede WUP No. <Insert #>.

66. WUP No. <Insert #> is revoked.

67. Standard Condition 17 is waived.

68. Standard Condition 22 for interim water use permits shall not apply.

69. To supplement our records, we request that you provide a map of the Galbraith Est. lands west of Wahiawa (2100 ac+) and the associated TMK’s for use area.

70. Deferred action on portion requested for golf course irrigation pending further refinement of irrigation requirement and a feasibility study for utilization of surface water sources, including Wahiawa Reservoir.

71. Written justification be provided for any 'cushion' of 0.5 mgd.

72. The water use permit shall be an interim permit. The duration of the interim permit shall be until treated wastewater is available and acceptable for use. The permittee shall continue discussions with Honolulu Board of Water Supply regarding the use of reclaimed water.

73. The permittee is put on notice that this is a qualified approval in that this permit may be modified or revoked prior to the expiration of the interim permit if the
Commission decides that the use of additional basal ground water for dust control and landscape irrigation is not reasonable-beneficial use.

74. The permittee encouraged to use drought-tolerant landscaping to conserve water.

75. Should the applicant provide written evidence that the county DHCD approves a 201E exemption for the elderly affordable housing project then the applicant may modify a corresponding portion of their existing aquacultural use to be used by the exemption approved project within the Commission approved water use permit limits under recommendation 5.

76. The applicant shall obtain a water lease/permit from Land Division prior to actual use of the well water.

77. Require the permittee to sign a contract by May 14, 1998 with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well Nos. 1900-02, 17 to 20, and 1901-03.

78. Standard Condition 9 is waived.

79. Standard Condition 10 is modified to exempt the permittee from monthly measurements of salinity and temperature.

80. Standard Condition 10 is waived.

81. Applicant must seek a determination from BLNR and Land Mgt Div as to whether water license required. If required, license must be obtained prior to issuance of permit. If not, permit will be issued w/out further action.

82. Commission defers action on use in excess of 452,000 gpd pending additional info from BWS and further staff analysis.

83. The permit shall be subject to the Commission’s sustainable yield review by December 1990.

84. The Commission shall delegate to the Honolulu Board of Water Supply the authority to allocate the use of water for municipal purposes, in accordance with §174C-48(b) HRS.

85. Honolulu Board of Water Supply shall be exempt from the requirements of permit modifications as provided in §174C-57.

86. BWS must participate in discussions, to be coordinated by Commission Staff, regarding a monitoring program to address impacts to Kaneohe Bay water quality, prior to any action on applications for future municipal uses.

87. A pump installation permit application must be made and approved prior to the installation of a permanent pump.
88. The water withdrawn shall be 0.7 mgd for municipal use.

89. The installed pump capacity of the well shall not be more than 700 gpm or 1.01 mgd.

90. The term of permit shall automatically expire twelve months from the date of issuance.

91. The Honolulu Board of Water Supply may continue to submit monthly water data on their own form, provided that the data are submitted in a format that is acceptable to the Commission staff.

92. Standard Condition 7 shall not apply.

93. Standard Condition 22 shall not apply.

94. Standard Condition 10 is modified to exempt the permittee from monthly measurements of salinity and temperature.

95. This permit shall be subject to conditions providing for stream restoration if the Commission determines that additional water should be returned to the streams.

96. HECO 1 mgd for industrial use

97. Campbell Estate 1 mgd for municipal use through BWS, by separate agreement with HECO

98. BWS 1 mgd for municipal use.

99. The permit shall be subject to the Commission’s sustainable yield review by <Insert Date>.

100. The applicant shall obtain the current version of the Department of Health’s Guidelines Applicable to Golf Courses in Hawaii. Where relevant and viable, items of the guidelines should be implemented and sustained appropriately. To obtain the current version, contact the Safe Drinking Water Branch, Environmental Management Division at 808-586-4258 (Honolulu).

101. The future use portion of the application shall be deferred until existing uses in the Koolauloa area are established.

102. The water to be withdrawn under this permit shall be a total of 0.03 mgd (0.02 mgd preserved plus an additional 0.01 mgd permitted use), averaged annually, for domestic and irrigation use.

103. Existing well 1851-09 shall be properly sealed by a licensed drilling contractor. A well modification permit application, enclosed, shall be submitted to the Department for approval of the well sealing. A filing fee for sealing the well will not be required.
104. The permittee is required to test the source using a certified private laboratory and submit the test results to the Commission within three (3) months. The Commission will then forward the results to the Department of Health for their review. The Department of Health recommends that the well be routinely tested for microbiological and chemical parameters thereafter.

105. The permittee is required to submit a completed Registration of Well and Declaration of Water use by <Insert Date>.

106. The permittee shall contact the Department of Health for a written determination on the status of their water system and comply with any Department of Health requirements for monitoring and testing.

107. In the event that the original spring source decontaminates, the new well authorized will be shut down.

108. That within each aquifer the total permitted use shall not exceed the sustainable yield.

109. That any water available for allocation shall be for in-district use.

110. That scheduled reductions to Oahu Sugar Co. permitted use shall be initiated upon final termination of an Osco lease or sub-lease, whichever occurs later.

111. That permits for water use issued in accordance with the proposed schedule shall be interim permits subject to review and adjustment by 1995.

112. That the permit shall be an interim permit for a new use which is afforded to existing users as specified in §13-171-20.

113. That the original allocation of 0.200 mgd shall be taken to hearing for possible revocation at a later date to complete the transfer of the water use permit entirely to Well No. 3407-02. This revocation would reduce the current allocation afforded to the Kunihiro Well (Well No. 3406-06) to zero.

114. This allocation incorporates the unspecified domestic needs of the applicant and therefore necessitates a single meter be installed at the well.

115. Should any impacts to nearby wells or streams be established by the use of this well, the applicant shall address these issues to the satisfaction of the Commission.

116. If an economically feasible nonpotable source is identified, the applicant shall convert to the alternative nonpotable source.

117. The permit shall be subject to the Chairperson's approval of a water use plan recommending possible measures to prevent or minimize saltwater contamination and establish courses of action to follow should the aquifer become saline to use.
118. Permittee shall provide the necessary end-use information on the 10th residence to allow regulation of the use under Chapter 174C.

119. Standard Conditions 10 & 18 shall not apply.

120. Standard Condition 10 is modified to exempt the permittee from the requirement to install a flowmeter. Salt water withdrawals may instead be estimated based on pumping capacity and run time.

121. The applicant shall review the existing year long period of pumpage and streamflow data and provide analysis on ground and surface water interaction. Deadline is January 25, 1994.

122. The water use permit for Well Nos. 2301-27 to -32 for 0.75 mgd (WUP No. 419) shall be revoked upon issuance of a pump installation permit for the well.

123. The permittee shall use mulching to decrease evaporative losses and manage irrigation scheduling to minimize water demand.

124. The permittee shall submit a detailed agricultural plan to support any future water use permit application for increased agricultural use at this parcel.

125. If not already obtained, the permittee shall seek and obtain any necessary permits from the Department of Health for the proposed discharge to Malaekahana Stream.

126. Standard Condition 10 is modified to waive the requirement for installing a water meter on Well Nos. 2358-21, 22, and 29. The permittee shall install a water meter on Well No. 2358-26 to measure total monthly flow through the discharge line. This quantity should then be assumed to be the rate of natural flow from the other three wells for monthly reporting purposes.

127. The permit shall be effective upon submittal of documentation by Navy that it has met the DOH requirements for a public system.

128. This WUP shall be subject to Army's application for a WUP to reduce the permitted use of the Army's Schofield Shaft (2901-02 to 04, 10) by 0.208 mgd to a new total of 5.648 mgd. The Army's application shall be submitted within 60 days after the approval of this WUP or this WUP shall be void. Approval of the modification request shall be obtained from the CWRM prior to use of Well No. 3100-02 and issuance of this WUP.

129. Navy shall submit an after-the-fact PIPA, and approval of the permit shall be obtained prior to use of the well.

130. The well shall not be used for drinking water purposes unless it is properly tested and treated.
131. This permit is approved subject to reclaimed water becoming a practical alternative and provided that the Department of Health approves the reuse application.

132. Should any opae ula be recovered in the well water, the permittee shall notify the Division of Aquatic Resources and provide specimens to the Division of Aquatic Resources for analysis.

133. If a single meter at the well is used, the Commission shall allow an additional 1,000 gallons per day to the water use permit amount for the domestic needs of two residences, although a permit for individual domestic consumption is not required. Otherwise, the applicant must provide a meter to separately measure the irrigation consumption.

134. This permit is approved under the requirement that conversion to either: 1) treated wastewater becoming available for reuse as an alternative supply source, provided that Department of Health concerns over the use of treated effluent over the potable water aquifer have been addressed; and/or 2) other nonpotable source becoming available will occur in a timely manner.

135. These permits shall be subject to a review of actual use within four years for possible modification of the permitted amount.

136. The permit shall be reviewed in two (2) years for possible additional revocation due to nonuse.

137. The allocation is based on the projects listed in Exhibit 5 (of Item 10 of the May 20, 1998 Staff Submittal), except for the Queen’s Beach GC (TMK 139-11-2,3), Lot 9 (TMK 139-17-51), and Varsity Place (TMK 128-24-35).

138. Kamehameha Schools Bishop Estate/Honolulu Board of Water Supply shall transfer the water use permit within ninety (90) days of the effective date of the transfer of the pump station to the Honolulu Board of Water Supply, pursuant to §174C-59 Hawaii Revised Statutes.

139. The permittee shall ensure that the water is recycled by either directing it into the Waiahole Ditch for use by downstream farmers (subject to the approval of the Agribusiness Development Corporation’s Board) or into Waikele Farm’s existing irrigation system.

140. The permittee shall file a completed application to modify WUP No. 758 to reduce the allocation by 0.100 mgd within 60 days. If a completed water use permit modification application is not received within 60 days from this submittal’s date, then the subject water use permit application (WUPA No. 767) shall be deemed denied without prejudice without the need for another hearing.

141. The water withdrawn shall be for municipal use. No improvements to the existing sources are required as the existing source capacities are greater than the increase.
142. Water license must be determined through LM.

143. Proposed other uses will be considered at a later date.
Water Use Permit Survey
(Please complete one survey form for each WUP)

WUP Number: 784 Well Numbers: 1901-06, 1902-1, 09, 10 + 1

Contact Information (of the person who will be present at site visit):
Name: Kalani Voeller
Phone for phone interview: 282-0181 Fax: 689-6757
Email: Higal@contract.com
Best time to reach for phone interview: 1:00 pm

Property Information (of the water use/well location):
Address: Haiku Hale, Country Club (under construction)
City: Maui Beach Zip: 96764
Well Location TMK (list all if multiple wells present): 9-1-34:001,003,009
Water Use TMK (list all if used on multiple lots): 9-1-34:003

Water Use/Well Information:
Is the water source currently in use? Yes ☐ No ☐
If no, please explain: No other use under construction

What are you currently using the water for? (example: "Use for 45 acres of diversified agriculture and 3 residences"): Golf course irrigation

Is a flow meter installed and working properly? Yes ☐ No ☐
If no, please explain:

Do you submit monthly water use reports to the State? Yes ☐ No ☐
If no, please explain:

Field Investigations:
A representative from Brown and Caldwell will be visiting wells in your area over the next several months between the times of 9:00 am and 5:00 pm. Each site investigation will take approximately 1-2 hours. Please indicate up to three potential days of the week and availability times for an on-site inspection of the well location and verification of water use compliance. The permit holder must provide Brown and Caldwell with at least five (5) working days notice of the need to reach you.

Option #1 Date (M-F): Mon. Time: 9:00 am ☐ 12:00 pm ☐ 3:00 pm ☐
Option #2 Date (M-F): Tue. Time: 9:00 am ☐ 12:00 pm ☐ 3:00 pm ☐
Option #3 Date (M-F): Wed. Time: 9:00 am ☐ 12:00 pm ☐ 3:00 pm ☐

Once this survey is returned, a Brown and Caldwell representative will be contacting you to conduct a phone interview and finalize the exact date and time of your field investigation. Please fax/mail completed surveys by December 12th, 2007 and direct any questions related to this survey to Mr. Milo Smith of Brown and Caldwell at:
1099 Alakea Street, Suite #2400
Honolulu, HI 96813
Tel: (808) 203-2661
Fax: (808) 533-0226
mcsmith@brownca.com

For Official Use Only
Received: 2/4/07 Information Updated: 2/17/07 Phone Interview Complete: 3/6/07

Notes/Comments:
Phone Interview

WUP Number: 764
Well Number(s): 1A01-06, 1A02-01, 09-10-11

Contact Name: Kalozi Voeller
Phone Number: 292-0181

Attempt #1: Date/Time: 3/12/20 (2:30) Result: 28 Reached
Attempt #2: Date/Time: N/A Result: N/A

Well Location TMK(s):
Water Use TMK(s):

Water Source Address: Hoakalei Country Club (Under Construction)
City: Ewa Beach Zip Code: 96706

Currently using water source? Yes ☒ No ☐
Notes/Comments: Use for golf course irrigation

How often is the water source being used?
Daily ☐ Weekly ☐ Monthly ☐
Notes/Comments:

How long have you been using this water source?:

Has there been any rezoning of the water source/water use properties? Yes ☐ No ☒
Have you reported the rezoning to the State? Yes ☐ No ☐ N/A ☒
If no, explain:

Scheduled field investigation day/time: 3/12/20 @ 1:00 PM
Notes (Special directions, site conditions, potential hazards, general notes, etc.):

Comments To Make:
- Although we prefer that you do not change your scheduled field investigation time, if you require a reschedule, you must provide Brown and Caldwell with at least five (5) working days notice of the need to reschedule.
- A representative from Brown & Caldwell will be making a reminder phone call to you sometime during the week prior to your scheduled field investigation.
- It is very important that you provide access to the site at the day and time agreed upon. Due to a very tight schedule, if you fail to provide access at the agreed upon time and/or do not reschedule with at least a five (5) working day notice, a makeup date will not be allowed.
- If for some reason you don't know where your well head is located, it would be a good idea to locate it prior to your field investigation to help make the visit go quickly and smoothly.

Interviewed By: M.S. Date: 3/12/20 Time: 2:30 PM
Field Investigation Checklist

WUP Number: 784  
Well Number(s): 1901-06, 1902-01, 09-10-11

Water Source
Well Location TMK(s): 9-1-012:039, 9-1-012:057, 9-1-012:039, 9-1-012:039
Well Head GPS Coordinates:  
Latitude: Below  
Longitude: Below  
Well Type: Pump

Currently using water source?  
Yes ☒  
No ☐

Notes/Comments:  
Sources in use, not yet in use

Is there a flow meter installed?  
Yes ☒  
No ☐

Is the flow meter operational?  
Yes ☒  
No ☐

Notes/Comments: ___________________________________

Water Use
Water Use TMK(s): 9-1-012:039, 9-1-012:045, 9-1-012:057

What is the water being used for?  
Golf course irrigation & water features

Is the water being used within the permitted boundaries?  
Yes ☐  
No ☒

If no, explain  
N/A - No water in use yet

Is there any observed wasting of water or water loss?  
Yes ☐  
No ☒

If no, explain: ___________________________________

Are the permit conditions being complied with?  
Yes ☒  
No ☐

If no, explain: ___________________________________

Other
Photographs of:  
Water Source ☒  
Usage Area ☒  
Water Meter ☒  
Pump/Motor ☒

General Notes/Comments:  
Flume meter installed, well assembled

1901-06: 21'11" 17.6" N 158° 01' 39.6" W (12°F)  
1902-01: 21'10" 52.5" N 156° 02' 22.9" W (13°F) - Arterial in use
1902-06: 21'12" 01.7" N 156° 01' 57.9" W (14°F) - Drilled not in use
1902-10: 21'10" 08.1" N 158° 01' 57.9" W (14°F)  
1902-11: 21'13.6" N 158° 01' 49.6" W (12°F) - Flow meter installed, well assembled

Investigated By:  
M S.  
Date: 3/12/08  
Time: 1:00 p.m.
<table>
<thead>
<tr>
<th>Well ID:</th>
<th>Well Name</th>
<th>WUP MGD:</th>
<th>Beginning:</th>
<th>Ending:</th>
</tr>
</thead>
</table>

### 12 Month Moving Average

![Graph showing 12 Month Moving Average](image-url)

- **MGD**
- **MAV12**
- **WUP**

*Monday, September 10, 2007*
Dear Water Use Permittee:

Hawaii Prince Golf Club/Hawaii Prince Hotel Waikiki Corp.,
Well Nos. 1900-02, 1900-17 to 20, 1901-03, WUP No. 469, 0.301 mgd, TMK 9-1-10:6

Haseko (Ewa), Inc., Well Nos. 1901-06, 1902-01, 1902-09 to 11, WUP No. 650, 3.300 mgd, TMK 9-1-12:5

Department of Parks and Recreation, Well No. 2001-03, WUP No. 167, 0.030 mgd, TMK 9-1-61:35

Palm Court Association, Well No. 2002-12, WUP No. 169, 0.040 mgd, TMK 9-1-61:22

Palm Villa II Association, Well No. 2001-08, WUP No. 168, 0.048 mgd, TMK 9-1-61:27

Arbors Association, Well No. 2001-07, WUP No. 171, 0.063 mgd, TMK 9-1-61:32

U.S. Fish & Wildlife, Well No. 2101-14, WUP No. 247, 0.216 mgd, TMK 9-1-17:12

Gentry Development Co., Well No. 2001-04, WUP No. 302, 0.040 mgd, TMK 9-1-61:7

Gentry Development Co., Well No. 2001-09, WUP NO. 344, 0.023 mgd, TMK 9-1-61:2

Ewa by Gentry Community Association, Well No. 2001-05, WUP No. 450, 0.066 mgd, TMK 9-1-70:132

Gentry Homes, Ltd., Well No. 2001-12, WUP No. 504, 0.249 mgd, TMK 9-1-102:31

Gentry Homes, Ltd., Well No. 1901-05, WUP No. 505, 0.056 mgd, TMK 9-1-69:8

U.S. DOC/NOAA/NWS, Well No. 1900-23, WUP No. 501, 0.023 mgd, TMK 9-1-1:1

Coral Creek Golf, Inc., Well No. 2002-17, WUP No. 577, 0.498 mgd, TMK 9-1-69:10

Coral Creek Golf, Inc., Well No. 2001-13, WUP No. 578, 0.800 mgd, TMK 9-1-69:10

Coral Creek Golf, Inc., Well Nos. 2001-14, 2002-15, 17, 19,
WUP No. 579, 0.892 mgd, TMK 9-1-69:10&11, 9-1-61:54

AOAO Suncrest/The Shores/Lombard Way/Avalon, Well No. 2001-10,
WUP No. 629, 0.022 mgd, TMK 9-1-10:17

State Housing Community Development Corporation of Hawaii,
Well Nos. 2003-04,07, WUP No. 432, 0.494 mgd, TMK 9-1-16:25

State Housing Community Development Corporation of Hawaii,
Well Nos. 2003-08, WUP No. 520, 0.237 mgd, TMK 9-1-16:108

Kapolei People’s Inc., Well Nos. 2003-01,02,05, WUP No. 438, 1.000 mgd, TMK 9-1-16:25

Honolulu Board of Water Supply, Well Nos. 1905-08,10, WUP No. 740, 0.302 mgd, TMK 9-1-16:1

Conversion of Interim Water Use Permits for
New Irrigation Uses to Permanent Water Use Permits
Puuloa and Kapolei Ground Water Management Areas, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on the subject water use permits.
By a unanimous vote at their meeting on July 12, 2006, the Commission corrected the error of approving and issuing interim permits for new irrigation uses in the Puualoa and Kapolei Ground Water Management Areas of the Ewa Caprock Aquifer Sector Area by converting the subject interim water use permits to permanent water use permits. All terms and conditions of the permits shall remain unchanged, except for Special Condition d., which is deleted.

The Commission ruled that permittees shall be notified by letter of the Commission’s action to convert these water use permits from interim to permanent and the deletion of Special Condition d. The Commission further ruled that re-issuance of these water use permits is not necessary.

Please be advised that a compliance review will be initiated shortly as required under §174C-56 Hawaii Revised Statutes. We recommend that you carefully review the conditions of your permit and ensure that you are in compliance with all Standard and Special Conditions.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

DEAN A. NAKANO
Acting Deputy Director

LYN:ss
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;

EXHIBIT 3
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the [Puuloa or Kapolei] Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the [Puuloa or Kapolei] Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

EXHIBIT 3
16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the [Puuloa or Kapolei] Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
SPECIAL CONDITIONS

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment C.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

Exhibit 4
Ref: 650.wup

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well Nos. 1901-06, 1902-01, 09, 10, 11
Puuloa Ground-Water Management Area, Oahu

This letter transmits your water use permit for the EP 27 Battery (Well No. 1901-06, 1902-01, 09, 10, 11) for use of 3.300 million gallons per day (mgd) of water on a 12-month moving average basis that was administratively modified by the Commission on Water Resource Management (Commission) per Declaratory Ruling DEC-ADM97-A1 and Administrative Rule 13-171-23(b). This water use permit, WUP No. 650, supersedes WUP Nos. 192 and 347, which have been cancelled. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 19:

Special Conditions

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment A and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment B.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit.

We draw your attention to two key conditions of your permit that require your response. First, you are required to keep a record of your monthly total pumpage, water level, salinity, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

Second, you are required to submit a water shortage plan to the Commission within thirty (30) days of the issuance date of this permit. Your water shortage plan simply identifies what you are willing to do should the Commission declare a water shortage situation in the Puuloa Ground-Water Management Area and can be as short as a one page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from all sources. The Commission is required, by law, to formulate a plan to implement such area-wide reductions, which should accommodate, include, and be consistent with your plans. Therefore, your help, by submitting your water shortage plan, is greatly needed in formulating the Commission's overall Water Shortage Plan.

If you have any questions, please call Lenore Y. Nakama of the Commission staff at 587-0218.

Sincerely,

Peter T. Young
Chairperson

Attachments
**GROUND-WATER USE PERMIT**

**WUP NO. 650**

**PERMITTEE**

<table>
<thead>
<tr>
<th>Permittee/Water User</th>
<th>Landowner of Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Address</td>
</tr>
<tr>
<td>Haseko (EWA), Inc.</td>
<td>Same</td>
</tr>
<tr>
<td>820 Mililani St., Ste. 810</td>
<td></td>
</tr>
<tr>
<td>Honolulu, HI 96813</td>
<td></td>
</tr>
</tbody>
</table>

**PERMITTED SOURCE INFORMATION**

<table>
<thead>
<tr>
<th>Island</th>
<th>Oahu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Management Area</td>
<td>Ewa Caprock</td>
</tr>
<tr>
<td>Aquifer Sector</td>
<td>Puuloa</td>
</tr>
<tr>
<td>Aquifer System</td>
<td></td>
</tr>
<tr>
<td>System Sustainable Yield</td>
<td>1000 mg/l of Chloride</td>
</tr>
<tr>
<td>Well Name</td>
<td>EP 27 Battery</td>
</tr>
<tr>
<td>State Well No.</td>
<td>1901-06, 1902-01, 09, 10, 11</td>
</tr>
</tbody>
</table>

**PERMITTED USE INFORMATION**

<table>
<thead>
<tr>
<th>Reasonable beneficial use</th>
<th>Dust Control, Golf Course and Landscaping Irrigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>3.300 mgd</td>
</tr>
<tr>
<td>Location of water use</td>
<td></td>
</tr>
<tr>
<td>TMK #</td>
<td>9-1-12:5</td>
</tr>
<tr>
<td>Address</td>
<td>Ocean Pointe</td>
</tr>
<tr>
<td>State land use classification</td>
<td>Urban</td>
</tr>
<tr>
<td>County zoning classification</td>
<td>Various</td>
</tr>
</tbody>
</table>

Pursuant to Hawaii’s State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the permittee is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 and July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.
14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Attachment
October 3, 2008

Mr. Raymond S. Kanna
HASEKO (Ewa), Inc.
91-1001 Kaimalie Street, Suite 205
Ewa Beach, HI 96706-5005

Dear Mr. Kanna:

Water Meter Requirement and Notice of No Pumping
Well Nos. 1902-09 to -11 and 1901-06

We received, on March 6, 2008, the Well Completion Reports Part II from your pump installation contractor for Ocean Pointe Well Nos. 1 to 4 (Well Nos. 1902-09 to 11 and 1901-06). We accepted these reports as complete on October 1, 2008, with the exception of the installation of a flowmeter on each well. Submittal of these well completion reports to the Commission completes your pump installation contractor's obligations under the pump installation permit for these wells. We have sent a letter to Beylik Drilling & Pump Services to this effect and you will receive a copy for your record.

The pump installer has indicated that water meters have not yet been installed on any of the subject wells. By our acknowledgement that the contractor's obligations under the permit are complete, the responsibility to install flowmeters on each of these wells is transferred to HASEKO (Ewa), Inc.

Please be aware that flowmeters must be installed and operational, and the attached Water Meter Installation Report form completed and submitted to our office prior to pumping these wells for purposes other than testing. (Please submit a separate Water Meter Installation Report for each well.) Upon our receipt of an acceptably complete water meter installation report for each well, we will issue a certificate of pump installation completion for each well to acknowledge that all permit obligations have been satisfied. This certificate will allow you to begin pumping and using water from these wells on a permanent basis. Use of water from this well (for any purpose other than well and aquifer testing) without a certificate of pump installation completion is a violation and is subject to fines of up to $5,000 per day.

If you have any questions, please contact Denise Mills of the Commission staff at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DM:ss
Encl: Water Meter Installation Report

c: Beylik Drilling & Pump Services, Inc.
Ms. Toni Gonsalves  
Beylik Drilling & Pump Services, Inc.  
91-259A Olai Street  
Kapolei, HI 96707

Dear Ms. Gonsalves:

Well Completion Reports Part II  
Well Nos. 1902-09 to -11 and 1901-06

We received the Well Completion Reports Part II for the Ocean Pointe Well Nos. 1 to 4 (Well Nos. 1902-09 to -11 and 1901-06) on March 6, 2008, and acknowledge that these reports are complete with the exception of the flowmeter installation. We understand that the meter installation will be the responsibility of the landowner/well operator and will likely follow planned well testing.

These reports complete your obligations under your pump installation permit for the subject wells. The landowner and/or well operator will be responsible for seeing that a flowmeter is installed and for submitting a meter installation report to the Commission after that work has been completed. For your information, we will issue a certificate of pump installation completion to the landowner and/or well operator upon receiving documentation showing that the meter is installed and operational. No pumping is allowed for purposes other than well and aquifer testing until we have issued a certificates of pump installation completion for each well.

If you have any questions, please contact Denise Mills of the Commission staff at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.  
Deputy Director

DM:ss

c: Raymond S. Kanna, HASEKO (Ewa), LLC
MEMO and ROUTE SLIP (ver. 03/04/2008)

WCR 2 Check for Well No. 1902-09-11 & 1901-06 (survey to regulation memo)

1. **Pump Tests Check** (special condition of PIP? Yes/No: D. England)
   - **Yes**
   - **No**
   - **If no, describe deficiency**

   **Step-Drawdown Test:**
   - followed WCPI Stds
   - analysis attached
   - proposed pump cap o.k.
   - □ <70 gpm no test required

   **Aquifer Pump Test:**
   - followed WCPI Stds
   - T & S analysis attached
   - □ <50 gpm no test required

   **Potential Well Interference:**
   - □

   **Potential Stream Impacts:**
   - □
   - stream names:

   **Additional Testing or Data Required:**
   - □

   **Pump Test Comments Attached:**
   - Saltwater wells - n.p.t. req'd

2. **Pump Installation Check** Mitch Ohye
   - □
   - **Initial**
   - **Yes**
   - **No**
   - **If no, describe deficiency**

   data complete
   - followed Special Cond & Elev.
   - well database updated

   **Attachments for Acceptance:**
   - 1WCR2 ACCEPTANCE LETTER
   - 2PUMP INST. COMPLETION CERTIFICATE
   - 3METER INSTALL. REPORT (IF NECESSARY)
   - 4WUR FORM (if necessary)

3. **Charley/Ryan**
   - **Initial**
   - Take action based on above analysis

   - To be sent to driller
   - To be sent to landowner/operator
   - Staff internal checks

4. **Roy**
   - **Initial**
   - Check (Entered WCR 2/PICC accept date into database)

5. **Susan Hoagbin**
   - **Initial**
   - Finalize

6. **Ken**
   - **Initial**
   - Signature

7. **Faith Ching**
   - **Initial**
   - Enter into WUR database

8. **Charley/Ryan**
   - File
   - **Denise**

03/31/08
### WELL COMPLETION REPORT - PART II

**Pump Installation**

**Instructions:** Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0226. For updates to this form or additional information, please visit our website at [http://www.hawaii.gov/dlnr/cwrm/](http://www.hawaii.gov/dlnr/cwrm/).

---

1. **State Well No.:** 1902-09  
   **Well Name:** Ocean Pointe #1 - Hoakalei  
   **Island:** Oahu

2. **Address:** Ewa Beach, Oahu  
   **Tax Map Key:** 9-1-012:039

3. **Pump Installation Company:** Beylik Drilling & Pump Svc, Inc.

4. **Date Pump Installed:** 12/26/2007

5. **PERMANENT PUMP INFORMATION**

   **Pump Type, Make, Serial No.:** Subm, Grundfos, P10736145

   **Rated Capacity:** 200 gpm at head of: 40 ft.

   **Motor Type, H.P., Voltage, rpm:** Subm, 3 HP, 230V, 3600 RPM

   **Pump type (check one):**
   - [ ] Deep Well Turbine
   - [x] Submersible
   - [ ] Rotary
   - [ ] Rotary-Displacement
   - [ ] Reciprocating
   - [ ] Impulse
   - [ ] Centrifugal

6. **Method of flow measurement:**
   - [ ] Flowmeter w/ totalizer
   - [ ] Other, explain and attach schematic

7. **Fill in the as-built section on the other side of this sheet.**

8. **Attach the rating curve for the installed pump.**

9. **Attach photograph of well clearly showing the benchmark on the concrete pad, the well head, and the method of flow measurement.**

10. **Well Owner Company:** Haseko Inc  
    **Contact:** Ocean Pointe Office  
    **Address:** 91-1001 Kamalie Street, Ste 205  
    **Phone:** 808-689-7772  
    **Fax:** 808-689-5757

11. **Land Owner Company:** Same As Above  
    **Contact:**  
    **Address:**  
    **Phone:**  
    **Fax:**

12. **Remarks**

---

**Pump Installation Contractor (print):** Beylik Drilling & Pump Svc, Inc  
   **License No.:** AC-21896

**Signature:**  
**Date:** 2/26/2007
7. AS-BUILT PUMP SECTION (Please attach as-built if different from diagram provided below)

Bench mark elevation surveyed to nearest 0.01 ft. = 28.4 ft. mean sea level

Elevation of top of chase tube = 29.4 ft. mean sea level

Pump intake depth = 32 ft. (referenced to bench mark)

Chase tube depth = 30 ft. (referenced to bench mark)

If airline installed, bottom of airline elevation = N/A ft. mean sea level
1. State Well No.: 1902-10  
   Well Name: Ocean Pointe #2 - Hoakalei  
   Island: Oahu

2. Address: Ewa Beach, Oahu  
   Tax Map Key: 9-1-012:039


4. Date Pump Installed: 12/26/2007

5. PERMANENT PUMP INFORMATION
   Pump Type, Make, Serial No.: Subm, Grundfos, P10736146
   Rated Capacity: 200 gpm at head of: 40 ft.
   Motor Type, H.P., Voltage, rpm: Subm, 3 HP, 230V, 3600 RPM
   Pump type (check one):
   - Deep Well Turbine
   - Submersible
   - Centrifugal
   - Rotary
   - Rotary-Displacement
   - Reciprocating
   - Propeller
   - Rotary-Gear
   - Impulse

6. Method of flow measurement:
   - Flowmeter w/ totalizer
   - Other, explain and attach schematic

7. Fill in the as-built section on the other side of this sheet.

8. Attach the rating curve for the installed pump.

9. Attach photograph of well clearly showing the benchmark on the concrete pad, the well head, and the method of flow measurement.

10. Well Owner Company: Haseko Inc  
    Contact: Ocean Pointe Office
    Address: 91-1001 Kamalie Street, Ste 205
    Phone: 808-689-7772
    Fax: 808-689-5757

11. Land Owner Company: Same As Above  
    Contact: 
    Address: 
    Phone: 
    Fax: 

12. Remarks

   Pump Installation Contractor (print): Bevlik Drilling & Pump SVC, Inc  
   Lic. No.: AC-21896
   Signature: 
   Date: 2/26/2007
7. AS-BUILT PUMP SECTION (Please attach as-built if different from diagram provided below)

Bench mark elevation surveyed to nearest 0.01 ft. = 26.5 ft. mean sea level

Elevation of top of chase tube = 27.5 ft. mean sea level

Pump intake depth = 32 ft. (referenced to bench mark)

Chase tube depth = 30 ft. (referenced to bench mark)

If airline installed, bottom of airline elevation = N/A ft. mean sea level

25 ft
VERIFIED PERFORMANCE TEST  07-09-06A
GRUNDFOS PUMPS MODEL  230S20-1B

FLOW (U.S. GPM) vs. HEAD (FEET)

3-1902-10 OCEAN POINTE #2

TERRY KENNEDY
SEPT. 6, 2007
State of Hawaii  
COMMISSION ON WATER RESOURCE MANAGEMENT  
Department of Land and Natural Resources  
WELL COMPLETION REPORT - PART II  
Pump Installation

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0225. For updates to this form or additional information, please visit our website at http://www.hawaii.gov/dlnr/cwrm/

1. State Well No.: 1902-11  
   Well Name: Ocean Pointe #3-Hoakalei  
   Island: Oahu

2. Address: Ewa Beach, Oahu  
   Tax Map Key: 9-1-012:039


4. Date Pump Installed: 12/26/2007

5. PERMANENT PUMP INFORMATION
   Pump Type, Make, Serial No.: Subm, Grundfos, P10736143
   Rated Capacity: 200 gpm at head of: 30 ft.
   Motor Type, H.P., Voltage, rpm: Subm, 2 HP, 230V, 3600 RPM

   Pump type (check one):
   - Deep Well Turbine
   - Submersible
   - Centrifugal
   - Rotary

   Method of flow measurement:
   - Flowmeter w/ totalizer
   - Other, explain and attach schematic

6. Fill in the as-built section on the other side of this sheet.

7. Attach the rating curve for the installed pump.

8. Attach photograph of well clearly showing the benchmark on the concrete pad, the well head, and the method of flow measurement.

9. Well Owner Company: Haseko Inc  
   Address: 91-1001 Kamalie Street, Ste 205  
   Phone: 808-689-7772  
   Fax: 808-689-5757

10. Land Owner Company: Same As Above  
    Address:  
    Phone:  
    Fax:

11. Remarks

12. Remarks

Pump Installation Contractor (print): Beylik Drilling & Pump SVC, Inc  
   C-57/C-57a/A  
   Lic. No. AC-21896

Signature:  
Date: 2/26/2007
7. AS-BUILT PUMP SECTION

(Please attach as-built if different from diagram provided below)

Bench mark elevation surveyed to nearest 0.01 ft. = 24.75 ft. mean sea level

Elevation of top of chase tube = 25.75 ft. mean sea level

Pump intake depth = 30 ft. (referenced to bench mark)

Chase tube depth = 28 ft. (referenced to bench mark)

If airline installed, bottom of airline elevation = N/A ft. mean sea level

23.22 ft
VERIFIED PERFORMANCE TEST  07-09-06C
GRUNDFOS PUMPS MODEL  230S30-1A

FLOW (U.S. GPM)

HEAD (FEET)

TERRY KENNEDY
SEPT. 12, 2007
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
WELL COMPLETION REPORT - PART II
Pump Installation

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0225. For updates to this form or additional information, please visit our website at http://www.hawaii.gov/dlnr/cwrm/

1. State Well No.: 1901-06  
   Well Name: Ocean Pointe #4- Hoakalei  
   Island: Oahu

2. Address: Ewa Beach, Oahu  
   Tax Map Key: 9-1-012:040


4. Date Pump Installed: 12/26/2007

5. PERMANENT PUMP INFORMATION

   Pump Type, Make, Serial No.: Subm, Grundfos, P10736144
   Rated Capacity: 200 gpm at head of: 30 ft.
   Motor Type, H.P., Voltage, rpm: Subm, 2 HP, 230V, 3600 RPM

   Pump type (check one):
   □ Deep Well Turbine □ Rotary □ Propeller
   A □ Submersible □ Rotary-Displacement □ Reciprocating
   □ Centrifugal □ Rotary-Gear □ Impulse

6. Method of flow measurement:
   □ Flowmeter w/ totalizer Manufacturer Model no. Size
   □ Other, explain and attach schematic

7. Fill in the as-built section on the other side of this sheet.

8. Attach the rating curve for the installed pump.

9. Attach photograph of well clearly showing the benchmark on the concrete pad, the well head, and the method of flow measurement.

10. Well Owner Company Haseko Inc Contact Ocean Pointe Office
    Address 91-1001 Kamalie Street, Ste 205
    Phone 808-689-7772 Fax 808-689-5757

11. Land Owner Company Same As Above Contact
    Address
    Phone
    Fax

12. Remarks

   Pump Installation Contractor (print) Beylik Drilling & Pump SVC, Inc C-57/C-57a/A Lic. No. AC-21896
   Signature Date 2/26/2007
7. AS-BUILT PUMP SECTION (Please attach as-built if different from diagram provided below)

- Bench mark elevation surveyed to nearest 0.01 ft. = 21.20 ft. mean sea level
- Elevation of top of chase tube = 22.20 ft. mean sea level
- Pump intake depth = 27 ft. (referenced to bench mark)
- Chase tube depth = 25 ft. (referenced to bench mark)
- If airline installed, bottom of airline elevation = N/A ft. mean sea level
VERIFIED PERFORMANCE TEST 07-09-06A
GRUNDFOS PUMPS MODEL 230S20-1B

FLOW (U.S. GPM)

HEAD (FEET)

3. 1901-06 DEEP POINTE #4

TERRY KENNEDY
WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via the following items:

☐ Shop drawings  ☐ Prints  ☐ Plans  ☐ Samples  ☐ Specifications

☐ Copy of letter  ☐ Change order  ☐

<table>
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<td>WELL COMPLETION REPORT FOR OCEAN POINTE #4 (1901-06)</td>
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THESE ARE TRANSMITTED as checked below:

☒ For approval  ☐ Approved as submitted  ☐ Resubmit _______ copies for approval

☐ For your use  ☐ Approved as noted  ☐ Submit _______ copies for distribution

☐ As requested  ☐ Returned for corrections  ☐ Return _______ corrected prints

☐ For review and comment  ☐

☐ FOR BIDS DUE  ☐ PRINTS RETURNED AFTER LOAD TO US

REMARKS: ____________________________________________________________

OPY TO 1510T / C FILE

SIGNED: ___

If enclosures are not as noted, kindly notify us at once. FOR: TONI GONZALVES
Ms. Yvonne Y. Izu, Esq.
Morihara Lau & Fong LLP
400 Davies Pacific Center
841 Bishop Street
Honolulu, HI 96813

Dear Ms. Izu:

Request for Variance from Chloride Limit
HASEKO (Ewa), Inc., Water Use Permit No. 784
EP-27 Battery of Wells – Well Nos. 1901-06, 1902-01, and 1902-09 to -11

We received, on July 16, 2008, the letter you sent on behalf of Haseko (Ewa), Inc. (Haseko) requesting a variance from the 1,000 mg/l chloride limit for the EP-27 battery of wells, which draws brackish water from the Puuloa Aquifer System. The EP-27 battery is near the ocean, there are no wells downgradient or other water users downgradient of the EP-27 battery, and Haseko owns the land from the well site to the shoreline.

The Commission on Water Resource Management’s (Commission) July 18, 2001, action to extend interim caprock water use permits delegated the authority to the Chairperson to approve variances from the chloride limit, with consideration to a well’s proximity to the ocean and to other wells, it’s history of chloride concentrations and pumpage, the availability of alternative sources of water, and the possibility of conversion to another source. Under this authority, on March 12, 2003, the Commission granted a variance from the chloride limit for Well No. 1902-01. That variance was to expire six months after the first date of reclaimed water delivery to Haseko’s project area. Our approval of that variance was based on the observation that chloride levels in Well No. 1902-01 fluctuated around the 1,000 mg/l for two years of record, sometimes exceeding this limit, and because chloride levels above this limit are not likely to adversely impact other ground water users in the area.

The EP-27 battery was expanded in 2003 by the construction of Well Nos. 1902-09 to -11 and Well No. 1901-06. Data from the EP-27 battery show that chloride levels have fluctuated around 1,000 mg/l and have frequently risen above 1,000 mg/l. As you have noted, since the cessation of sugar cane agriculture on the Ewa plain, the chloride concentration of well water in the area has gradually increased, as was expected with the loss of imported basal irrigation water.
We understand that Haseko has entered into an agreement with the Honolulu Board of Water Supply (HBWS) to provide reclaimed water from the Honouliuli Wastewater Reclamation Plant to supply nonpotable reclaimed water (R-1 water) for Haseko’s development around the Ewa Marina project. When we met with you on July 3, 2008 you stated that, in early 2008, Haseko started using up to 600,000 gallons per day of R-1 water for golf course irrigation. However, the amount of R-1 water available to Haseko is not sufficient to supply all of the project’s nonpotable water needs. Consequently, Haseko continues to rely on the EP-27 battery to meet its total irrigation and dust control water use needs. If Haseko is required to stop pumping when chloride levels exceed 1,000 mg/l, the only alternative would be to use potable water from the HBWS municipal system to supplement the available R-1 water supply and meet its water demands. This alternative would not result in the most efficient use of available water resources.

For the reasons stated above and in accordance with our delegated authority, Haseko’s request for a variance from the 1,000 mg/l chloride limit is approved. The variance will expire, unless otherwise extended by the Commission, on the date when the marina begins operation. In the event Haseko requires the term of this variance to be extended, a request shall be made in writing at least 180 days before the marina is scheduled to begin operating.

If you have questions or to discuss our comments and questions, please call Denise Mills of the Commission staff at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DM:ss

c: HASEKO (Ewa), Inc.
<table>
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<th>FROM: ROY</th>
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Please: See Me
Review & Comment
Take Action
Type Draft
Type Final
File
Xerox ___ copies

Last paragraph is most compelling argument. Seems counterproductive to allow variance though. Discuss/thoughts?
7/15/02 Authorized monthly sampling for chlorides
(A fm requirement for weekly)

Chloride conc. plot for HASERO Welle
Water use

3/14/03 CWRM variance for 1,000 mg/l C1 limit for Well 1902-01

WUP 784 7/18/01

Use TML 9-1-012.005
July 16, 2008

Ms. Laura Thielen, Chairperson  
Mr. Ken Kawahara, Deputy Director  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Chairperson Thielen and Mr. Kawahara:

HASEKO (Ewa), Inc. (Haseko) is requesting a variance from the 1,000 mg/l chloride limit for the EP 27 Battery of wells (Well Nos. 1901-06, 1902-01, -09, -10, -11) in the Puuloa Aquifer System, Ewa Caprock, O'ahu.

The Commission on Water Resource Management, on July 18, 2001, delegated to Chairperson the authority to approve variances from the chloride limit with consideration of the well's proximity to the ocean and to other wells, its history of chloride pumpage, the availability of alternative sources of water and possibility for conversion.

The EP 27 Battery is near the ocean; there are no other wells downgradient of these wells. Haseko owns the land from the well site to the ocean. Therefore, it is highly unlikely that anyone else will be adversely affected by the granting of this variance.

Since the cessation of sugarcane agriculture on the Ewa plain, the chloride concentration of caprock water at this well site has gradually increased, as was expected with the loss of imported basal irrigation water. Although the most recent data from the EP 27 Battery show chloride levels slightly below 1000 mg/l, the level has fluctuated and frequently risen above the 1000 mg/l chloride limit in the past.

Haseko began using R-1 water from the Honolulu Board of Water Supply to irrigate its golf course earlier this year. Pumping from the EP 27 Battery has decreased considerably with the availability of R-1 water. Nevertheless, because the amount of R-1 water available to Haseko is not sufficient to supply all of the project's non-potable water needs, Haseko continues to rely on caprock water from the EP 27 Battery. Should Haseko be required to halt pumping when chloride levels exceed 1000 mg/l, the only alternative would be to use potable water to the extent that need exceeds R-1 availability.
Ms. Laura Thielen and Mr. Ken Kawahara  
July 16, 2008  
Page 2

Your favorable consideration of this request is greatly appreciated. Should you have any questions, please feel free to contact me.

Very truly yours,

Yvonne Y. Izu  
Attorney for HASEKO (Ewa), Inc.

Cc: Haseko
Yvonne,
Here is an updated history of water use permits approved for Oahu Sugar and, later, HASEKO. I added some information after our meeting last week, including the approved urban uses and agricultural uses and allocations. Please call if you have questions or if you see any errors.

It was nice to meet you last week. --denise

Denise E. Mills
HYDROLOGIST
Hawaii Department of Land and Natural Resources
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813
Phone: (808) 587-0251
Denise.E.Mills@hawaii.gov

HASEKO Ewa_WUP history & chronology_July08.xls
<table>
<thead>
<tr>
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<td>GC, other irrigation</td>
<td>First temporary WUPs for Ewa Caprock WUPAs issued April 28, 1993.</td>
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<td>&quot;</td>
<td>1.5</td>
<td>Extended 1-yr temporary permit, 1.5 mgd</td>
<td>GC, other irrigation</td>
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<td>4/1/1995</td>
<td>Transition 1-yr permit from OSCo to Haseko</td>
<td>&quot;</td>
<td>1.5</td>
<td>Approved 1.5 mgd</td>
<td>GC, other irrigation</td>
<td>OSCo lease expired 12/31/1994</td>
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<td>2.66</td>
<td>Approved 2.66 mgd transfer</td>
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<td>&quot;</td>
<td>&quot;</td>
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<td>&quot;</td>
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<tr>
<td>5/14/1997</td>
<td>Issued WUP #192 for agricultural uses; revoked 0.86 mgd for non-use and reduced approved use to 1.8 mgd.</td>
<td>&quot;</td>
<td>1.8</td>
<td>192</td>
<td>Ag</td>
<td>Water Use Permit #192 assigned for 1.8 mgd allocation for agricultural uses.</td>
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<tr>
<td>5/14/1997</td>
<td>Extended WUP #347</td>
<td>&quot;</td>
<td>1.5</td>
<td>347</td>
<td>Ag</td>
<td>Temporary WUP #347 assigned for 1.5 mgd allocation, extended temporary permit first issued on 3/31/1994.</td>
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Temporary WUP #347 extended annually in July 1998 through 2005. CWRM staff recommended conversion to permanent WUP in July 2006 (see entry for July 12, 2006, below).
# CWRM Action and WUP History

<table>
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<tr>
<td>10/22/1998</td>
<td>Staff recommendation to Commission: Modify WUP #192 to reduce 1.8 mgd allocation to 0.770 mgd. On recommendation from DAG, Commission deferred action on WUP #192 pending legal analysis of process required to modify or revoke permits subject a contested case hearing (in this case the Ewa Marina CCH).</td>
<td>1901-06, 1902-01, 1902-09, 1902-10, and 1902-11</td>
<td>3.30</td>
<td>650</td>
<td>GC</td>
<td>WUP #650 supercedes WUP #347 and #192</td>
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<tr>
<td>10/27/1998</td>
<td>Letter from HASEKO advising CWRM that it concurred with staff's recommendation to modify WUP #192, and reduce allocation to 0.770 mgd; HASEKO would accept as a voluntary reduction in its allocation.</td>
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<tr>
<td>2/19/1999</td>
<td>Letter from CWRM to HASEKO advising that staff recommendation to modify WUP #192 was deferred by Commission on 10/22/1998; extended WUP #347.</td>
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<td>5/15/2003</td>
<td>Modification and combined 347 &amp; 192</td>
<td>3.30</td>
<td>650</td>
<td>GC</td>
<td>WUP #650 supercedes WUP #347 and #192</td>
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<tr>
<td>7/12/2006</td>
<td>Commission action to convert interim WUPs for new irrigation uses to permanent WUPs</td>
<td>3.30</td>
<td>784</td>
<td></td>
<td></td>
<td>WUP #784 supercedes WUP #650. Notice of Commission action sent to all temporary permit holders on August 3, 2006. No permits reissued.</td>
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### Notes:

**Reallocated 1.5 mgd for urban uses (in 1997, incorporated into WUP #347), from 4.16 mgd original allocation. Allocations as follows:**

- 1.08 golf course irrigation
- 0.105 landscape irrigation
- 0.315 maintenance and dust control for fallow fields surrounding golf course
- 2.66 agriculture

\[
\text{Total allocation} = 1.08 + 0.105 + 0.315 + 2.66 = 4.16
\]

**Permitted urban uses:** golf course irrigation, landscape irrigation, and maintenance and dust control.
### Calendar Entry

**Meeting**

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<th>Subject</th>
<th>Mtg w/ Yvonne Izu, Ewa Caprock WUP #650 (Haseko)</th>
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<td>When</td>
<td>Start: Thu 07/03/2008 09:00 AM, End: Thu 07/03/2008 10:30 AM, 1 hr 30 mins</td>
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<tr>
<td>Invites</td>
<td>Required (to): Denise E Mills/DLNR/StateHiUS@StateHiUS, Roy Hardy/DLNR/StateHiUS@StateHiUS, Lenore Y Nakama/DLNR/StateHiUS@StateHiUS</td>
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</table>

**Chair:** DLNR.CW.DLNRCSWM/DLNR/State HiUS

**Sent By:** Denise E Mills/DLNR/StateHiUS

**Where:** Location, CWRM Conf Rm

**Categorize:**

**Description**

**Your Notes**
MEETING WITH CWRM STAFF
RE WUP #650
JULY 3, 2008
9:00 a.m.

I. Background and Status of Project
   • Status of Marina Excavation
   • CDM Reports

II. WUP #650
   A. Background
      • OSCO WUP #192
      • HASEKO WUP #347
      • WUP #650 – Administrative Modification
   B. Allocation Amount
      • Voluntary relinquishment of portion of allocation
   C. Location of Use – TMK Changes
   D. Chloride Variance

III. Reclaimed Water
   A. Current Usage
   B. Caprock as Backup Source
HASEKO -
Ena Marina Development.

Yvonne Izu, Jill (HASEKO)
Roy Hardy, Denise Mill - CANAL

404 permit from Corps - permit conditions, incl. requirement to continue to run model, calibrate.
CDM did the modeling - provided March 2003
- Updated model report -

Started Marina excavation in 1997, didn’t encounter water until 2003; used excavated material for fill in residential areas.

Plan changed due to WUP outfall design & federal regulations; footprint of Marina reduced - June 2002 decision.
- Marina area available around Marina to do what HASEKO required to do. (Permit required to do -
- footprint further reduced = 50 acres, 51.3 acres (6/29/05 H
- Target Marina ready for opening 2011-2012
- Expected to start opening to ocean in 2009

WUP #0503

2003 - HASEKO decided to develop battery of wells
- Check record for 0.770 acres. To HASEKO -
- Voluntary dedication
HASEKO prepared to relinquish its ag allocation (192)
- What is process for voluntary relinquishment?
- CWM needs to meet with AG
  - Can this be done voluntarily administratively?
  - CWM needs to get back to you on process

TMK in permit 650 incorrect (old) is too large
- Will provide corrected TMKs to use in writing

Need to update TMK info

Cl variance - not included in WEP #650
HASEKO doesn't have the variance today
has been getting reclaimed water 600,000 gpd
Want to request the variance again
HASEKO agreement w/ BWS for providing pipe
down ft weathered to convey water to GC

- Still using caprock aquifer for dust control
  - 320K gpd/day - Cl⁻ = 985 mg/l
- Backup source is reclaimed water,
  - BWS agreement to provide potable water if insufficient reclaimed water supply
HASEKO would prefer to use caprock aquifer
HASEKO interested in applying for variance
to use caprock ag as backup source (future)

* Variance can be done administratively (should be administrative)
Marina permit requires giving up caprock permits when reclaimed water available.

Marina WUP says this only, not other permit.
HASEKO (Ewa) reports - received from Yvonne Jan 7/3/08

3008  Updated Groundwater Modeling Study. Ocean Pointe Marina Project. — March 2003
3010  Groundwater Monitoring Data Analysis for 2007. Hoakalei Marina Project
3011  Groundwater Monitoring Data Analysis for 2005. Hoakalei Marina Project
3012  Groundwater Monitoring Data Analysis for 2006. Hoakalei Marina Project

Downloaded to CWRM library db. COs in library.

DM 7/3/08
## HASEKO (Ewa) - State Well No. 1902-01 - 'Ewa Caprock Aquifer

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<td></td>
<td></td>
</tr>
<tr>
<td>5/14/1997</td>
<td>Issued WUP #192 for agricultural uses; revoked 0.86 mgd for non-use and reduced approved use to 1.8 mgd.</td>
<td></td>
<td>1.8</td>
<td>192</td>
<td>Ag</td>
<td>Water Use Permit #192 assigned for 1.8 mgd allocation for agricultural uses</td>
</tr>
<tr>
<td>5/14/1997</td>
<td>Extended WUP #347</td>
<td></td>
<td>1.5</td>
<td>347</td>
<td>Ag</td>
<td>Temporary WUP #347 assigned for 1.5 mgd allocation, extended temporary permit first issued on 3/31/1994.</td>
</tr>
</tbody>
</table>

Temporary WUP #347 extended annually in July 1998 through 2005. CWRM staff recommended conversion to permanent WUP in July 2006 (see entry for July 12, 2006, below).
## HASEKO (Ewa) - State Well No. 1902-01 - 'Ewa Caprock Aquifer
### CWRM Action and WUP History

<table>
<thead>
<tr>
<th>Application Date</th>
<th>CWRM Actions</th>
<th>Well No. (Nos.)</th>
<th>Allocation (mgd)</th>
<th>WUP No.</th>
<th>Use</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/22/1998</td>
<td>Staff recommendation to Commission: Modify WUP #192 to reduce 1.8 mgd allocation to 0.770 mgd. On recommendation from DAG, Commission deferred action on WUP #192 pending legal analysis of process required to modify or revoke permits subject a contested case hearing (in this case the Ewa Marina CCH).</td>
<td>1902-01, 1902-09, 1902-10, and 1902-11</td>
<td>3.30</td>
<td>650</td>
<td>GC</td>
<td>WUP #650 supercedes WUP #347 and #192</td>
</tr>
<tr>
<td>10/27/1998</td>
<td>Letter from HASEKO advising CWRM that it concurred with staff's recommendation to modify WUP #192, and reduce allocation to 0.770 mgd; HASEKO would accept as a voluntary reduction in its allocation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/19/1999</td>
<td>Letter from CWRM to HASEKO advising that staff recommendation to modify WUP #192 was deferred by Commission on 10/22/1998; extended WUP #347.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/15/2003</td>
<td>Modification and combined 347 &amp; 192</td>
<td>1901-06, 1902-01, 1902-09, 1902-10, and 1902-11</td>
<td>3.30</td>
<td>650</td>
<td>GC</td>
<td>WUP #650 supercedes WUP #347 and #192</td>
</tr>
<tr>
<td>7/12/2006</td>
<td>Commission action to convert interim WUPs for new irrigation uses to permanent WUPs</td>
<td></td>
<td>784</td>
<td></td>
<td></td>
<td>WUP #784 supercedes WUP #650. Notice of Commission action sent to all temporary permit holders on August 3, 2006. No permits reissued.</td>
</tr>
</tbody>
</table>

### Notes:
- a Reallocated 1.5 mgd for urban uses (in 1997, incorporated into WUP #347), from 4.16 mgd original allocation. Allocations as follows:
  - 1.08 golf course irrigation
  - 0.105 landscape irrigation
  - 0.315 maintenance and dust control for fallow fields surrounding golf course
  - 2.66 agriculture

\[
\text{Total allocation} = 4.16
\]

- b Permitted urban uses: golf course irrigation, landscape irrigation, and maintenance and dust control.
Ref: ewa caprock wup conversion.act

Dear Water Use Permittee:

Hawaii Prince Golf Club/Hawaii Prince Hotel Waikiki Corp.,
Well Nos. 1900-02, 1900-17 to 20, 1901-03, WUP No. 469, 0.301 mgd, TMK 9-1-10:6

Haseko (Ewa), Inc., Well Nos. 1901-06, 1902-01, 1902-09 to 11, WUP No. 650, 3.300 mgd, TMK 9-1-12:5

Department of Parks and Recreation, Well No. 2001-03, WUP No. 167, 0.030 mgd, TMK 9-1-61:35

Palm Court Association, Well No. 2001-12, WUP No. 169, 0.040 mgd, TMK 9-1-61:22

Palm Villa II Association, Well No. 2001-08, WUP No. 168, 0.048 mgd, TMK 9-1-61:27

Arbors Association, Well No. 2001-07, WUP No. 171, 0.063 mgd, TMK 9-1-61:32

U.S. Fish & Wildlife, Well No. 2101-14, WUP No. 247, 0.216 mgd, TMK 9-1-17:12

Gentry Development Co., Well No. 2001-04, WUP No. 302, 0.040 mgd, TMK 9-1-61:7

Gentry Development Co., Well No. 2001-09, WUP No. 344, 0.023 mgd, TMK 9-1-61:2

Ewa by Gentry Community Association, Well No. 2001-05, WUP No. 450, 0.066 mgd, TMK 9-1-70:132

Gentry Homes, Ltd., Well No. 2001-12, WUP No. 504, 0.249 mgd, TMK 9-1-102:31

Gentry Homes, Ltd., Well No. 1901-05, WUP No. 505, 0.056 mgd, TMK 9-1-69:8

U.S. DOC/NOAA/NWS, Well No. 1900-23, WUP No. 501, 0.023 mgd, TMK 9-1-1:1

Coral Creek Golf, Inc., Well No. 2002-17, WUP No. 577, 0.498 mgd, TMK 9-1-61:10

Coral Creek Golf, Inc., Well No. 2001-13, WUP No. 578, 0.800 mgd, TMK 9-1-61:10

Coral Creek Golf, Inc., Well Nos. 2001-14, 2002-15,17,19, WUP No. 579, 0.892 mgd, TMK 9-1-61:10&11, 9-1-61:54

AOAO Suncrest/The Shores/Lombard Way/Avalon, Well No. 2001-10, WUP No. 629, 0.022 mgd, TMK 9-1-10:17

State Housing Community Development Corporation of Hawaii, Well Nos. 2003-04,07, WUP No. 432, 0.494 mgd, TMK 9-1-16:25

State Housing Community Development Corporation of Hawaii, Well Nos. 2003-08, WUP No. 520, 0.237 mgd, TMK 9-1-16:108

Kapolei People's Inc., Well Nos. 2003-01,02,05, WUP No. 438, 1.000 mgd, TMK 9-1-16:25

Honolulu Board of Water Supply, Well Nos. 1905-08,10, WUP No. 740, 0.302 mgd, TMK 9-1-16:1

Conversion of Interim Water Use Permits for New Irrigation Uses to Permanent Water Use Permits

Puuloa and Kapolei Ground Water Management Areas, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on the subject water use permits.
By a unanimous vote at their meeting on July 12, 2006, the Commission corrected the error of approving and issuing interim permits for new irrigation uses in the Puuloa and Kapolei Ground Water Management Areas of the Ewa Caprock Aquifer Sector Area by converting the subject interim water use permits to permanent water use permits. All terms and conditions of the permits shall remain unchanged, except for Special Condition d., which is deleted.

The Commission ruled that permittees shall be notified by letter of the Commission’s action to convert these water use permits from interim to permanent and the deletion of Special Condition d. The Commission further ruled that re-issuance of these water use permits is not necessary.

Please be advised that a compliance review will be initiated shortly as required under §174C-56 Hawaii Revised Statutes. We recommend that you carefully review the conditions of your permit and ensure that you are in compliance with all Standard and Special Conditions.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

DEAN A. NAKANO
Acting Deputy Director

LYN:ss
4. The permittee shall submit a detailed agriculture plan to support any future water use permit application for increased agricultural use at this parcel.

MOTION: (Ching/Frazier)
To approve submittal as amended by staff
UNANIMOUSLY APPROVED

C. GROUND WATER REGULATION


CONVERSION OF INTERIM WATER USE PERMITS, FOR NEW IRRIGATION USES TO PERMANENT WATER USE PERMITS, Puuloa and Kapolei Ground Water Management Areas, Oahu

Presentation of submittal: Lenore Nakama
Minutes July 12, 2006

RECOMMENDATION:

Staff recommends that the Commission correct the error of approving and issuing interim permits for new irrigation uses in the Puuloa and Kapolei Ground Water Management Areas of the Ewa Caprock Aquifer Sector Area by converting the subject interim water use permits to permanent water use permits. All terms and conditions of the permits shall remain unchanged, except for Special Condition d., which is deleted. The permittees shall be notified by letter of the Commission’s action to convert these water use permits from interim to permanent and the deletion of Special Condition d. Re-issuance of these water use permits is not necessary.

DISCUSSION:

Ms. Nakama stated that these interim permits expired on July 1, 2006 and staff is recommending that the Commission correct the error that was made in issuing the permits as interim, rather than permanent, water use permits. Action is also requested to inform these users that they may continue to pump their wells in accordance with their allocations and the chloride limit placed on irrigation wells in the Ewa Caprock Aquifer Sector Area.

Commissioner Ching inquired whether the subject permits covered all the users in the Ewa Caprock Aquifer Sector Area. She was concerned that giving certain permits a permanent status may give them a higher priority or status over other interim permits.

Ms. Nakama stated that the submittal covered all the new irrigation users which had a duration of July 1, 2006 attached to their interim permits. There are other interim permits that have been issued for industrial and other non-irrigation uses in the Ewa Caprock Aquifer Sector Area, there are also other interim permits that have been issued for other new and existing uses elsewhere in the State. Staff will address the rest of the interim permits as part of the 20-year compliance review that is mandated by the Water Code. Staff does not feel that the type of permit (i.e., interim or permanent) under which the water is being used will have a bearing on water use priorities should a future competition situation arise.

MOTION: (Ching/Frazier)
Approval of staff recommendation
UNANIMOUSLY APPROVED

G. NON-ACTION ITEMS

1. Rainfall Index Update Presentation by Dr. Pao Shin Chu, State Climatologist, University of Hawaii, Department of Meteorology

Presentor of non-action item: Neal Fujii
Graduate student, Ms. Cindy Ditner presented an update of rainfall throughout the state through a PowerPoint presentation. She stated that it has been 33 years since the last update was done. In preparing this index they gathered rainfall data throughout the State through temperature, elevation and rain gages. If a station did not submit information for 4 months within a calendar year then it was deleted.

H. NEXT COMMISSION MEETING (TENTATIVE)

1. August 16, 2006
2. September 20, 2006

The meeting was adjourned at 12:00 p.m.

Respectfully submitted,

PAULYNE K. ANAKALEA
Secretary

Approved as submitted:

DEAN A. NAKANO
Acting Deputy Director
Roy,

A copy of the Commission meeting minutes and CWRM staff submittal is included in the file for the EP-27 battery of wells (Well Nos. 1901-06, 1902-01, 1902-09 through -11). The staff recommendation, which was unanimously approved by the Commission, was that reissuance of affected permits was not necessary. I will have copies of the Commission meeting minutes for our meeting today. --dm
<table>
<thead>
<tr>
<th>FROM: KEN</th>
<th>DATE: JUN 25 2007</th>
<th>SUSPENSE DATE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TO: ANAKALEA, P.</td>
<td>INIT.</td>
<td>TO: KAWAHARA, K.</td>
</tr>
<tr>
<td>CHING, F.</td>
<td>INIT.</td>
<td>KIMURA, J.</td>
</tr>
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<td>CHONG, R.</td>
<td>INIT.</td>
<td>KUNIMURA, I.</td>
</tr>
<tr>
<td>DANBARA, S.</td>
<td>INIT.</td>
<td>NAKAMA, L.</td>
</tr>
<tr>
<td>ENGLAND, D.</td>
<td>INIT.</td>
<td>OHYE, M.</td>
</tr>
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<td>FUJII, N.</td>
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<td>SAKODA, E.</td>
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<td>INIT.</td>
<td>SWANSON, S.</td>
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<td>INIT.</td>
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<td>ICE, C.</td>
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<td>YODA, K.</td>
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<tr>
<td>IMATA, R.</td>
<td>INIT.</td>
<td>YOSHINAGA, M.</td>
</tr>
</tbody>
</table>

PLEASE: See Me
Review & Comment
Take Action
Type Draft
Type Final
File
Xerox ___ copies

Ryan, plz handle. Thx.

extended A.I.F.
on well.
June 29, 2007

Mr. Raymond Kanna
Haseko (Ewa), Inc.
91-1001 Kaimalie Street, Suite 205
Ewa Beach, HI 96706-5005

Dear Mr. Kanna:

Extension of Pump Installation Permit for Well Nos. 1901-06 and 1902-09 to -11

This is in response to your letter dated June 20, 2007 requesting an extension for the completion date of the EP7 Battery (Well No. 1901-06 and 1902-09 to -11). Your request is approved. Your new completion date is May 20, 2008. All other conditions of your permit remain the same.

If you have any questions, please contact Ryan Imata of the Commission staff at 587-0255.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

RI:ss

c: Tom Nance Water Resource Engineering
   Beylik Drilling & Pump Service, Inc.
June 20, 2007

Mr. Peter Young  
Interim Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Young:

Request for an Extension of the Pump Installation Permit  
for the EP 27 Battery, Well Nos. 1901-06 and 1902-09-11  
in Ewa, Oahu, Hawaii

By the letter, we respectively request that the above-referenced pump installation permit be extended for one year to May 20, 2008. The construction plans to outfit the wells were submitted for county approval in January 2007 and are still pending due to agency review backlogs. We hope to have plan approvals soon and will proceed with the pump installation when the final grading is completed.

If you need additional information, feel free to call me (224-1365). Thank you for your attention to this matter.

Sincerely,

HASEKO (EWA), INC.

Raymond S. Kanna  
Executive Vice President

cc: Tom Nance - Tom Nance Water Resource Engineering
TO STATE OF HAWAII - DLNR

COMMISSION ON WATER RESOURCE MGMT.

P.O. BOX 621

HONOLULU, HI 96809

WE ARE SENDING YOU Attached Under separate cover via the following items:

- Shop drawings
- Prints
- Plans
- Samples
- Specifications
- Copy of letter
- Change order

THESE ARE TRANSMITTED as checked below:

- For approval
- Approved as submitted
- Resubmit ___ copies for approval
- For your use
- Approved as noted
- Submit ___ copies for distribution
- As requested
- Returned for corrections
- Return ___ corrected prints
- For review and comment
- FOR BIDS DUE
- PRINTS RETURNED AFTER LOAN TO US

REMARKS

COPY TO 1510T/C FILE

SIGNED: [Signature]

If enclosures are not as noted, kindly notify us at once.
REQUEST FOR EXTENSION

June 20, 2007

Commission on Water Resource Management
PO Box 621
Honolulu, HI 96809

Re: Request for Extension - Pump Installation Permit for Well No. 1901-06 & 1902-09 to 11

We kindly request that an extension be granted for the attached Pump Installation Permit issued for EP 27 Battery, Wells No. 1901-06 & 1902-09 to 11, as the project has been delayed beyond the expiration date.

Your immediate response is greatly appreciated.

Very truly yours,

Dwight Ho
Vice President
PUMP INSTALLATION PERMIT
EP 27 Battery, Well Nos. 1901-06 & 1902-09 to 11

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the pump installation for EP 27 Battery (Well Nos. Well 1901-06 & 1902-09 to 11) at TMK 9-1-12:39 & 40, Oahu, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work covered by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. No withdrawal of water shall be made other than for testing until a Certificate of Pump Installation Completion has been issued by the Commission.

3. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

4. The pump installation permit shall be for installation of a 200 gpm rated capacity, or less, pump in each well. This permanent capacity may be reduced in the event that the pump test data does not support the capacity.

5. A water-level measurement access shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels.

6. The permittee shall install an approved meter or other appropriate means for measuring and reporting withdrawals and appropriate devices or means for measuring chlorides and temperature at the well head.

7. Well Completion Report Part II shall be submitted to the Chairperson within 60 days after completion of work. This form can be obtained by contacting staff or on the internet at www.hawaii.gov/dlnr/hf/.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

9. The pump installation permit application and any related staff submittal approved by the Commission are incorporated into this permit by reference. This permit is also subject to the HWCPIS. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.

10. The work proposed in the pump installation permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.

11. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

12. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: May 20, 2005
Expiration Date: May 20, 2007

PETER T. YOUNG, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Installer's Signature: C-57, C-57a, or a License #:AC21896 Date: 6-8-07

Printed Name: DWIGHT HO
Firm or Title: BEYLIK DRILLING & PUMP SERVICE, INC.

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachments:

USGS
Honolulu Board of Water Supply
TO
STATE OF HAWAII - DLNR
COMMISSION ON WATER RESOURCE MGMT.
P.O. BOX 621
HONOLULU, HI 96809

WE ARE SENDING YOU  ⧫ Attached  ☐ Under separate cover via ______________ the following items:
☐ Shop drawings  ☐ Prints  ☐ Plans  ☐ Samples  ☐ Specifications
☐ Copy of letter  ☐ Change order

<table>
<thead>
<tr>
<th>COPIES</th>
<th>DATE</th>
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<th>DESCRIPTION</th>
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<td>PUMP INSTALLATION PERMIT</td>
</tr>
</tbody>
</table>

THESE ARE TRANSMITTED as checked below:

☐ For approval  ☐ Approved as submitted  ☐ Resubmit ________ copies for approval
☐ For your use  ☐ Approved as noted  ☐ Submit ________ copies for distribution
☒ As requested  ☐ Returned for corrections  ☐ Return ________ corrected prints
☐ For review and comment  ☐
☐ FOR BIDS DUE ___________________________________  ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS________________________________________

COPY TO ____________________

SIGNED: ____________________________

Toni Gonsalves, Proj. Mgr.

If enclosures are not as noted, kindly notify us at once.
PUMP INSTALLATION PERMIT
EP 27 Battery, Well Nos. 1901-06 & 1902-09 to 11

Note: This permit shall be prominently displayed at the site until the work is completed.

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the pump installation for EP 27 Battery (Well Nos. 1901-06 & 1902-09 to 11) at TMK 9-1-12:39 & 40, Oahu, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work covered by this permit commences and shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. No withdrawal of water shall be made other than for testing until a Certificate of Pump Installation Completion has been issued by the Commission.

3. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

4. The pump installation permit shall be for installation of a 200 gpm rated capacity, or less, pump in each well. This permanent capacity may be reduced in the event that the pump test data does not support the capacity.

5. A water-level measurement access shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels.

6. The permittee shall install an approved meter or other appropriate means for measuring and reporting withdrawals and appropriate devices or means for measuring chlorides and temperature at the well head.

7. Well Completion Report Part II shall be submitted to the Chairperson within 60 days after completion of work. This form can be obtained by contacting staff or on the Internet at www.hawaii.gov/dlnr/cwrm.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

9. The pump installation permit application and any related staff submittal approved by the Commission are incorporated into this permit by reference. This permit is also subject to the HWCPIS. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.

10. The work proposed in the pump installation permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.

11. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the permittee, assignee, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

12. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: May 20, 2005
Expiration Date: May 20, 2007

PETER T. YOUNG, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Installer's Signature: C-57, C-57a, or A License #: AC21896 Date: 6-8-07
Printed Name: DWIGHT HO Firm or Title: BEYLIK DRILLING & PUMP SERVICE, INC.

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachments

USGS
Honolulu Board of Water Supply
May 25, 2005

Ref:1901-06 & 1902-09 to 11.pip

Mr. Ray Kanna
HASEKO (Ewa), Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

Dear Mr. Kanna:

Pump Installation Permit
EP 27 Battery (Well Nos. 1901-06 & 1902-09 to 11)

Enclosed are two (2) originals of your approved Pump Installation Permit for the captioned well(s) that authorize permanent pump installation work for your well(s). As part of the Chairperson’s approval, the following special conditions were added and are part of your permit under Permit Condition 11:

Special Conditions

1. If the elevation benchmark needs to be altered, the permittee, well operator, and/or well owner shall ensure that the benchmark is transferred (or the well resurveyed) and documentation of the new benchmark shall be submitted to the Commission within sixty (60) days after the pump is installed.

2. Separate Well Completion Reports – Part II shall be filed for each well.

The permittee is responsible for all conditions of the permit. This includes ensuring the submission of a completed Well Completion Report Part II form within sixty (60) days after the pump installation work is completed. Be advised that you may be subject to fines of up to $5,000 per day for any violations of your permit conditions starting from the permit approval date.

Please sign both permit originals and return one for our files.

IMPORTANT - Pump installation shall not commence until a fully signed permit is returned to the Commission.

Finally, this cover letter is notice of our acceptance of your Well Completion Reports – Part I as complete as of May 20, 2005.

If you have any questions, please call Lenore Y. Nakama of the Commission staff at 587-0218.

Sincerely,

[Signature]

Peter T. Young
Chairperson

Enclosure

c: USGS
Honolulu Board of Water Supply
PUMP INSTALLATION PERMIT
EP 27 Battery, Well Nos. 1901-06 & 1902-09 to 11

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the pump installation for EP 27 Battery (Well Nos. 1901-06 & 1902-09 to 11) at TMK 9-1-12:39 & 40, Oahu, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

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2. No withdrawal of water shall be made other than for testing until a Certificate of Pump Installation Completion has been issued by the Commission.

3. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

4. The pump installation permit shall be for installation of a 200 gpm rated capacity, or less, pump in each well. This permanent capacity may be reduced in the event that the pump test data does not support the capacity.

5. A water-level measurement access shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels.

6. The permittee shall install an approved meter or other appropriate means for measuring and reporting withdrawals and appropriate devices or means for measuring chlorides and temperature at the well head.

7. Well Completion Report Part II shall be submitted to the Chairperson within 60 days after completion of work. This form can be obtained by contacting staff or on the internet at www.hawai.gov/dlnr/cwrm.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

9. The pump installation permit application and any related staff submittal approved by the Commission are incorporated into this permit by reference. This permit is also subject to the HWCPIS. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.

10. The work proposed in the pump installation permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.

11. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

12. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: May 20, 2005
Expiration Date: May 20, 2007

PETER T. YOUNG, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Installer's Signature: ___________________________ C-57, C-57a, or A License #: _______ Date: ______________

Printed Name: ___________________________ Firm or Title: ___________________________

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachments
- USGS
  Honolulu Board of Water Supply
### Well Check Program
4/1/04 - Revised for update to Well Standards (February 2004)

#### Data Input

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tr>
<td>Well Name</td>
<td>OP1</td>
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<td>Cement Grout</td>
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<td>Grouting Method</td>
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<td>Hole Diameter</td>
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<td>Solid Casing Material</td>
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<td>Solid Casing Specification</td>
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<td>Open Casing Length</td>
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</table>

#### Results

<table>
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<th>Value</th>
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<tr>
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</tr>
<tr>
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</tr>
<tr>
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<td>Well Casing</td>
<td></td>
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<td>Minimum Wall Thickness</td>
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</tr>
<tr>
<td>Material</td>
<td>pvc plastic</td>
</tr>
<tr>
<td>Minimum Thickness per standards</td>
<td>no requirement</td>
</tr>
<tr>
<td>Well Thickness Provided</td>
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<tr>
<td>Minimum Length of Solid Casing</td>
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<td>90% of ground to top of aquifer</td>
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Section 2.2

Section 2.4(b)

Section 2.4(c)

Section 2.4(d)

Section 2.6(c)

Section 2.6(d)
### Well Check Program
4/1/04 - Revised for update to Well Standards (February 2004)

#### Data Input

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<td>Grouting Method</td>
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<td>Hole Diameter</td>
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<td>Total Depth</td>
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<tr>
<td>Estimated Head</td>
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<tr>
<td>Public Water Supply Well?</td>
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<tr>
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<tr>
<td>Open Casing Length</td>
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</table>

#### Results

#### Well Depth

- **Theoretical Thickness of Aquifer**: 62.32
- **1/4 Aquifer Thickness**: 15.58
- **Depth of Well below Sea Level**: 11.11 (okay) Section 2.2

#### Well Casing

- **Minimum Wall Thickness Material**: pvc plastic
- **Minimum Thickness per standards**: no requirement

<table>
<thead>
<tr>
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<td>(for pvc only - check for 200' limit)</td>
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<td>Section 2.4(d)</td>
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#### Annular Space

- **Depth of Grouting**: 15.799
- **Depth of Grouting provided**: 23.2 (okay) Section 2.8(c)
- **Minimum Annular Space required**: 1.8

| Thickness of Annular Space | 8 (okay) | Section 2.6(d) |
**Well Check Program**

4/1/04 - Revised for update to Well Standards (February 2004)

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</tr>
<tr>
<td>Well Thickness Provided</td>
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## Well Check Program

4/1/04 - Revised for update to Well Standards (February 2004)

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### Results

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<tbody>
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<td>Minimum Thickness per standards</td>
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</tr>
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<td>(for pvc only - check for 200' limit)</td>
<td>okay</td>
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</table>

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<tr>
<td>Thickness of Annular Space</td>
<td>8 okay</td>
</tr>
</tbody>
</table>
MEMORANDUM FOR THE RECORD

From: Lenore Nakama
Subject: Requested Pump Capacities for 1902-09 to 11, 1901-06 and Amendment to Well Completion Report – Part I for 1901-06

5/20/05  Tom Nance returned my phone call inquiring as to the requested pump capacities for the 4 wells and the pumping rate for 1901-06 during the constant rate test.

Per Tom, a pump installation permit specifying 200 gpm capacities for each well should be issued, instead of the 350 gpm originally requested.

Also, Tom said the pumping rate for 1901-06 during the constant rate test was 250 gpm.
Ocean Pointe Well 2 on May 15, 2003
Lenore:

The conversions are in the attached letter. Several of the wells are to the Diamond Head side of where they were initially going to go for two reasons: HASEKO's land use plan got changed so the locations were pushed to accommodate that; and a test hole at the west end of the initially chosen array of wells showed the groundwater to be too salty to use. Hope this is not a problem.

Tom

_nakano_.pdf
May 5, 2005

Dear Mr. Nakano:

In response to a voicemail message from Lenore Nakama of your staff, the following information is provided as a supplement to our April 21, 2005 submittal. The well locations, as determined by GPS and expressed in the NAD83 datum, are listed below. If you need these in a different datum or format, please let me know.

Ocean Pointe Irrigation Well Locations (NAD83 Datum)

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Ocean Pointe Well No.</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-09</td>
<td>1</td>
<td>21° 19' 8.2&quot;</td>
<td>158° 02' 1.2&quot;</td>
</tr>
<tr>
<td>1902-10</td>
<td>2</td>
<td>21° 19' 8.0&quot;</td>
<td>158° 01' 58.0&quot;</td>
</tr>
<tr>
<td>1902-11</td>
<td>3</td>
<td>21° 19' 13.7&quot;</td>
<td>158° 01' 49.7&quot;</td>
</tr>
<tr>
<td>1901-06</td>
<td>4</td>
<td>21° 19' 7.7&quot;</td>
<td>158° 01' 39.8&quot;</td>
</tr>
</tbody>
</table>

In addition, there was a mistake in the As-Built Well Section for Well No. 1901-06. The lengths of solid and perforated casing are correct (18.8 and 10 feet, respectively), but the total well depth should have been listed as 28.8 rather than 31.0 feet. If you need additional information, please feel free to call.

Sincerely,

Tom Nance

cc: Ray Kanna - HASEKO
    Dwight Ho - Beylik
Mr. Dean Nakano
Acting Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Nakano:

Additional Data for the
Well Completion Reports for Well Nos. 1902-09, 1902-10, 1902-11, and 1901-06 at Ocean Pointe, Ewa, Oahu

In response to a voicemail message from Lenore Nakama of your staff, the following information is provided as a supplement to our April 21, 2005 submittal. The well locations, as determined by GPS and expressed in the NAD83 datum, are listed below. If you need these in a different datum or format, please let me know.

**Ocean Pointe Irrigation Well Locations (NAD83 Datum)**

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Ocean Pointe Well No.</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-09</td>
<td>1</td>
<td>21° 19.137'</td>
<td>158° 02.020'</td>
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<tr>
<td>1902-10</td>
<td>2</td>
<td>21° 19.134'</td>
<td>158° 01.967'</td>
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<td>1902-11</td>
<td>3</td>
<td>21° 19.229'</td>
<td>158° 01.828'</td>
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<td>1901-06</td>
<td>4</td>
<td>21° 19.295'</td>
<td>158° 01.664'</td>
</tr>
</tbody>
</table>

In addition, there was a mistake in the As-Built Well Section for Well No. 1901-06. The lengths of solid and perforated casing are correct (18.8 and 10 feet, respectively), but the total well depth should have been listed as 28.8 rather than 31.0 feet. If you need additional information, please feel free to call.

Sincerely,

Tom Nance

cc: Ray Kanna - HASEKO
Dwight Ho - Beylik
Mr. Dean Nakano  
Acting Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii  96809

Dear Mr. Nakano:

Well Completion Reports - Part I, for Well Nos. 1902-09, 1902-10, 1902-11, and 1901-06 at Ocean Pointe in Ewa, Oahu, Hawaii

Enclosed with this letter are the Well Completion Reports, Part 1, for four brackish irrigation wells for the Ocean Pointe project in Ewa, Oahu. If you need additional information, feel free to call.

Sincerely,

[Signature]

Tom Nance

cc: Ray Kanna - HASEKO  
Dwight Ho - Beylik

Enclosures
Well Name: Ocean Pointe Well #1 (19-09)
Date of Test: March 14, 2005
Date of Analysis: 27-Apr-05

Alternative way for determining $T$ from step-drawdown data (Mink, per. comm)

$Q = \text{ft}^3/\text{d}$
$\text{Q1 (gpm)} = 304 = 58520 \text{ ft}^3/\text{d}$
$\text{Q2 (gpm)} = 186 = 35805 \text{ ft}^3/\text{d}$

Set up two equations:

$s_1 = jQ_1 + nQ_1^2$
$s_2 = jQ_2 + nQ_2^2$

$Q_2 = 35805$  $s_2 = 0.03$
$Q_1 = 58520$  $s_1 = 0.08$

Well Depth below sea level = 13
Radius of well (ft) = 0.5 = $r$

n = $s_1 - (Q_1/Q_2)s_2/Q_1(Q_1-Q_2) = 2.33E-11$

j = $s/Q - nQ = 3.74E-09$

Laminar flow equation:
$s = jQ = 0.000219$  0.27%  Head loss due to laminar flow

Thiem Eq.

$T = 1/2\pi j (\ln(re/r))$

$re = \text{Well Depth BSL} \times 1.6 = 20.8$

Therefore:
$T = 1/2\pi j (\ln(re/r)) = 158769010 \text{ ft}^2/\text{d}$

much too high - must be in a void - do not put into database - maybe into memo field.
1. State Well No.: 1502-09  
   Well Name: Ocean Pointe Well #1  
   Island: Oahu

2. Address: Ewa Beach, Oahu  
   Tax Map Key: 9-1-12:3-9


4. Drilling method used during construction:  
   - Rotary
   - Percussion
   - Other (describe)

5. Date Well Construction (drilled, cased, grouted) completed: 2/10/05  
   Fill out attached Driller's Log
   In addition to the driller's log, if a geologic log was prepared, please submit with this form.

6. Was the subject well cored?  
   - Yes
   - No

7. Initial water-level encountered: 22.0' ft. below ground  
   Date and time of measurement: 2/10/05

8. Step-Drawdown Test completed?  
   - No
   - Yes
   Attach Step-Drawdown Test form (12/17/97 SDPTD Form)

9. Constant Rate Aquifer Test completed?  
   - No
   - Yes
   Attach Constant Rate Aquifer Test form (12/17/97 CRPTD Form)

Parameters prior to pump test:
10. Water-level: 1.49 ft. above msl  
    Date and time of measurement: 3-14-05 14:00

11. Chloride: 325 ppm  
    Date and time of sampling: 3-14-05 14:10

12. Temperature: 78.2°F  
    Date and time of measurement: 3-14-05 14:10

13. Fill in the as-built section on the other side of this sheet.

14. Attach photograph of well and concrete pad showing benchmark on concrete pad.

15. Fill in attached surveyor's report.

16. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)

17. Remarks:
   
   
   

Licensed Driller (print)  
Beylik Drilling & Pump Service Inc.  
C-57 Lic. No. AC-21896

Signature  
Date 4/14/05
13. AS-BUILT WELL SECTION
(Please attach as-built if different from diagram provided below)

Elevation at top of casing NA ft., msl
(to nearest 0.01 ft.)

Bench mark elevation:
NA ft., msl*
(Survey to nearest 0.01 ft.)

Grouting method:  O Positive displacement  O Other

Cement Grout: 23.2 ft.
(min. 70% of distance from ground elevation to top of water surface or 500 ft., whichever is less.)

Annular space between hole and casing (1.5" for positive displacement, 3" for other methods):
6 in.

Rock or Gravel Packing:
12 ft.
Material:
O Crushed Basalt
O Rounded Gravel

Water Level Elevation:
22.0 GL ft., msl

Solid Casing: (≥ 90% x (Ground Elev.-Water Level Elev))
Length: 25.2 ft.
Nominal Diameter: 12" in.
Wall Thickness: Sched 80 in.
Bottom Elevation: NA ft., msl

Open Casing: O Perforated  O Screen
Length: 10 ft.
Nominal Diameter: 12" in.
Wall Thickness: Sched 80 in.
Bottom Elevation: NA ft., msl

Open Hole:
Length: NA ft.
Diameter: NA in.
Bottom Elevation: NA ft., msl

*msl = mean sea level

Solid Casing Material:
3-190209 OCEAN POINT
Carbon Steel: compliant with (check one or more):  O ANSI/AWWA C200  O API Spec 5L  O ASTM A53  O ASTM A139
And compliant with (check one or more):  O ASTM A242 or A606  O Type E  O Type S  O Grade B  O Other
Stainless Steel: (check one):
O ASTM A409 (production wells)  O ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one)  O Schedule 40  O Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one):  O Schedule 40  O Schedule 80  O Schedule 120
Thermoset Plastic: (check one)
O Filament Wound Resin Pipe conforming to ASTM D2996
O Centrifugally Cast Resin Pipe conforming to ASTM D2997
O Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
O Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
O PTFE Fluorocarbon Tubing conforming to ASTM D3296
O FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
Carbon Steel: compliant with (check one or more):  O ANSI/AWWA C200  O API Spec 5L  O ASTM A53  O ASTM A139
And compliant with (check one or more):  O ASTM A242 or A606  O Type E  O Type S  O Grade B  O Other
Stainless Steel: (check one):
O ASTM A409 (production wells)  O ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one)  O Schedule 40  O Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one):  O Schedule 40  O Schedule 80  O Schedule 120
Thermoset Plastic: (check one)
O Filament Wound Resin Pipe conforming to ASTM D2996
O Centrifugally Cast Resin Pipe conforming to ASTM D2997
O Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
O Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
O PTFE Fluorocarbon Tubing conforming to ASTM D3296
O FEP Fluorocarbon Tubing conforming to ASTM D3296

WCR1 Form 10/18/04 Page 2 of 5
<table>
<thead>
<tr>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
<th>Dates</th>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
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Remarks:
Well Elevation

Well Site #1
Bench mark "O" box cut located at the south corner of the concrete pad.

Benchmark Elevation 24.68(MSL)

Attach photos of completed well and concrete pad showing benchmark location.

I certify that the elevation shown above:

1) Was done in accordance with acceptable surveying practices
2) Is accurate to the nearest 0.01 ft.
3) Is referenced to mean sea level

Surveyor

License No. 4330

Date 4/7/05
Mr. Dean Nakano
Acting Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii  96809

Dear Mr. Nakano:

In response to a voicemail message from Lenore Nakama of your staff, the following information is provided as a supplement to our April 21, 2005 submittal. The well locations, as determined by GPS and expressed in the NAD83 datum, are listed below. If you need these in a different datum or format, please let me know.

Ocean Pointe Irrigation Well Locations (NAD83 Datum)

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Ocean Pointe Well No.</th>
<th>Latitude</th>
<th>Longitude</th>
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<tbody>
<tr>
<td>1902-09</td>
<td>1</td>
<td>21° 19' 8.2&quot;</td>
<td>158° 02' 1.2&quot;</td>
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<tr>
<td>1902-10</td>
<td>2</td>
<td>21° 19' 8.0&quot;</td>
<td>158° 01' 58.0&quot;</td>
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<tr>
<td>1902-11</td>
<td>3</td>
<td>21° 19' 13.7&quot;</td>
<td>158° 01' 49.7&quot;</td>
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<tr>
<td>1901-06</td>
<td>4</td>
<td>21° 19' 7.7&quot;</td>
<td>158° 01' 39.8&quot;</td>
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</tbody>
</table>

In addition, there was a mistake in the As-Built Well Section for Well No. 1901-06. The lengths of solid and perforated casing are correct (18.8 and 10 feet, respectively), but the total well depth should have been listed as 28.8 rather than 31.0 feet. If you need additional information, please feel free to call.

Sincerely,

Tom Nance

cc: Ray Kanna - HASEKO
    Dwight Ho - Beylik
**STEP-DRAWDOWN PUMP TEST DATA**

(not required for wells producing < 100,000 gpd or 70 gpm)

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<th>Pumped Well No.</th>
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<td>Pumped Well Name</td>
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<td>Observation Well No.</td>
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<td>Distance between Obs. &amp; Pumped Well</td>
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<td>Reference pt. for depth to water</td>
<td>26.03 ft. msl</td>
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<td>Static Water Level @ start of test</td>
<td>1.49 ft. msl</td>
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Water level measurements by: □ electrical sounder  ■ pressure transducer  □ airline

**START TEST**
Date: 3-14-2005  
Time of day: 14:10

Flow Meter Reading Start: 16,103,507 gallons

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<tr>
<th>Suggested Elapsed Time (h)</th>
<th>Actual Elapsed Time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown (nearest 0.1 ft)</th>
<th>Pumping Rate (Gallons/step) (gpm)</th>
<th>EC (ppm)</th>
<th>CI (mg/L)</th>
<th>Temp. (°F or °C)</th>
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Step 2 begin?
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<th>Actual Elapsed Time</th>
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<th>Drawdown (ft)</th>
<th>Pumping Rate (gal/min)</th>
<th>EC (pH/mcg)</th>
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END TEST Date: 3-14-05 Time of day: 15:40 (End of Pumping)

ADDITIONAL REMARKS: Drawdown adjusted to field units

Person in charge of pump test (print): Tom Harris

Signature: [Signature]

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
CONSTANT-RATE PUMP TEST DATA

Pumped Well No. 1902-07  Observation Well No. N/A
Pumped Well Name Well No. 1  Distance between Obs. & Pumped Well ft.
Target Q 200 gpm  Reference pt. for depth to water ft. msl

Water level measurements by: □ electrical sounder  ■ pressure transducer  □ airline

START TEST  Date: 3-14-2005  Time of day: 16:00
Flow Meter Reading Start: 16,125,360 gallons

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<th>EC (millis)</th>
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1 Chloride sampling required
2 Use same ending drawdown figure as start for recovery
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**END TEST**  Date: 3-16-2005  Time of day: 16:00 (End of Pumping)

**ADDITIONAL REMARKS:**  Drawdown adjusted for tidal variation

Person in charge of pump test (print): **TOM NANCE**

Signature: 

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
Well Name: Ocean Pointe Well #2 (10-10)
Date of Test: February 16, 2005
Date of Analysis: 28-Apr-05

Alternative way for determining $T$ from step-drawdown data (Mink, per. comm)

$Q = \text{ft}^3/\text{d}$
$Q_1 (\text{gpm}) = 313 = 60253 \text{ ft}^3/\text{d}$
$s = \text{ft}$
$Q_2 (\text{gpm}) = 169 = 32533 \text{ ft}^3/\text{d}$

Set up two equations:

$s_1 = jQ_1 + nQ_1^2$
$s_2 = jQ_2 + nQ_2^2$

$Q_2 = 32533 \quad s_2 = 0.2$
$Q_1 = 60253 \quad s_1 = 0.48$

Well Depth below sea level = 13
Radius of well (ft) = 0.5 = $r$

$n = s_1 - (Q_1/Q_2)s_2/Q_1(Q_1-Q_2) = 6.56E-11$

$j = s/Q - nQ = 4.01E-06$

Laminar flow equation:
$s = jQ = 0.241803 \quad 50.38\% \text{ Head loss due to laminar flow}$

Thiem Eq.

$T = 1/2pj(j\ln(re/r))$

$re = \text{Well Depth BSL} * 1.6 = 20.8$

Therefore:

$T = 1/2pj(j\ln(re/r)) = 147850 \text{ ft}^2/\text{d}$
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
WELL COMPLETION REPORT - PART I
Well Construction

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0225. For updates to this form or additional information, please visit our website at http://www.state.hi.us/dlnr/cwrm/

<table>
<thead>
<tr>
<th>1. State Well No.:</th>
<th>1902-10</th>
<th>Well Name:</th>
<th>Ocean Pointe Well #2</th>
<th>Island:</th>
<th>Oahu</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Address:</td>
<td>Ewa Beach, Oahu</td>
<td>Tax Map Key:</td>
<td>9-1-12 : 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Drilling method used during construction:</td>
<td>X Rotary</td>
<td>ᵃpercussion</td>
<td>ᵃOther (describe)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Date Well Construction (drilled,cased,grouted) completed:</td>
<td>2/10/05</td>
<td>Fill out attached Driller's Log</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In addition to the driller’s log, if a geologic log was prepared, please submit with this form.

| 6. Was the subject well cored? | X Yes | ᵃNo |
| 7. Initial water-level encountered: | 22.1' ft. below ground | Date and time of measurement: | 2/10/05 |
| 8. Step-Drawdown Test completed? | ᵃNo | X Yes |
| 9. Constant Rate Aquifer Test completed? | ᵃNo | X Yes |

Parameters prior to pump test:

| 10. Water-level: | 1.52 ft. above msl | Date and time of measurement: | 2-16-05 14:45 |
| 11. Chloride: | 350 ppm | Date and time of sampling: | 2-16-05 14:55 |
| 12. Temperature: | 77.7 °F | Date and time of measurement: | 2-16-05 14:55 |

13. Fill in the as-built section on the other side of this sheet.

14. Attach photograph of well and concrete pad showing benchmark on concrete pad.

15. Fill in attached surveyor's report.

16. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)

17. Remarks: 

<table>
<thead>
<tr>
<th>Licensed Driller (print)</th>
<th>Beylik Drilling &amp; Pump Service Inc.</th>
<th>C-57 Lic. No.</th>
<th>AC-21896</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
<td>4/14/05</td>
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</tr>
</tbody>
</table>
13. AS-BUILT WELL SECTION (Please attach as-built if different from diagram provided below)

Elevation at top of casing NA ft., msl* (Survey to nearest 0.01 ft.)

Hole Diameter: 24" in.

Minimum of 2' Radius & 4" Thick Concrete Pad

Ground Elevation: NA ft., msl

Grouting method:
X Positive displacement
□ Other

Total Depth 35.2 ft.

Cement Grout: 23.2 ft. (min. 70% of distance from ground elevation to top of water surface or 500 ft., whichever is less.)

Annular space between hole and casing (1.5" for positive displacement, 3" for other methods):
6 in.

Rock or Gravel Packing:
12 ft.
Material:
X Crushed Basalt
□ Rounded Gravel

Water Level Elevation: 22.1 GL ft. msl*

Solid Casing: (≥ 90% x (Ground Elev.-Water Level Elev))
Length: 25.2 ft.
Nominal Diameter: 12"
Wall Thickness: Sched 80 in.
Bottom Elevation: NA ft., msl

Open Casing:
X Perforated
□ Screen
Length: 10 ft.
Nominal Diameter: 12"
Wall Thickness: Sched 80 in.
Bottom Elevation: NA ft., msl

Open Hole:
Length: NA ft.
Diameter: NA in.
Bottom Elevation: NA ft., msl

"msl = mean sea level

Solid Casing Material:
Carbon Steel: compliant with (check one or more):
□ ANSI/AWWA C200 □ API Spec. 5L □ ASTM A53 □ ASTM A139
And compliant with (check one or more):
□ ASTM A242 or A606 □ Type E □ Type S □ Grade B □ Other
Stainless Steel: (check one):
□ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one)
□ Schedule 40 □ Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one)
□ Schedule 40 □ Schedule 80
Thermoset Plastic: (check one)
□ Filament Wound Resin Pipe conforming to ASTM D2996
□ Centrifugally Cast Resin Pipe conforming to ASTM D2997
□ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
□ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
□ PTFE Fluorocarbon Tubing conforming to ASTM D3296
□ FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
Carbon Steel: compliant with (check one or more):
□ ANSI/AWWA C200 □ API Spec. 5L □ ASTM A53 □ ASTM A139
And compliant with (check one or more):
□ ASTM A242 or A606 □ Type E □ Type S □ Grade B □ Other
Stainless Steel: (check one):
□ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one)
□ Schedule 40 □ Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one)
□ Schedule 40 □ Schedule 80
Thermoset Plastic: (check one)
□ Filament Wound Resin Pipe conforming to ASTM D2996
□ Centrifugally Cast Resin Pipe conforming to ASTM D2997
□ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
□ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
□ PTFE Fluorocarbon Tubing conforming to ASTM D3296
□ FEP Fluorocarbon Tubing conforming to ASTM D3296
## DRILLER'S LOG

**WELL NUMBER:** 1902-10

<table>
<thead>
<tr>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
<th>Dates</th>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 5</td>
<td>Dirt &amp; Coral</td>
<td>2/10/05</td>
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<td></td>
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</tr>
<tr>
<td>5 to 10</td>
<td>Coral</td>
<td>2/10/05</td>
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</tr>
<tr>
<td>10 to 15</td>
<td>Coral &amp; Sand</td>
<td>2/10/05</td>
<td></td>
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</tr>
<tr>
<td>15 to 20</td>
<td>Coral &amp; Sand</td>
<td>2/10/05</td>
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</tr>
<tr>
<td>20 to 25</td>
<td>Coral &amp; Sand</td>
<td>2/10/05</td>
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</tr>
<tr>
<td>25 to 30</td>
<td>Coral &amp; Sand</td>
<td>2/10/05</td>
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</tr>
<tr>
<td>30 to 35</td>
<td>Coral &amp; Sand</td>
<td>2/10/05</td>
<td>22.1' Water</td>
<td>35.2 Total Depth</td>
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</tr>
</tbody>
</table>

**Remarks:**

*WCR1 Form 10/18/04 Page 3 of 5*
Well Elevation

Well Site #2
Bench mark "□" box cut located at
the south corner of the concrete
pad.

Benchmark Elevation 24.09(MSL)

Attach photos of completed well and concrete pad showing benchmark location.

I certify that the elevation shown above:

1) Was done in accordance with acceptable surveying practices
2) Is accurate to the nearest 0.01 ft.
3) Is referenced to mean sea level

Surveyor: George A. Sumida
License No.: 4330
Date: 4/7/05
Dear Mr. Nakano:

In response to a voicemail message from Lenore Nakama of your staff, the following information is provided as a supplement to our April 21, 2005 submittal. The well locations, as determined by GPS and expressed in the NAD83 datum, are listed below. If you need these in a different datum or format, please let me know.

Ocean Pointe Irrigation Well Locations (NAD83 Datum)

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Ocean Pointe Well No.</th>
<th>Latitude</th>
<th>Longitude</th>
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<tbody>
<tr>
<td>1902-09</td>
<td>1</td>
<td>21° 19' 8.2''</td>
<td>158° 02' 1.2''</td>
</tr>
<tr>
<td>1902-10</td>
<td>2</td>
<td>21° 19' 8.0''</td>
<td>158° 01' 58.0''</td>
</tr>
<tr>
<td>1902-11</td>
<td>3</td>
<td>21° 19' 13.7''</td>
<td>158° 01' 49.7''</td>
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<tr>
<td>1901-06</td>
<td>4</td>
<td>21° 19' 7.7''</td>
<td>158° 01' 39.8''</td>
</tr>
</tbody>
</table>

In addition, there was a mistake in the As-Built Well Section for Well No. 1901-06. The lengths of solid and perforated casing are correct (18.8 and 10 feet, respectively), but the total well depth should have been listed as 28.8 rather than 31.0 feet. If you need additional information, please feel free to call.

Sincerely,

Tom Nance

cc: Ray Kanna - HASEKO
    Dwight Ho - Beylik
**STEP-DRAWDOWN PUMP TEST DATA**

(not required for wells producing < 100,000 gpd or 70 gpm)

<table>
<thead>
<tr>
<th>Pumped Well No.</th>
<th>1902-10</th>
<th>Observation Well No.</th>
<th>N/A</th>
</tr>
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<tbody>
<tr>
<td>Pumped Well Name</td>
<td>WELL NO. 2</td>
<td>Distance between Obs. &amp; Pumped Well</td>
<td>ft.</td>
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<tr>
<td>Target Q</td>
<td>250 gpm</td>
<td>Reference pt. for depth to water</td>
<td>25.70 ft. msl</td>
</tr>
<tr>
<td>Static Water Level @ start of test</td>
<td>1.52 ft. msl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water level measurements by:</td>
<td>☐ electrical sounder</td>
<td>☐ pressure transducer</td>
<td>☐ airline</td>
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</table>

START TEST Date: 2/16/2005  Time of day: 2:45 PM

Flow Meter Reading Start: 15,314.50 gallons

<table>
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<tr>
<th>Suggested Elapsed Time</th>
<th>Actual Elapsed Time</th>
<th>Depth to Water (nearest: 0.1 ft)</th>
<th>Drawdown S (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (at least 3 steps) (gpm)</th>
<th>EC (ppm)</th>
<th>CI (mg/l)</th>
<th>Data in this table is for</th>
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<td>Step 2 begin?</td>
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<tr>
<td>Suggested Elapsed Time (min)</td>
<td>Actual Elapsed Time (min)</td>
<td>Depth to water (nearest 0.1 ft)</td>
<td>Drawdown S (unadjusted to nearest 0.1 ft)</td>
<td>Pumping rate Q (at least 3 steps) (gpm)</td>
<td>EC (mmhos)</td>
<td>CT (mg/l)</td>
<td>Temp. °F or °C</td>
<td>Remarks</td>
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END TEST Date: 2/16/2005 Time of day: 5:15 pm

ADDITIONAL REMARKS: ________________________________________________________________

Person in charge of pump test (print): TOM NOCE

Signature: ________________________________________________________________

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
## CONSTANT-RATE PUMP TEST DATA

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---

1 Chloride sampling required
2 Use same ending drawdown figure as start for recovery

Max possible duration, water level or quality did not stabilize for any 24 period

Begin recovery data next page
Flow meter reading at end of pumped period:

\[15,701,000\] gals
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<th>Suggested elapsed time (min)</th>
<th>Actual elapsed time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Recovery Drawdown S (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (μmhos)</th>
<th>Ct (mg/l)</th>
<th>Temp. °F</th>
<th>Remarks</th>
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</table>

**END TEST**  Date: 2-18-05  Time of day: 12:00 Noon

ADDITIONAL REMARKS: 

Person in charge of pump test (print):  

Signature: 

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
WELL ID: Ocean Pointe no 3

INPUT

<table>
<thead>
<tr>
<th>Construction:</th>
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<tbody>
<tr>
<td>Casing dia. ((d_c))</td>
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<tr>
<td>12 Inch</td>
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<tr>
<td>Annulus dia. ((d_w))</td>
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<tr>
<td>24 Inch</td>
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<tr>
<td>Screen Length ((L))</td>
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<tr>
<td>10 Feet</td>
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</table>

<table>
<thead>
<tr>
<th>Depths to:</th>
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<tr>
<td>water level ((DTW))</td>
</tr>
<tr>
<td>20 Feet</td>
</tr>
<tr>
<td>Top of Aquifer</td>
</tr>
<tr>
<td>20 Feet</td>
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<tr>
<td>Base of Aquifer</td>
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<td>50 Feet</td>
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Annular Fill:

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<thead>
<tr>
<th>across screen -- Gravel</th>
</tr>
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<tbody>
<tr>
<td>above screen -- Cement</td>
</tr>
</tbody>
</table>

Aquifer Material -- Reef Limestone

ASSUMED \(S = 0.1\) d'less

\(K = 5000\) is greater than likely maximum of 1000 for Reef Limestone

COMPUTED

Aquifer thickness = 30 Feet

Input is consistent.

\(T = 100,000\) Feet\(^2\)/Day

\(S = 0.1\) d'less

\(K_{annular} = 5000\) Feet/Day

\(\text{Skin} = -0.09\) d'less

REMARKS:
Step-drawdown analysis of single-well aquifer test

K\(\text{ANNULAR}\) is estimated by fitting simulated drawdowns to measured drawdowns in a secondary plot. A reasonable storage value must be assigned by the user because storage and K\(\text{ANNULAR}\) cannot be estimated independently. The estimate of \(T\) is not affected by changes in estimates of storage and K\(\text{ANNULAR}\).
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### State of Hawaii
**COMMISSION ON WATER RESOURCE MANAGEMENT**
**Department of Land and Natural Resources**

**WELL COMPLETION REPORT - PART I**

**Well Construction**

**Instructions:** Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulations Branch at 587-0225. For updates to this form or additional information, please visit our website at [http://www.state.hi.us/dlnr/ONRM/](http://www.state.hi.us/dlnr/ONRM/)

1. **State Well No.:** 1902-11  
   **Well Name:** Ocean Pointe Well #3  
   **Island:** Oahu

2. **Address:** Ewa Beach, Oahu  
   **Tax Map Key:** 0-1-12:30

3. **Drilling Company:** Beylik Drilling & Pump Service, Inc.

4. **Drilling method used during construction:**  
   - ☑ Rotary  
   - ☐ Percussion  
   - ☐ Other (describe)

5. **Date Well Construction (drilled, cased, grouted) completed:** 2/9/05  
   Fill out attached Driller's Log

   *In addition to the driller's log, if a geologic log was prepared, please submit with this form.*

6. **Was the subject well cored?**  
   - ☑ Yes  
   - ☐ No

7. **Initial water-level encountered:** 19.5' ft. below ground  
   **Date and time of measurement:** 2/9/05

8. **Step-Drawdown Test completed?**  
   - ☐ No  
   - ☐ Yes  
   **Attach Step-Drawdown Test form (12/17/97 SDPTD Form)**

9. **Constant Rate Aquifer Test completed?**  
   - ☐ No  
   - ☐ Yes  
   **Attach Constant Rate Aquifer Test form (12/17/97 CRPTD Form)**

**Parameters prior to pump test:**

10. **Water-level:** 1.53 ft. above msl  
    **Date and time of measurement:** 2-16-05 12:00

11. **Chloride:** 880 ppm  
    **Date and time of sampling:** 2-16-05 12:10

12. **Temperature:** 78.0 °F  
    **Date and time of measurement:** 2-16-05 12:10

13. **Fill in the as-built section on the other side of this sheet.**

14. **Attach photograph of well and concrete pad showing benchmark on concrete pad.**

15. **Fill in attached surveyor's report.**

16. **Remarks:**

   - [Add remarks here]

17. **Remarks:**

   - [Add additional remarks here]

---

**Licensed Driller**  
**(print)** Beylik Drilling & Pump Service Inc.  
**C-57 Lic. No.** AC-21896

**Signature**  
**Date** 4/14/05

---

WCR1 Form 10/18/04 Page 1 of 5
13. AS-BUILT WELL SECTION

(Please attach as-built if different from diagram provided below)

Elevation at top of casing: NA ft., msl*

Hole Diameter: 24" in.

Minimum of 2' Radius & 4" Thick Concrete Pad

Ground Elevation: NA ft., msl

---

Bench mark elevation:

NA ft., msl*

(Survey to nearest 0.01 ft.)

Grouting method:

☒ Positive displacement
☐ Other

Cement Grout: 20.6 ft.*

(90% of distance from ground elevation to top of water surface or 500 ft., whichever is less.)

Annular space between hole and casing (1.5" for positive displacement, 3" for other methods):

6 in.

Rock or Gravel Packing:

12 ft.

Material:

☑ Crushed Basalt
☐ Round Gravel

Water Level Elevation:

19.5 GL ft., msl*

Solid Casing:

(≥ 90% x (Ground Elevation - Water Level Elevation))

Length: 22.6 ft.

Nominal Diameter: 12" in.

Wall Thickness: Sched 80 in.

Bottom Elevation:

---

Open Casing:

☒ Perforated
☐ Screen

Length: 10 ft.

Nominal Diameter: 12 in.

Wall Thickness: Sched 80 in.

Bottom Elevation:

---

Open Hole:

Length: NA ft.

Diameter: _______ in.

Bottom Elevation: _______ ft., msl

---

*msl = mean sea level

---

Solid Casing Material:

Carbon Steel: compliant with (check one or more):

☐ ANSI/AWWA C200 ☐ API Spec. 5L ☐ ASTM A53 ☐ ASTM A139

And compliant with (check one or more):

☐ ASTM A242 or A606 ☐ Type E ☐ Type S ☐ Grade B ☐ Other

Stainless Steel: (check one):

☐ ASTM A409 (production wells) ☐ ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one)

☐ Schedule 40 ☐ Schedule 80

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one)

☐ Schedule 40 ☐ Schedule 80 ☐ Schedule 120

Thermoset Plastic: (check one)

☐ Filament Wound Resin Pipe conforming to ASTM D2996

☐ Centrifugally Cast Resin Pipe conforming to ASTM D2997

☐ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517

☐ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950

☐ PTFE Fluorocarbon Tubing conforming to ASTM D3296

☐ FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:

Carbon Steel: compliant with (check one or more):

☐ ANSI/AWWA C200 ☐ API Spec. 5L ☐ ASTM A53 ☐ ASTM A139

And compliant with (check one or more):

☐ ASTM A242 or A606 ☐ Type E ☐ Type S ☐ Grade B ☐ Other

Stainless Steel: (check one):

☐ ASTM A409 (production wells) ☐ ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one)

☐ Schedule 40 ☐ Schedule 80

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one)

☐ Schedule 40 ☐ Schedule 80 ☐ Schedule 120

Thermoset Plastic: (check one)

☐ Filament Wound Resin Pipe conforming to ASTM D2996

☐ Centrifugally Cast Resin Pipe conforming to ASTM D2997

☐ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517

☐ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950

☐ PTFE Fluorocarbon Tubing conforming to ASTM D3296

☐ FEP Fluorocarbon Tubing conforming to ASTM D3296

---

WCR1 Form 10/18/04 Page 2 of 5
## DRILLER'S LOG

**WELL NUMBER:** 1902-11

<table>
<thead>
<tr>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
<th>Dates</th>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 5</td>
<td>Dirt &amp; Coral</td>
<td>2/9/05</td>
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<td>5 to 10</td>
<td>Coral</td>
<td>2/9/05</td>
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<td>Coral</td>
<td>2/9/05</td>
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<td>15 to 20</td>
<td>Coral</td>
<td>2/9/05</td>
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<tr>
<td>20 to 25</td>
<td>Coral &amp; Sand</td>
<td>2/9/05</td>
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<tr>
<td>25 to 30</td>
<td>Coral &amp; Sand</td>
<td>2/9/05</td>
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<td>19.5' Water</td>
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</tbody>
</table>

Remarks:
Well Elevation

Well Site #3
Bench mark "☐" box cut located at the south corner of the concrete pad.

Benchmark Elevation 21.92 (MSL)

Attach photos of completed well and concrete pad showing benchmark location.

I certify that the elevation shown above:

1) Was done in accordance with acceptable surveying practices
2) Is accurate to the nearest 0.01 ft.
3) Is referenced to mean sea level

Surveyor  License No.  Date
George A. Sumida  4330  4/7/95

WCR1 Form 10/18/04 Page 5 of 5
May 5, 2005
OS/169r (05-06)

Mr. Dean Nakano
Acting Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P. O. Box 821
Honolulu, Hawaii 96809

Dear Mr. Nakano:

Additional Data for the Well Completion Reports for Well Nos. 1902-09, 1902-10, 1902-11, and 1901-06 at Ocean Pointe, Ewa, Oahu

In response to a voicemail message from Lenore Nakama of your staff, the following information is provided as a supplement to our April 21, 2005 submittal. The well locations, as determined by GPS and expressed in the NAD83 datum, are listed below. If you need these in a different datum or format, please let me know.

### Ocean Pointe Irrigation Well Locations (NAD83 Datum)

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Ocean Pointe Well No.</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-09</td>
<td>1</td>
<td>21° 19' 8.2&quot;</td>
<td>158° 02' 1.2&quot;</td>
</tr>
<tr>
<td>1902-10</td>
<td>2</td>
<td>21° 19' 8.0&quot;</td>
<td>158° 01' 58.0&quot;</td>
</tr>
<tr>
<td>1902-11</td>
<td>3</td>
<td>21° 19' 13.7&quot;</td>
<td>158° 01' 49.7&quot;</td>
</tr>
<tr>
<td>1901-06</td>
<td>4</td>
<td>21° 19' 7.7&quot;</td>
<td>158° 01' 39.8&quot;</td>
</tr>
</tbody>
</table>

In addition, there was a mistake in the As-Built Well Section for Well No. 1901-06. The lengths of solid and perforated casing are correct (18.8 and 10 feet, respectively), but the total well depth should have been listed as 28.8 rather than 31.0 feet. If you need additional information, please feel free to call.

Sincerely,

Tom Nance

cc: Ray Kanna - HASEKO
Dwight Ho - Beylik

680 Ala Moana Boulevard, Suite 406 - Honolulu, Hawaii 96813-5411 - Phone: (808) 537-1141 - Fax: (808) 538-7787 - E-mail: office@tnwre.com
**STEP-DRAWDOWN PUMP TEST DATA**

(not required for wells producing < 100,000 gpd or 70 gpm)

<table>
<thead>
<tr>
<th>Pumped Well No.</th>
<th>1902-11</th>
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<tbody>
<tr>
<td>Pumped Well Name</td>
<td>WELL NO. 3</td>
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<tr>
<td>Target Q</td>
<td>250 gpm</td>
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<tr>
<td>Observation Well No.</td>
<td>N/A</td>
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<tr>
<td>Distance between Obs. &amp; Pumped Well</td>
<td>ft.</td>
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<tr>
<td>Reference pt. for depth to water</td>
<td>23.56 ft. msl</td>
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<tr>
<td>Static Water Level @ start of test</td>
<td>1.53 ft. msl</td>
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</tbody>
</table>

Water level measurements by:  ☐ electrical sounder  ☐ pressure transducer  ☐ airline

START TEST Date: 2-16-2005  Time of day: 12:00 noon

Flow Meter Reading Start: 29,343,300 gallons

<table>
<thead>
<tr>
<th>Suggested Elapsed Time (min)</th>
<th>Actual Elapsed Time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown S (unadjusted, to nearest 0.1 ft)</th>
<th>Pumping rate Q (at least 3 steps) (gpm)</th>
<th>EC (μg/l)</th>
<th>CR</th>
<th>Temp F or °C</th>
<th>Data in this table is for:</th>
<th>Remarks</th>
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**END OF PUMP TEST**

**CHLORIDE SAMPLE TAKEN**

**NEXT STEPS:**

1. **Step 2 begin?**
2. **Step 3 begin?**
3. **Step 4 begin?**
4. **Step 5 begin?**
5. **Step 6 begin?**
6. **Step 7 begin?**
7. **Step 8 begin?**
8. **Step 9 begin?**
9. **Step 10 begin?**
<table>
<thead>
<tr>
<th>Suggested Elapsed Time (min)</th>
<th>Actual Elapsed Time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown S (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (at least 3 steps) (QCDN)</th>
<th>EC (μmhos)</th>
<th>CR (mg/l)</th>
<th>Temp. °F</th>
<th>Data in this table is for:</th>
<th>Remarks</th>
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</tr>
<tr>
<td>Suggested elapsed time (min)</td>
<td>Actual elapsed time (min)</td>
<td>Depth To Water (nearest 0.1 ft)</td>
<td>Recovery Drawdown S (unadjusted to nearest 0.1 ft)</td>
<td>Pumping rate Q (gpm)</td>
<td>EC (mhos)</td>
<td>CT (mg/l)</td>
<td>Temp °F or °C</td>
<td>Remarks</td>
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END TEST Date: **2-16-2005** Time of day: **3:00 PM**
ADDITIONAL REMARKS: 

Person in charge of pump test (print): **TOM NOYCE**

Signature: **TOM NOYCE**

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
CONSTANT-RATE PUMP TEST DATA

Pumped Well No. 1902-11  Observation Well No. 41/2
Pumped Well Name WELL NO. 3  Distance between Obs. & Pumped Well 100 ft.
Target Q 250 gpm  Reference pt. for depth to water 100 ft. msl
Static Water Level @ start of test 100 ft. msl
Water level measurements by:  □ electrical sounder  ■ pressure transducer  □ airline

START TEST  Date: 2-17-04  Time of day: 9:46 AM
Flow Meter Reading Start: 29,367,100 gallons

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1 Chloride sampling required
2 Use same ending drawdown figure as start for recovery

Max possible duration, water level or quality did not stabilize for any 24 period

Begin recovery data next page
Flow meter reading at end of pumped period: 23,731,120 gals
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END TEST Date: 2-19-05 Time of day: 11:00 AM

ADDITIONAL REMARKS: ____________________________________________________________

Person in charge of pump test (print): TOM HANCE

Signature: ____________________________________________

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
WELL ID: Ocean Pointe no 4

INPUT

<table>
<thead>
<tr>
<th>Construction</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Casing dia. ( d_c )</td>
<td>12 Inch</td>
</tr>
<tr>
<td>Annulus dia. ( d_w )</td>
<td>24 Inch</td>
</tr>
<tr>
<td>Screen Length ( L )</td>
<td>12 Feet</td>
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<table>
<thead>
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<th>Depths to</th>
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<tr>
<td>water level ( DTW )</td>
<td>20 Feet</td>
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<tr>
<td>Top of Aquifer</td>
<td>20 Feet</td>
</tr>
<tr>
<td>Base of Aquifer</td>
<td>50 Feet</td>
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<table>
<thead>
<tr>
<th>Annular Fill</th>
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<tbody>
<tr>
<td>across screen -- Gravel</td>
<td></td>
</tr>
<tr>
<td>above screen -- Cement</td>
<td></td>
</tr>
<tr>
<td>Aquifer Material -- Reef Limestone</td>
<td></td>
</tr>
<tr>
<td>ASSUMED S =</td>
<td>0.1 d'less</td>
</tr>
</tbody>
</table>

\[ K = 10000 \text{ Feet/Day} \]

\[ T = 400,000 \text{ Feet2/Day} \]

\[ S = 0.1 \text{ d'less} \]

\[ K_{\text{annular}} = 20000 \text{ Feet/Day} \]

\[ \text{Skin} = -0.3 \text{ d'less} \]

\( K = 10000 \) is greater than likely maximum of 1000 for Reef Limestone

COMPUTED

| Aquifer thickness = | 30 Feet |

Input is consistent.

\( S / Q_{\text{NSTEP}} \)

\[ \sum_{i=1}^{\text{NSTEP}} \frac{\log(\Delta t_i) \Delta Q_i}{Q_{\text{NSTEP}}} \]

REMARKS:

Step-drawdown analysis of single-well aquifer test

KANNULAR is estimated by fitting simulated drawdowns to measured drawdowns in a secondary plot. A reasonable storage value must be assigned by the user because storage and KANNULAR cannot be estimated independently. The estimate of T is not affected by changes in estimates of storage and KANNULAR.
<table>
<thead>
<tr>
<th>Entry</th>
<th>Time, Hr:Min:Sec</th>
<th>Water Level, Feet</th>
<th>Entry</th>
<th>Time, Hr:Min:Sec</th>
<th>Water Level, Feet</th>
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**State of Hawaii**  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
**Department of Land and Natural Resources**

**WELL COMPLETION REPORT - PART I**

**Well Construction**

**Instructions:** Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0225. For updates to this form or additional information, please visit our website at [http://www.state.hi.us/dlnr/cwrm/](http://www.state.hi.us/dlnr/cwrm/)

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1. State Well No.:</td>
<td>1901-06</td>
</tr>
<tr>
<td>Name:</td>
<td>Ocean Pointe Well #4</td>
</tr>
<tr>
<td>Island:</td>
<td>Oahu</td>
</tr>
<tr>
<td>2. Address:</td>
<td>Ewa Beach, Oahu</td>
</tr>
<tr>
<td>Tax Map Key:</td>
<td>9-1-12:40</td>
</tr>
<tr>
<td>4. Drilling method used during construction:</td>
<td>☑ Rotary  ☐ Percussion  ☐ Other (describe)</td>
</tr>
<tr>
<td>5. Date Well Construction (drilled,cased,grouted) completed:</td>
<td>2/9/05</td>
</tr>
<tr>
<td>Fill out attached Driller's Log month/day/year</td>
<td></td>
</tr>
<tr>
<td>In addition to the driller's log, if a geologic log was prepared, please submit with this form.</td>
<td></td>
</tr>
<tr>
<td>6. Was the subject well cored?</td>
<td>☑ Yes  ☐ No</td>
</tr>
<tr>
<td>7. Initial water-level encountered</td>
<td>18.3' ft. below ground</td>
</tr>
<tr>
<td>Date and time of measurement:</td>
<td>2/9/05 month/day/year time</td>
</tr>
<tr>
<td>8. Step-Drawdown Test completed?</td>
<td>☑ Yes  ☐ No</td>
</tr>
<tr>
<td>Attach Step-Drawdown Test form (12/17/97 SDPTD Form)</td>
<td></td>
</tr>
<tr>
<td>9. Constant Rate Aquifer Test completed?</td>
<td>☑ Yes  ☐ No</td>
</tr>
<tr>
<td>Attach Constant Rate Aquifer Test form (12/17/97 CRPTD Form)</td>
<td></td>
</tr>
<tr>
<td>Parameters prior to pump test:</td>
<td></td>
</tr>
<tr>
<td>10. Water-level:</td>
<td>1.55 ft. above msl</td>
</tr>
<tr>
<td>Date and time of measurement:</td>
<td>2-18-05 14:00 month/day/year time</td>
</tr>
<tr>
<td>11. Chloride:</td>
<td>330 ppm</td>
</tr>
<tr>
<td>Date and time of sampling:</td>
<td>2-18-05 14:10 month/day/year time</td>
</tr>
<tr>
<td>12. Temperature:</td>
<td>78.9°F</td>
</tr>
<tr>
<td>Date and time of measurement:</td>
<td>2-18-05 14:10 month/day/year time</td>
</tr>
<tr>
<td>13. Fill in the as-built section on the other side of this sheet.</td>
<td></td>
</tr>
<tr>
<td>14. Attach photograph of well and concrete pad showing benchmark on concrete pad.</td>
<td></td>
</tr>
<tr>
<td>15. Fill in attached surveyor's report.</td>
<td></td>
</tr>
<tr>
<td>16. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)</td>
<td></td>
</tr>
<tr>
<td>17. Remarks:</td>
<td></td>
</tr>
</tbody>
</table>

**Licensed Driller** (print) | Beylik Drilling & Pump Service Inc. |
| C-57 Lic. No. | AC-21896 |
| Signature | 4/14/05 |

WCR1 Form 10/18/04 Page 1 of 5
13. AS-BUILT WELL SECTION (Please attach as-built if different from diagram provided below)

Elevation at top of casing: NA ft., msl
(to nearest 0.01 ft.)

Minimum of 2' Radius & 4" Thick Concrete Pad

Bench mark elevation: NA ft., msl
(Survey to nearest 0.01 ft.)

Grouting method:
☐ Positive displacement
☐ Other

Cement Grout: 16.8 ft.
(min. 70% of distance from
ground elevation to top of
water surface or 500 ft.,
whichever is less.)

Annular space between
hole and casing (1.5" for
positive displacement, 3" for
other methods):
6 in.

Rock or Gravel Packing:
12 ft.
Material:
☐ Crushed Basalt
☐ Rounded Gravel

Open Casing:
☐ Perforated
☐ Screen

Length: 18.8 ft.
Nominal Diameter: 12"
Wall Thickness: Sched 80 in.
Bottom Elevation:

Solid Casing: (≥ 90% x (Ground Elev.-Water Level Elev))
Length: 18.8 ft.
Nominal Diameter: 12"
Wall Thickness: Sched 80 in.
Bottom Elevation:

Open Hole:
Length: NA ft.
Diameter: in.
Bottom Elevation:

WELL SECTION

*msl = mean sea level

Solid Casing Material:
- Carbon Steel: compliant with (check one or more):
  - ANSI/AWWA C200
  - API Spec. 5L
  - ASTM A53
  - ASTM A139
  - Other
And compliant with (check one or more):
  - ASTM A242 or A606
  - Type E
  - Type S
  - Grade B
  - Other
- Stainless Steel: (check one):
  - ASTM A409 (production wells)
  - ASTM A312 (monitor wells)
- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one)
  - Schedule 40
  - Schedule 80
- PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one)
  - Schedule 40
  - Schedule 80
  - Schedule 120
- Thermoset Plastic: (check one)
  - Filament Wound Resin Pipe conforming to ASTM D2996
  - Centrifugally Cast Resin Pipe conforming to ASTM D2997
  - Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
  - Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  - PTFE Fluorocarbon Tubing conforming to ASTM D3296
  - FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
- Carbon Steel: compliant with (check one or more):
  - ANSI/AWWA C200
  - API Spec. 5L
  - ASTM A53
  - ASTM A139
And compliant with (check one or more):
  - ASTM A242 or A606
  - Type E
  - Type S
  - Grade B
  - Other
- Stainless Steel: (check one):
  - ASTM A409 (production wells)
  - ASTM A312 (monitor wells)
- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one)
  - Schedule 40
  - Schedule 80
- PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one)
  - Schedule 40
  - Schedule 80
  - Schedule 120
- Thermoset Plastic: (check one)
  - Filament Wound Resin Pipe conforming to ASTM D2996
  - Centrifugally Cast Resin Pipe conforming to ASTM D2997
  - Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
  - Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  - PTFE Fluorocarbon Tubing conforming to ASTM D3296
  - FEP Fluorocarbon Tubing conforming to ASTM D3296

HAWAII WELL CONSTRUCTION AND PUMP INSTALLATION STANDARDS
Please refer to the
STANDARDS
Please refer to the
Please refer to the

WCR1 Form 10/18/04 Page 2 of 5
## DRILLER'S LOG

**Well Number:** 1901-06

<table>
<thead>
<tr>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
<th>Dates</th>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
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Remarks:

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WCR1 Form 10/18/04 Page 3 of 5
Well Elevation

Well Site #4
Bench mark "□" box cut located at the south corner of the concrete pad.

Benchmark Elevation 20.66(MSL)

Attach photos of completed well and concrete pad showing benchmark location.

I certify that the elevation shown above:

1) Was done in accordance with acceptable surveying practices
2) Is accurate to the nearest 0.01 ft.
3) Is referenced to mean sea level

Surveyor: [Signature]
License No.: 4330
Date: 4/7/05

License No.

HAWAII, U.S.A.
Dear Mr. Nakano:

In response to a voicemail message from Lenore Nakama of your staff, the following information is provided as a supplement to our April 21, 2005 submittal. The well locations, as determined by GPS and expressed in the NAD83 datum, are listed below. If you need these in a different datum or format, please let me know.

Ocean Pointe Irrigation Well Locations (NAD83 Datum)

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<th>Latitude</th>
<th>Longitude</th>
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<td>158° 02' 1.2&quot;</td>
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<td>158° 01' 58.0&quot;</td>
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<tr>
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<td>158° 01' 39.8&quot;</td>
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In addition, there was a mistake in the As-Built Well Section for Well No. 1901-06. The lengths of solid and perforated casing are correct (18.8 and 10 feet, respectively), but the total well depth should have been listed as 28.8 rather than 31.0 feet. If you need additional information, please feel free to call.

Sincerely,

Tom Nance

cc: Ray Kanna - HASEKO
    Dwight Ho - Beylik
**STEP-DRAWDOWN PUMP TEST DATA**

(not required for wells producing < 100,000 gpd or 70 gpm)

Pumped Well No. **1901-06**

Pumped Well Name **Well No. 4**

Target Q **250** gpm

Observation Well No. **n/a**

Distance between Obs. & Pumped Well **n/a** ft.

Reference pt. for depth to water **22.26** ft. msl

Static Water Level @ start of test **1.55** ft. msl

Water level measurements by: □ electrical sounder  ■ pressure transducer  □ airline

START TEST Date: **2-18-2005**  Time of day: **2:00 PM**

Flow Meter Reading Start: **15,715,050** gallons

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<th>Suggested Elapsed Time</th>
<th>Actual Elapsed Time</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown S (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (at least 3 steps) (gpm)</th>
<th>EC (umhos)</th>
<th>Cl (mg/l)</th>
<th>Temp. °F or °C</th>
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Step 2 begin?
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<th>Pumping Rate (at least 3 steps) (gpm)</th>
<th>EC (uMhos)</th>
<th>Cl (mg/l)</th>
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Data in this table is for:
- Pumped Well
- Observation Well

Remarks:
- METER @ END
- METER = 15,137.235
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<th>Pumping rate Q (gpm)</th>
<th>EC (mhos)</th>
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**END TEST** Date: 2-18-2005 Time of day: 5:00 PM

ADDITIONAL REMARKS: __________________________________________________________________________

Person in charge of pump test (print): **TOM NANCE**

Signature: [Signature]

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
CONSTANT-RATE PUMP TEST DATA

Pumped Well No. 1901-06  Observation Well No. 14A
Pumped Well Name WELL NO. 4  Distance between Obs. & Pumped Well ft.
Target Q 250 gpm  Reference pt. for depth to water ft. msl

Static Water Level @ start of test ft. msl

Water level measurements by:  □ electrical sounder  □ pressure transducer  □ airline

START TEST Date: 2-18-2005  Time of day: 4:20 PM

Flow Meter Reading Start: 15,737.235 gallons

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<th>Drawdown (gpm/0.1 gpm)</th>
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*Amended 1/20/05 via message from H. Nance, M.
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Max possible duration, water level or quality did not stabilize for any 24 period

Begin recovery data next page
Flow meter reading at end of pumped period:

1 Chloride sampling required
2 Use same ending drawdown figure as start for recovery
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<th>Recovery Drawdown S (unadjusted to nearest 0.1 ft)</th>
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<th>EC (μmhos)</th>
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END TEST Date: 2-19-05 Time of day: 5:50 PM

ADDITIONAL REMARKS:

Person in charge of pump test (print): TOM NANCE

Signature: [Signature]

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
WELL CONSTRUCTION PERMIT
EP 27 Battery, Well No. 1901-06 & 1902-09 to 11

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of EP 27 Battery (Well No. 1901-06 & 1902-09 to 11) at Ocean Pointe, Ewa, Oahu, TMK 9-1-12:39 & 40, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §15-165-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1/4-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pumping test worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

3. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson.

4. The permittee, well operator, and/or well owner shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

5. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee, well operator, and/or well owner shall stop work and contact the Department's Historic Preservation immediately.

6. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

9. The well construction permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997; HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

10. The permit may be revoked by the Commission if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

11. If the well is not to be used it must be properly capped. If the well is to be abandoned then the permittee, well operator, and/or well owner must apply for a well abandonment permit in accordance with §13-166-12(10) prior to any well sealing or plugging work.

12. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

13. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: September 2, 2003
Expiration Date: September 2, 2005

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: Raymond S. Kane
Firm or Title: Hoeslho - Project U/I.
Date: 9/19/03

Driller's Signature: William C. Willsie
C-57 License #: 42-1096
Date: 9/19/03

Printed Name: William C. Willsie
Firm or Title:________________________

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachment

USGS
Department of Health/ Safe Drinking Water, Wastewater, and Clean Water Branches
Honolulu Board of Water Supply
Dwight Ho, 8.1vik Drilina
Ref: 1901-06, 1902-09 to 11.wcp

Mr. Ray Kanna  
HASEKO (Ewa), Inc.  
820 Mililani St., Ste. 820  
Honolulu, HI 96813

Dear Mr. Kanna:

Well Construction Permit  
EP 27 Battery (Well No. 1901-06 & 1902-09 to 11)

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s) that authorize well construction activities but excludes installation work for your permanent pump. As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 13:

Special Conditions

1. Attached for your information is a copy of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities.

2. Separate Well Completion Reports – Part 1 shall be filed for each well.

Please sign and have the contractor sign both permit originals and return one for our files. Also, copies of the aquifer pump test worksheet and the well completion report form are enclosed for your use.

IMPORTANT - Drilling work shall not commence until a fully signed permit is returned to the Commission. Please provide all the information in this packet to your well drilling contractor. The permittee, well operator, and/or well owner are responsible for all conditions of the permit. This includes ensuring that the well construction contractor, or other party who constructs the well(s), submits a completed Part I of the Well Completion Report form (enclosed) within sixty (60) days after the well construction work is completed. Be advised that you may be subject to fines of up to $1000 per day for any violations of your permit conditions starting from the permit approval date.

If you have any questions, please call Lenore Y. Nakama of the Commission staff at 587-0218.

Sincerely,

Peter T. Young  
Chairperson

Enclosures

C: Dwight Ho, Beylik Drilling
In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of EP 27 Battery (Well No. 1901-06 & 1902-09 to 11) at Ocean Pointe, Ewa, Oahu, TMK 9-1-12:39 & 40, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-158-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1/4-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pump testing worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

3. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson.

4. The permittee, well operator, and/or well owner shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

5. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee, well operator, and/or well owner shall stop work and contact the Department's Historic Preservation immediately.

6. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established in-stream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

9. The well construction permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997; HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

10. The permit may be revoked by the Commission if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

11. If the well is not to be used it must be properly capped. If the well is to be abandoned then the permittee, well operator, and/or well owner must apply for a well abandonment permit in accordance with §13-160-12(f) prior to any well sealing or plugging work.

12. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

13. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: September 2, 2003
Expiration Date: September 2, 2005

PETER T. YOUNG, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: ___________________________ Date: ______________
Printed Name: _______________ Firm or Title: ___________________________
Driller's Signature: ___________________________ Date: ______________
Printed Name: _______________ Firm or Title: ___________________________

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachment
c: USGS
Department of Health/ Safe Drinking Water, Wastewater, and Clean Water Branches
Honolulu Board of Water Supply
Dwight Ho, Bevlik Drilling
### SECTION 1: WELL LOCATION INFORMATION

<table>
<thead>
<tr>
<th>Island</th>
<th>OAHU</th>
<th>Aquifer System</th>
<th>EWA CAPROCK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquifer Sector</td>
<td>#11#11#11#</td>
<td>Proposed Use</td>
<td>Irrigation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proposed Withdrawal</td>
<td>3300000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>System Sustainable Yield</td>
<td>15</td>
</tr>
</tbody>
</table>

### SECTION 2: WELL SECTION DATA

(enter data in grey cells only)

<table>
<thead>
<tr>
<th>Elevation at top of casing</th>
<th>Solid Casing Material</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Elevation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement GROUT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rock Packing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hole Diameter</td>
<td></td>
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</tr>
<tr>
<td>Total Depth</td>
<td></td>
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<tr>
<td>Estimated Head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculated Aquifer Thickness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>County Water Supply (Y/N ?)</td>
<td>NO</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 3: CHECKLIST

(values to check are shaded)

**Well Depth**

- Theoretical Thickness of Aquifer: 61.5 ft.
- 1/4 Aquifer Thickness: 15.38 ft.
- Depth of Well below Sea Level: 12 ft.

**Well Casing**

- Minimum Wall Thickness: okay (disregard if the well is not basal, deep monitor or salt water)
- Material: PVC
- County or Non-County: non-county
- Minimum Thickness per standards: 0.687 in.
- Wall Thickness Provided: 0.687 in.
- Minimum Length of Solid Casing: 19.35 ft.
- 90% of ground to top of aquifer: 20 ft.
- Length of solid casing Provided: 20 ft.
- Casing Material: Sch 80

**Annular Space**

- Depth of Grouting: 15.05 ft.
- Calculated Depth of Grouting: 15.05 ft.
- Depth of Grouting provided: 20 ft.
- Thickness of Annular Space: 6 in.
AUG 29 2003

Log #: 2003.1604
Doc #:0308EJ43

Applicant/Agency: Ernest Y. W. Lau, Deputy Director
Commission on Water Resource Management

SUBJECT: Chapter 6E-42 Historic Preservation Review – Well Construction
Pump/Installation Permit Application Haseko EP27 Battery (Well No. 1901-06, 1902-09 to 11)

Ahupua'a: Honouliuli
District, Island: 'Ewa, O'ahu
TMK: __________ (1) 9-1-012:039 &040

1. We believe there are no historic properties present, because:
   
   __ a) intensive cultivation has altered the land
   __ b) residential development/urbanization has altered the land
   __ c) previous grubbing/grading has altered the land
   __ d) an acceptable archaeological assessment or inventory survey found no historic properties
   __ e) other:

2. This project has already gone through the historic preservation review process, and mitigation has been completed __✓__.

✓ Thus, we believe that “no historic properties will be affected” by this undertaking.

Aloha,

P. Holly McEldowney, Acting Administrator
State Historic Preservation Division
August 14, 2003

TO: Honorable Chiyome L. Fukino, M.D., Director
   Department of Health
   Attention: Harold Yee, Wastewater Branch
   William Wong, Safe Drinking Water Branch
   Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
   Alec Wong, Clean Water Branch

FROM: Peter T. Young, Chairperson
       Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
          EP 27 Battery (Well No. 1901-06, 1902-09 to 11)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by September 2, 2003. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments. The applicant has requested expedited processing of this application, and your earliest review and comment would be appreciated.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Lenore Y. Nakama of the Commission staff at 587-0218.

LYN:ss
Attachment(s)

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29.

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant's information, a source of possible wastewater contamination is located near the proposed well site (information attached).

[ ] An NPDES permit is required.

[ ] Other relevant DOH rules/regulations, information, or recommendations are attached.

No comments/objections

Contact Person: Lori N. Kajiwara
Phone: 586-4294

Signed: Lori N. Kajiwara
Date: 8-21-2003
August 14, 2003

TO: Honorable Chiyome L. Fukino, M.D., Director
   Department of Health
   Attention: Harold Yee, Wastewater Branch
              William Wong, Safe Drinking Water Branch
              Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
              Alec Wong, Clean Water Branch

FROM: Peter T. Young, Chairperson  
      Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
         EP 27 Battery (Well No. 1901-06, 1902-09 to 11)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by September 2, 2003. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments. The applicant has requested expedited processing of this application, and your earliest review and comment would be appreciated.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Lenore Y. Nakama of the Commission staff at 587-0218.

LYN:ss
Attachment(s)

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20:29.

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant's information, a source of possible wastewater contamination [] is not located near the proposed well site (information attached).

[ ] An NPDES permit is required.

[ ] Other relevant DOH rules/regulations, information, or recommendations are attached.

[ ] No comments/objections

Contact Person: Bill Wong

Phone: 586-4258

Date: AUG 20 2003

Signed: Bill Wong
August 14, 2003

TO: Dede Mamiya, Administrator
   Land Division

FROM: Ernest Y.W. Lau, Deputy Director
   Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
         EP 27 Battery (Well No. 1901-06, 1902-09 to 11)

Transmitted for your review and comment is a copy of the captioned Well
Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the
programs, plans, and objectives specific to your division. Please respond by returning this
cover memo form by September 2, 2003. If we do not receive comments or a request for
additional review time by this date, we will assume you have no comments. The applicant
has requested expedited processing of this application, and your earliest review and comment
would be appreciated.

Please find the attached maps to locate the proposed well. If you have any questions
about this permit application, request additional information, or request additional review time,
please contact Lenore Y. Nakama of the Commission staff at 587-0218.

RESPONSE:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our
division.

✓ A water lease/permit is not required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no.

[ ] This well project [ ] requires [ ] does not require a CDUP. If a CDUP is required it [ ] has
   [ ] has not been approved and [ ] is [ ] is not currently active.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

✓ Other comments: Original source of private title was issued prior to statehood.

Contact Person: Stacy Martinez
Phone: 587-0421
Signed: Stacy Martinez
Date: AUG 22 2003
August 14, 2003

TO: Honororable Chiyome L. Fukino, M.D., Director
   Department of Health
   Attention: Harold Yee, Wastewater Branch
            William Wong, Safe Drinking Water Branch
            Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
            Alec Wong, Clean Water Branch

FROM: Peter T. Young, Chairperson
      Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
         EP 27 Battery (Well No. 1901-06, 1902-09 to 11)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by September 2, 2003. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments. The applicant has requested expedited processing of this application, and your earliest review and comment would be appreciated.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Lenore Y. Nakama of the Commission staff at 587-0218.

LYN:ss
Attachment(s)

RESPONSE:

[1] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or more 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR) Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-26-20.

[1] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 16 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[1] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable outlets with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[1] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[1] For the applicant’s information, a source of possible wastewater contamination [is] [is not] located near the proposed well site (information attached).

[1] An NPDES permit is required.

RK Other relevant DOH rules/regulations, information, or recommendations are attached.

No comments/objections

Contact Person: Dr. Keith Kawaoka Phone: 586-4249

Signed: Date:

Fax to: Commission on Water Resources Mgt. 587-0219
August 20, 2003

TO: Lenore Y. Nakama, Staff
Commission on Water Resources Management
Department of Land and Natural Resources

FROM: Keith Kawaoka, D. Env.
Hazard Evaluation & Emergency Response (HEER) Office
Hawaii State Department of Health

SUBJECT: Well Construction/Pump Installation Permit Application
EP 27 Battery Wells (Well No. 1901-06 & 1902-09 to 11)

Ewa Sugar Mill/Oahu Sugar Co. – Coral Waste pit

This site has undergone a Preliminary Assessment (6/93), Site Inspection (9/99) and subsequent site screening by the HEER Office for the possibility of chemical contamination at a coral waste pit. The HEER Office issued a No-Further-Action (NFA) letter in January 2001.
August 14, 2003

TO: Honorable Chiyome L. Fukino, M.D., Director
Department of Health
Attention: Harold Yee, Wastewater Branch
William Wong, Safe Drinking Water Branch
Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
Alec Wong, Clean Water Branch

FROM: Peter T. Young, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
EP 27 Battery (Well No. 1901-06, 1902-09 to 11)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by September 2, 2003. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments. The applicant has requested expedited processing of this application, and your earliest review and comment would be appreciated.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Lenore Y. Nakama of the Commission staff at 587-0218.

LYN:ss
Attachment(s)

RESPONSE:

[1] This well qualifies as a source which will serve as a source of portable water to a public water system (defined as serving 25 or more people at least 90 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with new Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Public Water Systems, §11-25-29.

[1] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year of 15 service connections) and if the well is used for drinking, the private owner should test for bacteriological and chemical presence before installing such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[1] If the well is used to supply both portable and non-portable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating positive and non-positive systems by an air gap or an approved backflow preventer, and by clearly labeling all non-portable spigots with warning signs to prevent inadvertent consumption of non-portable water. Backflow prevention devices should be routinely inspected and tested.

[1] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[1] For the applicant's information, a source of possible wastewater contamination (WTP) is not located near the proposed well site (information attached).

[1] An NPDES permit is required.

[1] Other relevant DOH rules/regulations, information, or recommendations are attached.

[1] No comments/objections.

Contact Person: Alec Wong
Phone: 586-6809
Date: 8/22/03
Signed: WAI, HONOLULU, HAWAII 96819

August 14, 2003
The Department of Health, Clean Water Branch has the following comments:

1. For Well-Drilling Activities

Any discharge to State waters of treated process wastewater effluent associated with well drilling activities is regulated by Hawaii Administrative Rules, Title 11, Chapter 55, Appendix I, effective September 22, 1997. Treated process wastewater effluent covered by this general permit includes well drilling slurries, lubricating fluids wastewaters, and well purge wastewaters. This general permit does not cover well pump testing. The applicable Notice of Intent Forms and filing fee shall be submitted at least thirty (30) days before the start of discharge to the Department of Health, Clean Water Branch at 919 Ala Moana Boulevard, Room 301, Honolulu, Hawaii 96814-4920 or P.O. Box 3378, Honolulu, Hawaii 96801-3378. Inquiries may be directed to the Clean Water Branch at (808) 586-4309 or by fax at (808) 586-4352.

2. For Well Pump Testing

The discharger shall take all measures necessary to prevent the discharge of pollutants from entering State waters. Such measures shall include, if necessary, containment of the initial discharge until the discharge is essentially free of pollutants. If the discharge is entering a stream or river bed, best management practices shall be implemented to prevent the discharge from disturbing the clarity of the receiving water. If the discharge is entering a storm drain, the discharger must obtain written permission from the owner of that storm drain prior to discharge. Furthermore, best management practices shall be implemented to prevent the discharge from collecting sediments and other pollutants prior to entering the storm drain.

JS/cr
August 14, 2003

Mr. Ray Kanna
HASEKO (Ewa), Inc.
820 Mililani Street, Ste. 820
Honolulu, HI 96813

Dear Mr. Kanna:

Well Construction/Pump Installation Permit Application for Well No. 1901-06, 1902-09 to 11

We acknowledge receipt, on August 8, 2003, of your completed Well Construction/Pump Installation permit application and filing fee for the EP 27 Battery (Well No. 1901-06, 1902-09 to 11). We understand that you are requesting expedited review and processing and we will accommodate you to the best of our ability.

For your information, the process of constructing a well is normally regulated and permitted in two (2) steps. First, a well construction permit is issued for drilling and testing purposes only. Based upon information provided by you through a Well Completion Report Part 1 (Well Construction), a pump installation permit (upon completed application) may then be issued to authorize pump work. If a pump is installed then a Well Completion Report Part 2 (Pump Installation) is required.

If you have any questions about your permit application, please contact Lenore Y. Nakama of the Commission staff at 587-0218.

Sincerely,

ERNEST Y.W. LAU
Deputy Director

LYN:ss
TO: Honorable Chiyome L. Fukino, M.D., Director
Department of Health
Attention: Harold Yee, Wastewater Branch
William Wong, Safe Drinking Water Branch
Dr. Keith Kawaoaka, Hazardous Evaluation and Emergency Response
Alec Wong, Clean Water Branch

FROM: Peter T. Young, Chairperson Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
EP 27 Battery (Well No. 1901-06, 1902-09 to 11)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by September 2, 2003. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments. The applicant has requested expedited processing of this application, and your earliest review and comment would be appreciated.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Lenore Y. Nakama of the Commission staff at 587-0218.

LYN:ss
Attachment(s)

RESPONSE:

This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-26.

This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use of this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

For the applicant's information, a source of possible wastewater contamination[] is not located near the proposed well site (information attached).

An NPDES permit is required.

Other relevant DOH rules/regulations, information, or recommendations are attached.

No comments/objections

Contact Person: ___________________________ Phone: ______________

Signed: ___________________________ Date: ______________
TO: Dede Mamiya, Administrator  
Land Division

FROM: Ernest Y.W. Lau, Deputy Director  
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application  
EP 27 Battery (Well No. 1901-06, 1902-09 to 11)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by September 2, 2003. If we do not receive comments or a request for additional review time by this date, we will assume you have no comments. The applicant has requested expedited processing of this application, and your earliest review and comment would be appreciated.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Lenore Y. Nakama of the Commission staff at 587-0218.

LYN:ss
Attachment(s)

RESPONSE:
[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.
[ ] A water lease/permit is not required of this applicant.
[ ] A water lease/permit has been obtained by the applicant through lease no. ________________________.
[ ] This well project [ ] requires [ ] does not require a CDUP. If a CDUP is required it [ ] has [ ] has not been approved and [ ] is [ ] is not currently active.
[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.
[ ] No objections
[ ] Other comments:

Contact Person: ___________________________  Phone: ______________
Signed: ___________________________  Date: ______________
August 14, 2003

TO: Holly McEldowney, Acting Administrator
   Historic Preservation

FROM: Ernest Y.W. Lau, Deputy Director
       Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
         EP 27 Battery (Well Nos. 1901-06, 1902-09 to 11)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by September 2, 2003. If we do not receive comments or a request for additional review time by this date, we will assume you have no comments. The applicant has requested expedited processing of this application, and your earliest review and comment would be appreciated.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Lenore Y. Nakama of the Commission staff at 587-0218.

LYN:ss
Attachment(s)

RESPONSE:

[ ] There may be areas in the vicinity of the well site that contain subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal.

[ ] Other relevant Historic Preservation rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact Person: ___________________________ Phone: ____________

Signed: ___________________________ Date: ____________
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<th>APP</th>
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**TOTAL** | $ 75.00

**REMARKS:**
LINE (1) Well No. 1901-06, 1902-09 to 11
LINE (2) Hina-Grace Bible Well (TMK: 3-8-71:81)
LINE (3) Kaupakalua-uPcOUNTRY LLC Well (TMK: 2-7-13:50)
LINE (4) 
LINE (5) 
LINE (6) 
LINE (7) 
LINE (8) 
LINE (9) 
LINE (10) 

July 8, 2003

Ernest Y.W. Lau, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Lau:

Per your correspondence dated July 2, 2003, Mr. Raymond Kanna is our authorized representative for Ke Noho Kai Development, LLC, the landowner at TMK: 9-1-12:40 for all matters related to the Department of Land and Natural Resources.

If you have any further questions, please contact me at (808) 224-1365.

Sincerely yours,

By Haseko Homes, Inc., a Hawaii Corporation
Its Manager

Toru Nagayama
President
July 8, 2003

Ernest Y.W. Lau, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Lau:

Per your correspondence dated July 2, 2003, Mr. Raymond Kanna is our authorized representative for Ke Noho Kai Development, LLC, the landowner at TMK: 9-1-12:40 for all matters related to the Department of Land and Natural Resources.

If you have any further questions, please contact me at (808) 224-1365.

Sincerely yours,

By Haseko Homes, Inc., a Hawaii Corporation
Its Manager

Toru Nagayama
President
Mr. Ray Kanna  
HASEKO (Ewa), Inc.  
820 Mililani Street, Ste. 820  
Honolulu, HI 96813  

Dear Mr. Kanna:

Well Construction/Pump Installation Permit Application for  
Well No. 1901-06, 1902-01, 09 to 11

We have received your Well Construction/Pump Installation permit application and filing fee for the EP 27 Battery (Well No. 1901-06, 1902-01, 09 to 11). However, your application is incomplete. Matters which must be addressed before we accept your application as complete are as follows:

1. Please provide the signature of an authorized representative for Ke Noho Kai Dev LLC, landowner at Tax Map Key 9-1-12-40, on the above-referenced application or attached to a statement acknowledging that an application is being made to construct a new well(s) on its land.

Upon receipt of the above information we will accept your application as complete and you can then expect your application to be processed within ninety (90) days.

If you have any questions about your permit application, please contact Lenore Y. Nakama of the Commission staff at 587-0218.

Sincerely,

[Signature]

ERNEST Y.W. LAU  
Deputy Director

LYN:ss
**PUBLIC RECORD DATA**

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<th>Taxkey</th>
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<th>Tnr Address</th>
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This information has been supplied by third parties and has not been independently verified by Hawaii Information Service and is, therefore, not guaranteed.
PUBLIC RECORD DATA

TMK # 1-9-1-12-40

Owner: KE NOHO KAI DEV LLC
Tax Payer: KE NOHO KAI DEV LLC

Tenure: Fee Simple

Assessed Value

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Annual Tax: $33,642.26

Buildings: 0
Dwellings: 0
PITT Code: 0
Land Use: 0
Zoning: 0
Subdivision: 0

SALES

5/3/2002 DEED -M
$15,455,000 LCD 2801403 TCT 610660
K NOHO KAI DEVELOPMENT LLC, A Company or Corporation(Tenants in Severalty)

DEPARTMENT OF PLANNING AND PERMITTING

This data from the Department of Planning and Permitting is unofficial and is subject to change without notice. It is the user's responsibility to verify the accuracy of information from official documents which are available for inspection at the City department responsible for the data.

CIVIL FINES: NONE
DEVELOPMENT PLAN AREA: EWA
DEVELOPMENT PLAN DESIG: SUPERSEDED BY ORD 97-49. EFFECTIVE 10/21/97.
FLOOD ZONE: FIRM ZONE D
HEIGHT LIMIT: 25 FEET
HISTORIC SITE REGISTER: NONE
LOT RESTRICTIONS: NONE
SMA/SHORELINE: NOT IN SMA
SPECIAL DISTRICT: NOT IN SPECIAL DISTRICT
STATE LAND USE: URBAN DISTRICT
STREET SETBACK: NONE
ZONING (CZC): AG-2 GENERAL AGRICULTURAL
ZONING (LUO): AG-2 GENERAL AGRICULTURAL DISTRICT

This information has been supplied by third parties and has not been independently verified by Hawaii Information Service and is therefore, not guaranteed.
## Well Background Check

<table>
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<th>Approved Well No.</th>
<th>Well Name</th>
<th>Applicant</th>
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June 23, 2003
03/260 (03-40)

Mr. Ernest Y.W. Lau
Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Lau:

Well Construction Permit Application
for the EP27 Battery Wells (State Well Nos. 1902-09, 1902-10, 1902-11, and 1901-06)

Attached is the Well Construction and Pump Installation permit application and filing fee for the EP27 Battery Wells (State Well Nos. 1902-09, 1902-10, 1902-11, and 1901-06). Feel free to call me or Ray Kanna (224-1365) if you have questions.

Sincerely,

Tom Nance

cc: Ray Kanna

Attachments
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
APPLICATION FOR PERMIT

Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Application must be accompanied by 5 copies and a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at 587-0225. For further information and updates to this application form, visit http://www.state.hi.usldlnr/cwrm.

APPLICANT INFORMATION:

1. (a) WELL OWNER: HASEKO (Ewa), Inc. Contact Person: Ray Kanna Phone: 224-1365
   Mailing Address: 820 Mililani Street - Suite 820 Honolulu, Hawaii 96813
   Fax: 538-7654

   (b) LAND OWNER: HASEKO (Ewa), Inc. Contact Person: Ray Kanna Phone: 224-1365
   Mailing Address: 820 Mililani Street - Suite 820 Honolulu, Hawaii 96813
   Fax: 538-7654

   (c) CONTRACTOR: Beylik Drilling, Inc. Contact Person: Dwight Ho Phone: 682-5554
   Mailing Address: 91-259-A Olai Street, Kapolei, Hawaii 96707
   Fax: 682-5866

WELL & PUMP INFORMATION:

2. WELL NAME: EP-27 Battery Island: Oahu
   Address: Ocean Pointe, Ewa Tax Map Key: 9 1 12 : Zone 39 & 40
   Attach: (a) portion of a 7.5-Minute Series USGS topographic map (scale 1:24,000) with well location labeled and include the name of the quad map
   (b) a property tax map, showing well location referenced to established property boundaries

3. PROPOSED WORK:
   (check all that apply)
   - Construct New Well
   - Modify Existing Well
   - Abandon/Seal
   - Install New Pump
   - Modify Pump

   4. CONSTRUCTION:
   - Drilled
   - Dug
   - Shaft
   - Tunnel

   Four drilled wells
   Is this well part of a battery of wells?  Yes
   No (Please describe) of the EP-27 Battery
   350 gallons per minute (each drilled well)

5. PROPOSED PUMPING RATE:
   (check all that apply)
   - Municipal (including hotels, stores, etc.)
   - Domestic (individual, noncommercial water system)
   - Irrigation (crop)
   - Golf Course, Other Landscaping
   - Agriculture and dust control
   - Military
   - Other (explain):

6. PROPOSED USE:
   - Other commercial (explain):
   - Other (explain):

7. (a) PROPOSED AMOUNT OF WITHDRAWAL:
   - 3,300,000 gallons per day (Total from the Battery)
   - Other (explain):

(b) METHOD OF FLOW MEASUREMENT:
   - Flowmeter
   - Open pipe
   - weir
   - office
   - Other (explain):

8. LEGAL REQUIREMENTS:
   - Conservation District Use Permit (CDUP) To find out if a CDUP is necessary, call DLNR Land Division at 587-0414
     Required required, date approved ______ 
   - Environmental Impact Statement (EIS) or Environmental Assessment (EA)
     To determine if an EIS or EA is necessary, call OEOC at 586-4185
     Required if required, date published in OEOC bulletin ______
   - Special Management Area Permit (SMAP)
     To determine if an SMAP is necessary: on Oahu, call 627-5374; on Maui, call 961-8288; for Maui county, call 270-7235; on Kauai, call 241-6677.
     Required if required, date approved ______

9. REMARKS, EXPLANATIONS:
   The well section shown on the back of this application is essentially identical for all four wells.

NOTE: Signing below indicates the signatories understand and swear that the information provided on this application is accurate and true to the best of their knowledge. Further, the signatories understand that approval of this application attaches the following standard conditions: 1) the proposed work is to be completed within two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion/abandonment report within 60 days after the completion date of the permitted work; 3) monthly water use data shall be submitted to the Commission; 4) such approval shall not constitute a determination of correlative water rights and shall not guarantee the pump capacity or future use up to the permitted pump capacity; 5) in the event that the application is not completed correctly, any permit may be suspended until the item is brought in to compliance, and any work done while the permit is in suspension may result in fines up to $5,000 per day.

Well Owner HASEKO (Ewa), Inc. Landowner HASEKO (Ewa), Inc. Contractor Beylik Drilling
Signature Ray Kanna Signature Ray Kanna Signature Dwight Ho
Date 6/1/2020 Date 6/25/2020 Date 6/25/2020
10. PROPOSED WELL SECTION (Please attach schematic if different from diagram provided below)

Elevation at top of casing: 25 ft. msl*

Total Depth: 15 ft.

Hole Diameter: 24 in.

Minimum of 2 Radius & 4" Thick Concrete Pad (to contain benchmark surveyed to nearest 0.01 ft.)

Ground Elevation: 23 ft. msl*

Please refer to the HAWAII WELL CONSTRUCTION AND PUMP INSTALLATION STANDARDS to ensure that your as-built is in compliance with applicable standards.

Solid Casing: (≥ 90% x (Ground Elev.-Water Level Elev))
- Total Length: 20 ft.
- Nominal Diameter: 12 in.
- Wall Thickness: 0.687 in.
- Bottom Elevation: +3 ft. msl*

Open Casing:
- Perforated
- Screen
- Total Length: 10 ft.
- Nominal Diameter: 12 in.
- Wall Thickness: 0.687 in.
- Bottom Elevation: -7 ft. msl*

Note: Neither bentonite nor mud should be used in saturated zone-driven drills

Open Hole:
- Length: 5 ft.
- Diameter: 24 in.
- Bottom Elevation: -12 ft. msl*

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or:
- Bottom Elevation of Well Limit = (Water Elevation - Ground Elevation) / 4


Solid Casing Material:
- Carbon Steel: compliant with (check one or more): □ ANSI/AWWA C200 □ API Spec. 5L □ ASTM A53 □ ASTM A139
- Stainless Steel: (check one): □ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one): □ Schedule 40 □ Schedule 80
- PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2341): (check one): □ Schedule 40 □ Schedule 80 □ Schedule 120
- Thermoset Plastic: (check one)
  □ Filament Wound Resin Pipe conforming to ASTM D2996
  □ Centrifugally Cast Resin Pipe conforming to ASTM D2997
  □ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
  □ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  □ PTFE Fluorocarbon Tubing conforming to ASTM D3296
  □ FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
- Carbon Steel: compliant with (check one or more): □ ANSI/AWWA C200 □ API Spec. 5L □ ASTM A53 □ ASTM A139
- Stainless Steel: (check one): □ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one): □ Schedule 40 □ Schedule 80
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  □ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  □ PTFE Fluorocarbon Tubing conforming to ASTM D3296
  □ FEP Fluorocarbon Tubing conforming to ASTM D3296
FILE CLOSED 5-15-03

SEE FOLDER FOR

1901-06, 1902-01, 09 # 11
Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, Hawaii 96813

(WUP No. 650)

2. Article Number (Copy from service label)
May 15, 2003

Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

This is in response to your April 25, 2003 letter, requesting administrative modification of Water Use Permit (WUP) Nos. 192 and 347 for EP 27 (Well No. 1902-01) pursuant to Declaratory Ruling No. DEC-ADM97-A1 and administrative modification of the water use permit issued in Contested Case No. CCH-OA96-1 (Marina permit) pursuant to Administrative Rule 13-171-23(b).

The first part of the request by Haseko Ewa, Inc. (HASEKO) is to administratively modify WUP Nos. 192 and 347 by transferring the allocations from EP 27 to a battery of wells consisting of EP 27 and four proposed wells. From the map provided, we have assigned the four proposed wells Well Nos. 1902-09, 10, 11 and 1901-06, going from west to east. We find that HASEKO’s request meets the criteria for administrative modification under DEC-ADM97-A1. Please find attached Well Construction Permit application forms for the four proposed wells.

The second part of HASEKO’s request is to administratively modify Special Conditions (b) and (c) in the Commission on Water Resource Management’s Decision and Order (D&O) in the matter of the Water Use Permit Application for the Ewa Marina Contested Case Hearing (Case No. CCH-OA96-1) pursuant to Administrative Rule 13-171-23(b). In effect, Special Conditions (b) and (c) limit the durations of WUP Nos. 192 and 347 to coincide with the start of marina construction and orders the use of reclaimed water as an alternate nonpotable source upon cancellation of WUP Nos. 192 and 347.

HASEKO is requesting modification of Special Conditions (b) and (c) because marina construction is ready to commence, however, reclaimed water is not available in sufficient supply for HASEKO’s nonpotable needs. We have confirmed with the Board of Water Supply that HASEKO has received only a limited amount of reclaimed water for use at the park site.
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Postage $ 1.06
Certified Fee
Return Receipt Fee
(Endorsement Required) $ 2.30
Restricted Delivery Fee
(Endorsement Required) $ 1.75
Total Postage & Fees $ 2.51

MAY 19 2003
(WUP NO. 650)

Sent To
Mr. Nelson W.G. Lee
820 Mililani St., Ste. 810
Honolulu, HI 96813

7001 2510 0002 7573 9029
RETAIL MAIL SERVICES;
- Certified Mail
- Insured Mail
- Registered Mail
- Signature on Delivery
- Insurance coverage for two years

IMPORTANTheiten:
- Certified Mail may be combined with First Class Mail or Priority Mail.
- Contact USPS for coverage of any class of international mail.
- NO INSURANCE COVERAGE is provided with Certified Mail. For insured mail, consider Insured or Registered Mail.
- For an authorized official, a Return Receipt may be requested to provide proof of delivery. To request a Return Receipt service, please complete and attach a Return Receipt Request form to the article and add applicable postage to cover the cost. To request a Return Receipt Requested, to receive a fee waiver for United States delivery, a USPS postmark on your Certified Mail receipt is required.
- On successful delivery, additional fees may be required to address or address the mail. Please advise the clerk or mark the mailpiece with the address of the recipient. Certified delivery.
- To receive a fee waiver for United States delivery, please present the article to the post office for postmarking. If a postmark on the Certified Mail receipt is desired, please present the article to the post office for postmarking, affix label with postage and mail.

IMPORTANT: Save this receipt and present it when making an inquiry.

US Form 3550 January 2001 (Reverse)
102595-01-M-1049
nearest the mauka boundary of HASEKO’s property. We understand that additional water will still be needed to supply the golf course, landscaping, and for dust control and that the nonpotable transmission system still does not exist. Absent the ability to use caprock ground water or reclaimed water, the only other available alternative would be potable water from the municipal water system, which would not result in the most efficient utilization of available resources.

In light of these changed conditions, that were unanticipated at the time the D&O was issued, and in consideration of the efficiency of water use, we find that HASEKO’s proposal falls within the provisions of Administrative Rule 13-171-23(b).

Further, we note that, subsequent to the D&O (issued September 25, 1998), on July 18, 2001, the Commission on Water Resource Management (Commission) extended all other interim water use permits in the Puuloa and Kapolei Ground Water Management Areas to: 1) July 1, 2006, or 2) until treated wastewater is available and acceptable for use, or 3) until such time that a significant change in permitted, actual, or projected uses or water supply occurs. We believe that this duration is also appropriate for the proposed EP 27 well battery.

We have combined WUP Nos. 192 and 347, which have been cancelled, under a single new water use permit, WUP No. 650 (attached). The terms and conditions of WUP No. 650 are identical to those approved for other interim water use permits in the Puuloa and Kapolei Aquifer Systems.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

ERNEST Y.W. LAU
Deputy Director

LN:ss
Attachments
May 15, 2003

Ref: 650.wup

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well Nos. 1901-06, 1902-01, 09, 10, 11

Puuloa Ground-Water Management Area, Oahu

This letter transmits your water use permit for the EP 27 Battery (Well No.1901-06, 1902-01, 09, 10, 11) for use of 3.300 million gallons per day (mgd) of water on a 12-month moving average basis that was administratively modified by the Commission on Water Resource Management (Commission) per Declaratory Ruling DEC-ADM97-A1 and Administrative Rule 13-171-23(b).

This water use permit, WUP No. 650, supersedes WUP Nos. 192 and 347, which have been cancelled. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 19:

**Special Conditions**

- **a.** Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

- **b.** 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.

- **c.** Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

- **d.** The duration of the interim permit shall be
  - a) to July 1, 2006, or
  - b) until treated wastewater is available and acceptable for use, or
  - c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

- **e.** Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment A and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment B.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit.

We draw your attention to two key conditions of your permit that require your response. First, you are required to keep a record of your monthly total pumpage, water level, salinity, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

Second, you are required to submit a water shortage plan to the Commission within thirty (30) days of the issuance date of this permit. Your water shortage plan simply identifies what you are willing to do should the Commission declare a water shortage situation in the Puuloa Ground-Water Management Area and can be as short as a one page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from all sources. The Commission is required, by law, to formulate a plan to implement such area-wide reductions, which should accommodate, include, and be consistent with your plans. Therefore, your help, by submitting your water shortage plan, is greatly needed in formulating the Commission's overall Water Shortage Plan.

If you have any questions, please call Lenore Y. Nakama of the Commission staff at 587-0218.

Sincerely,

[Signature]

Peter T. Young
Chairperson

Attachments
GROUND-WATER USE PERMIT
WUP NO. 650

PERMITTEE

<table>
<thead>
<tr>
<th>Permittee/Water User</th>
<th>Landowner of Source</th>
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<tbody>
<tr>
<td>Haseko (EWA), Inc.</td>
<td>Same</td>
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<tr>
<td>820 Mililani St., Ste. 810</td>
<td>Same</td>
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<tr>
<td>Honolulu, HI 96813</td>
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PERMITTED SOURCE INFORMATION

<table>
<thead>
<tr>
<th>Island</th>
<th>Oahu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Management Area</td>
<td>Ewa Caprock</td>
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<tr>
<td>Aquifer Sector</td>
<td>Puuola</td>
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<tr>
<td>Aquifer System</td>
<td>Puuola</td>
</tr>
<tr>
<td>System Sustainable Yield</td>
<td>1000 mg/l of Chloride</td>
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<tr>
<td>Well Name</td>
<td>EP 27 Battery</td>
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<tr>
<td>State Well No.</td>
<td>1901-06, 1902-01, 09, 10, 11</td>
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</tbody>
</table>

PERMITTED USE INFORMATION

<table>
<thead>
<tr>
<th>Reasonable beneficial use</th>
<th>Dust Control, Golf Course and Landscaping Irrigation</th>
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</thead>
<tbody>
<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>3.300 mgd</td>
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<tr>
<td>Location of water use</td>
<td></td>
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<tr>
<td>TMK #</td>
<td>9-1-12:5</td>
</tr>
<tr>
<td>Address</td>
<td>Ocean Pointe</td>
</tr>
<tr>
<td>State land use classification</td>
<td>Urban</td>
</tr>
<tr>
<td>County zoning classification</td>
<td>Various</td>
</tr>
</tbody>
</table>

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the permittee is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial use means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 and July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water use;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.
14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

[Signature]

PETER T. YOUNG, Chairperson
Commission on Water Resource Management

Attachment
Dear Mr. Lau:

HASEKO Ewa, Inc. (HASEKO), is the holder of each of the above-referenced water use permits and seeks modification of the permits as follows. First, HASEKO requests that the Chairperson approve the administrative transfer of Water Use Permit (WUP) nos. 192 and 347 from State Well No. 1902-01 to a battery of wells located on HASEKO's property pursuant to Commission on Water Resource Management (CWRM) Declaratory Ruling No. DEC-ADM97-A1. Second, HASEKO requests that the Commission modify the WUP issued in Contested Case No. CCH-OA96-1 (Marina Permit), without a hearing, pursuant to Rule §13-171-23(b) of Hawaii Administrative Rules (HAR).

1. MODIFICATION OF WATER USE PERMIT NOS. 192 AND 347. On December 16, 1992, CWRM issued WUP no. 192 to Oahu Sugar Company, Ltd. (OSCO), and HASEKO allowing for the existing use of 4.160 million gallons per day (mgd). On July 13, 1994, CWRM modified WUP no. 192 to allow for 2.660 mgd of agricultural use and issued WUP no. 347 to allow for 1.5 mgd of urban use. On May 14, 1997, CWRM modified WUP nos. 192 to allow for 1.8 mgd of agricultural use. On July 18, 2001, CWRM extended the permits to July 1, 2006, until treated wastewater became available and acceptable for use, or a significant change in water use or supply occurred. On March 12, 2003, pursuant to a request by HASEKO, CWRM issued a variance to HASEKO granting it relief from the 1,000 mg/l chloride limit for Well No. 1902-01.

CWRM Declaratory Ruling No. DEC-ADM97-A1 issued January 5, 1998, provides that the CWRM Chairperson has been delegated the authority to approve allocation adjustments where a) the net change in permitted use within the aquifer is zero, b) the modification would result in more efficient and...
optimal operation of multiple sources under a single operator, c) no adverse impacts to water resources or other existing legal uses are anticipated, and d) end use location and type remain unchanged.

In order to address the increased chloride levels at EP 27 and to continue to provide non-potable water for the same uses at the HASEKO parcel, HASEKO requests that the Chairperson approve the administrative transfer of WUP nos. 192 and 347 to a battery of wells set forth in the map prepared by Tom Nance, P.E., a true and accurate copy of which is attached hereto as Exhibit A. HASEKO further anticipates that it will be submitting well drilling permits for these proposed wells. HASEKO believes that this requested modification meets each of the criteria set forth in the declaratory ruling as follows:

a) Net Change in Permitted Use with Aquifer is Zero. As noted in the attached map, the proposed wells are all located on the HASEKO parcel and are within the Ewa Caprock aquifer. The total withdrawn under WUP nos. 192 and 347 would remain unchanged.

b) Modification would Result in More Efficient and Optimal Operation of Multiple Sources Under a Single Operator. In order to address the increased chloride levels encountered at EP 27, the proposed battery of wells will lessen the drawdown occurring at EP 27 and will utilize shallow wells at sites across the HASEKO property. It is believed that this reduction in pumpage at EP 27 will result in an overall reduction in the chloride levels of the water withdrawn. Additionally, it is noted that the Board of Water Supply’s (BWS) reclaimed wastewater system has not yet been extended into the HASEKO parcel. HASEKO has applied to the BWS for reclaimed water and it is anticipated that the amounts that are presently available will be used at the district park site located on the mauka edge of its property.

c) No Adverse Effects on Water Resources or Other Existing Legal Uses. As the HASEKO property and well sites are located on the makai edge of the Ewa Plain, it is noted that there are no downgradient wells and thus there will be no adverse impact to the resource or other users.

d) End Use Location and Type Remain Unchanged. The water withdrawn will continue to be used by HASEKO for dust control on its parcel and for irrigation at its turf farm.

Based upon the foregoing, HASEKO requests that the Chairperson modify the terms of WUP 192 and 347 to allow for withdrawal of the allocated amounts from the well sites described in the attached map.

2. MODIFICATION OF THE MARINA WATER USE PERMIT. The Marina Permit, issued by CWRM on September 25, 1998, provides at specials conditions (b) and (c) that WUP nos. 192 and 347 shall be cancelled with HASEKO’s written consent upon the start of marina construction and that upon cancellation, HASEKO shall use reclaimed water for its non-potable needs. HASEKO is preparing to excavate the marina and anticipates that construction will begin shortly. The BWS’ reclaimed wastewater system has been extended to a point near the mauka-Diamond Head (northeast) corner of the HASEKO parcel. HASEKO has requested that reclaimed water be supplied to the Ocean Pointe development and the BWS has agreed to supply 100,000 gallons per day (gpd) to HASEKO for irrigation purposes at the district park site located alongside Ft. Weaver Road. HASEKO still requires non-potable water for dust control at locations across its property and for irrigation of its sod farm operation.
HAR §13-171-23(b) provides in relevant part:

All permit applications shall be treated as initial permit applications and be subject to sections 13-171-12 to 13-171-22; except that if the proposed modification involves an increase in the quantity of water not exceeding an average amount per month as set forth in section 13-171-14, the commission, at its discretion, may approve the proposed modification without a hearing provided that the permittee establishes that:

(1) A change in conditions has resulted in the water allowed under the permit becoming inadequate for the permittee’s proposed needs; or

(2) The proposed modification would result in a more efficient utilization of water than is possible under the existing permit.

HASEKO requests that the Commission approve the modification of the Marina Permit, without a hearing, to allow HASEKO to defer surrender of WUP nos. 192 and 347 until reclaimed water becomes available and acceptable for use on the HASEKO parcel, and then to allow HASEKO to retain the allocation for use as a supply of backup or supplemental non-potable water in the event that reclaimed water becomes unavailable in quantities sufficient for HASEKO’s non-potable needs. HASEKO believes that the Commission has the authority to grant this request as the same falls within the exemption set forth in HAR §13-171-23(b) as follows.

First, the modification seeks an increase in water allocation, e.g. from a surrender of the entire permitted amount to the present interim allocated amount of 3.166 mgd, with the same being less than amount originally allocated from EP 27 as an existing use pursuant to HAR §13-171-14. In this case, the original existing use allocated by CWRM to OSCO on December 16, 1992, was 4.160 mgd. The amount presently allocated and sought to be retained is actually less than that permitted as an existing use.

Second, HASEKO observes that there has been a change in circumstances from those envisioned by CWRM when the Marina Permit was issued. As noted in the Marina Permit, it was envisioned that upon the commencement of marina construction, reclaimed water would be available in sufficient quantities to HASEKO for its non-potable needs. As of this date, HASEKO has applied for and received approval for only a limited amount of reclaimed wastewater with all of the allocation being slated for use at the park site nearest to the transmission line that terminates mauka of the HASEKO property. There is presently insufficient reclaimed water available for the remainder of HASEKO’s non-potable needs.

In addition to the lack of supply, it is observed that the transmission system for the reclaimed water does not extend throughout the HASEKO property. While development plans do call for non-potable lines to extend to the golf course, parks, and landscaping located throughout the development, the transmission system needed to deliver the water to the points of use does not exist.

Further, as the EP 27 water is presently being used for dust control, it is noted that areas under construction where dust control is needed are adjacent to residential communities. It is contemplated that residents in these adjacent areas will oppose use of reclaimed water in aerosol form especially where such water could reach their property either through overspray or runoff.
Finally it is noted that when the condition was originally imposed on Haseko, it was unknown what the source, quality, and quantity of, and transmission system for, the reclaimed water would be. Now it is known that the reclaimed water system is a single source plant capable of producing only limited quantities of R-1 quality water. In the event that there is a disruption in service (plant maintenance, low supply of seed wastewater, etc.), users of reclaimed water will need a supply of back up water. It is noted that this situation differs significantly from the BWS potable supply as there is no unified multiple source delivery system in place. It is also believed that the other reclaimed water users in the caprock have been allowed to retain their caprock allocations for the purposes of back up supply. HASEKO simply requests that this same accommodation given to other reclaimed water users be extended to it when reclaimed water becomes available.

Third, and in the unlikely event that the Commission finds that there has not been a change in circumstances justifying the modification, the proposed modification operates to make more efficient use of the resource. As noted above, reclaimed water is neither available in sufficient quantities nor is there a transmission system in place capable of delivering the reclaimed water to the planned points of use. In the absence of either reclaimed water or non-potable caprock water from EP 27 (or the proposed battery of wells described in Part 1, above), HASEKO will have no option other than to use potable water from the BWS system to satisfy its non-potable water needs.

Thank you for your attention to this matter. Should you have any questions or concerns regarding the foregoing, please contact me at (808) 536-3711 or our attorneys Angela Fong and Randall K. Ishikawa at (808) 528-4200.

Very truly yours,

Nelson W. G. Lee
Executive Vice-President

enclosures
March 12, 2003

Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813-2938

Dear Mr. Lee:

This is in response to your February 20, 2003 letter, requesting a variance from the 1,000 mg/l chloride limit for Well No. 1902-01. Our review of the reported chlorides from the well shows that the chlorides have fluctuated about the 1,000 mg/l limit for the last two years.

The Commission’s July 18, 2001 action to extend interim caprock water use permits delegated the authority to the Chairperson to approve variances from the chloride limit, with consideration to the well’s proximity to the ocean and to other wells, its history of chloride and pumpage, the availability of alternative sources of water and possibility for conversion.

Well No. 1902-01 is near the ocean, and there are no other wells downgradient. Haseko (Ewa), Inc. (Haseko) owns the land from the well site to the shoreline. Since the cessation of sugarcane agriculture on the Ewa plain, the chloride concentration of the well water has gradually increased, as was expected with the loss of imported basal irrigation water. We understand that Haseko is currently in negotiations with the Board of Water Supply, the purveyor of reclaimed water from the Honouliuli Wastewater Reclamation Plant, and will convert to reclaimed water when it becomes available, replacing the use of the well for irrigation and dust control.

For the above reasons, the variance request is approved. The variance shall expire six (6) months after the first date of reclaimed water service delivery.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

DEAN A. NAKANO
Acting Deputy Director

LN:ss
OCEAN POINTE
(AT CWRM ON FEBRUARY 28, 2003)

I. STATUS AND UPDATE OF PROJECT (See Attached Old & Current Master Plan)
   A. Residential / Commercial  
   B. Marina

II. WATER USE PERMITS
   A. EP-27
      (1) Chloride Variance (See Attached February 20, 2003 Letter)
      (2) WUP 347 (1.5 mgd for Urban)
      (3) WUP 192 (1.8 mgd for Agricultural)
   B. Marina Water Use Permit
      (1) Preconstruction Work with COE (See Attached Condition e)
      (2) Waiver of Conditions b and c (See Attached)
         (a) Reclaimed water is not sufficiently available
         (b) Prefers not to use reclaimed water near residences
         (c) Potable water should not be used for dust control
         (d) Back up supply is needed

III. DISCUSSION
These materials are based on the current development plans for Ocean Points. They are conceptual in nature and there are no guarantees that all or any of the components will be developed or that the components will be developed as depicted here.

09/24/02
February 20, 2003

Mr. Dean Nakano, Acting Deputy Director
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347, Well No. 1902-01
Variance from the 1000 mg/l Chloride Limit

Dear Mr. Nakano:

The Commission on Water Resource Management’s July 18, 2001 submittal indicated that operators of wells that have exceeded the 1,000 mg/l chloride limit should seek a variance from the Commission. In an exhibit to that staff submittal, Mr. Glenn Bauer noted that Haseko’s EP-27 well has had chlorides ranging from 800-900 mg/l and had stabilized at approximately 900 mg/l. See page 2-3 of Exhibit 7.

However, a recent review of readings from the EP-27 well indicates that the chlorides from the well have exceeded the 1,000 mg/l chloride limit. We, therefore, are seeking a variance from the 1000 mg/l chloride limit. Certain operational steps are being implemented to reduce the chloride levels below the 1,000 mg/l chloride limit during your consideration and hoped for approval of this variance request.

We also hope that in the next couple of weeks we will be able to schedule a briefing with you and your staff to update you and your staff on the caprock modeling and current activities and on our updated plans for caprock water and reclaimed water for the Ocean Pointe (formally known as the Ewa Marina) project. We will contact you to set up an appointment. Thank you for your kind consideration of this request, it is greatly appreciated. If you have any questions or need further information about our request, please do not hesitate to contact me at 536-3771, ext. 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President
COMMISSION ON WATER RESOURCE MANAGEMENT
STATE OF HAWAII

In the Matter of the Water Use Permit Application for the Ewa Marina Contested Case Hearing

Case No. CCH-OA96-1

FINDINGS OF FACT
CONCLUSIONS OF LAW, AND
DECISION AND ORDER
V. DECISION AND ORDER

The Commission approves the issuance of a water use permit to Haseko (Ewa), Inc. for the reasonable and beneficial "use" of Puuloa Aquifer System ground water for the proposed excavation of the Ewa Marina, subject to the standard water use permit conditions listed in Attachment A and the following special conditions:

a. Standard Conditions 9, 10, 11, 12, 16, 17, and 18 are waived.

b. Not later than the start of the construction phase (as described in the Department of the Army Corps of Engineers Permit PODCO 2117) of the marina, the applicant's water use permits, WUP Nos. 192 and 347, for a total allocation of 3.3 mgd, shall be canceled, with the written consent of the permittee, in accordance with Haw. Rev. Stat. § 174C-58.

c. Upon cancellation of WUP Nos. 192 and 347, pursuant to b., above, the applicant shall use reclaimed water for its non-potable needs.

d. This permit shall be subject to the Commission's periodic review of the progress of the construction of the marina and the applicant's compliance with the conditions of this permit. The Commission may initiate action to revoke the permit if construction of the marina is not completed by December 31, 2003, which coincides with the expiration date of the U.S. Army Corps of Engineers permit.

e. The applicant shall submit to the Commission a copy of the complete preconstruction report, required by the Corps, describing the results of the pre-construction activities, the adjustments made to the model, and the predicted behavior of the caprock aquifer when the marina is excavated and opened.

f. During the construction of the marina, the applicant shall submit to the Commission copies of monitoring results and any revised predictions, required by the Corps.

g. To protect the traditional and customary rights exercised in the project area during the construction of the marina, access to the shoreline fronting the project area must be permitted for the reasonable exercise of traditional and customary practices of native Hawaiians to the extent feasible and safe.

h. After the completion of the project, the Applicant will provide public access to the marina waterway and ocean shoreline for the purpose of permitting the reasonable exercise of traditional and customary practices of native Hawaiians.

i. Post construction, the applicant shall submit to the Commission copies of quarterly reports, required by the Corps, analyzing the data to determine impact of the completed marina on the resource value of the Wetland Preservation Area, the habitat value of the anchialine pools, and the ground-water levels and salinity gradients on the caprock aquifer.

j. The applicant shall comply with all other applicable statutes, ordinances, and regulations of the Federal, State, and City and County of Honolulu governments.
February 20, 2003

Mr. Dean Nakano, Acting Deputy Director  
Commission on Water Resource Management  
1151 Punchbowl Street, Room 227  
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347, Well No. 1902-01  
Variance from the 1000 mg/l Chloride Limit

Dear Mr. Nakano:

The Commission on Water Resource Management’s July 18, 2001 submittal indicated that operators of wells that have exceeded the 1,000 mg/l chloride limit should seek a variance from the Commission. In an exhibit to that staff submittal, Mr. Glenn Bauer noted that Haseko’s EP-27 well has had chlorides ranging from 800-900 mg/l and had stabilized at approximately 900 mg/l. See page 2-3 of Exhibit 7.

However, a recent review of readings from the EP-27 well indicates that the chlorides from the well have exceeded the 1,000 mg/l chloride limit. We, therefore, are seeking a variance from the 1000 mg/l chloride limit. Certain operational steps are being implemented to reduce the chloride levels below the 1,000 mg/l chloride limit during your consideration and hoped for approval of this variance request.

We also hope that in the next couple of weeks we will be able to schedule a briefing with you and your staff to update you and your staff on the caprock modeling and current activities and on our updated plans for caprock water and reclaimed water for the Ocean Pointe (formally known as the Ewa Marina) project. We will contact you to set up an appointment. Thank you for your kind consideration of this request, it is greatly appreciated. If you have any questions or need further information about our request, please do not hesitate to contact me at 536-3771, ext. 225.

Sincerely,

Nelson W.G. Lee  
Executive Vice President
Mr. Nelson W.G. Lee  
Executive Vice President  
Haseko (Ewa), Inc. 
820 Mililani Street, Ste. 820 
Honolulu, HI 96813-2938

Dear Mr. Lee:

This is in response to your June 26, 2002 letter, requesting a variance from the weekly sampling and reporting schedule to a monthly schedule for Well No. 1902-01. Based on our analysis of the data collected at Well No. 1902-01, which indicates that ground-water conditions at the site have stabilized, your request is hereby approved.

If you have any questions please contact Lenore Nakama of the Commission staff at 587-0218.

Sincerely,

LINNEL T. NISHIOKA  
Deputy Director

LN:ss
June 26, 2002

Ms. Linnel T. Nishioka, Deputy Director
Commission of Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347 Well No. 1902-01
Chloride Sampling Protocol

Dear Ms. Nishioka:

The Commission on Water Resource Management Notice Action, dated August 6, 2001 required interim permittees to adhere to a weekly chloride sampling protocol. Since August of last year, Haseko has provided the Commission with weekly chloride sampling reports as requested.

Recent discussions and review between our consultant, Mr. Michael Knight of URS and your staff, seem to indicate from the data collected that it appears the caprock has stabilized sufficiently to warrant sampling monthly rather than weekly.

We, therefore, would like to make a request to relax our sampling frequency from weekly to monthly.

Sincerely,

Nelson W.G. Lee
Executive Vice President

NWGL: dsl
Cc: Michael Knight, URS
Mr. Nelson Lee
Haseko (Ewa), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

Notice of Action
Extension of Interim Water Use Permit
Puuloa Ground Water Management Area, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on July 18, 2001, to extend your interim water use permit (WUP No. 347, Well No. 1902-01), subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace former special conditions):

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE.
CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES. 

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier. (No extra charge)

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on the return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article RETURN RECEIPT REQUESTED adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse RESTRICTED DELIVERY on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in Item 1 of Form 3811.

U.S. G.P.O. 1989-234-555
"If you made inquiry, present it."

---
SENDER:

Complete items 1 and/or 2 for additional services.
Complete items 3, 4a, and 4b.
Print your name and address on the reverse of this form so that we can return this card to you.
Attach this form to the front of the mailpiece, or on the back if space does not permit.
Write "Return Receipt Requested" on the mailpiece below the article number.
The Return Receipt will show to whom the article was delivered and the date delivered.

3. Article Addressed to: Mr. Nelson Lee, Haseko (Ewa), Inc.
   820 Mililani St., Ste. 810
   Honolulu, HI 96813
   -ewa_13e.act

4a. Article Number
P 354 448 612

4b. Service Type
☐ Registered
X Certified
☐ Express Mail
☐ Insured
☐ Return Receipt for Merchandise
☐ COD

7. Date of Delivery
8/17/01

8. Addressee's Address (Only if requested and fee is paid)

5. Received By: (Print Name)
Deborah Sen Lundin

6. Signature: (Addressee or Agent)
X Deborah Sen Lundin

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery
Consult postmaster for fee.

Thank you for using Return Receipt Service.
• Print your name, address, and ZIP Code in this box •

COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. Box 621
Honolulu, Hawaii 96809
f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment C.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

The Commission will suspend the four-year period of nonuse for permittees that convert to reclaimed water service, beginning from the first date of reclaimed water service delivery under an agreement with the Board of Water Supply. The suspension will be for the duration of the interim permit or until the agreement with Board of Water Supply for reclaimed water service delivery ends, whichever comes first.

The Commission decided that interim permittees shall be notified by letter of the Commission action and extended permit duration and that re-issuance of new interim water use permits for these extended permits is unnecessary.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

LN:ky
Attachments
TESTIMONY BY APPLICANT:

Mrs. Harms stated that according to the Hawaii County Department of Water Supply (DWS), she would need 2 hookups per unit and a total of 16 units that require water. She stated that the units are located approximately 100 feet from where the County system terminates at the entrance to Vacationland. Mrs. Harms stated that DWS informed her that only 50 hookups were allowable to the Association meter, and that the association meter was filled to the maximum. At the present, Mrs. Harms stated that she has a temporary hookup of 10 lines with DWS.

MOTION: (RICHARDS/NOBRIGA)
To approve the submittal as amended in Alternate Recommendation #1.
UNANIMOUSLY APPROVED AS AMENDED.

4. Extension Of Interim Water Use Permits, Puuloa and Kapolei Ground Water Management Areas, Oahu

PRESENTATION OF SUBMITTAL: Ms. Lenore Nakama

AMENDED RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 4, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):
   a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.
   b. 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.
   c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted.
   d. The duration of the interim permit shall be
      a) to July 1, 2006, or
      b) until treated wastewater is available and acceptable for use, or
      c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.
e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirements is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Exhibit 9.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. Grant variances from the 1,000 mg/l chloride limit to Hawaii Prince Golf Club (Well Nos. 1900-02, 1900-17 to 20, 1901-03), Pacific Tsunami Warning Center (Well No. 1900-23), and The Estate of James Campbell (Well Nos. 1905-08,10). The variances shall expire six (6) months after the first date of reclaimed water service delivery.

3. Delegate the authority to the Chairperson to approve future variance requests.

4. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

5. Suspend the four-year period of nonuse for the Hawaii Prince Golf Club, Coral Creek Golf Course and Barbers Point Kapolei Golf Course, beginning from the first date of reclaimed water service delivery under their agreement with the Board of Water Supply. The suspension will be for the duration of these interim permits or until the agreement with Honolulu Board of Water Supply for reclaimed water service delivery ends whichever comes first. This condition shall apply to any other interim permittee that converts to reclaimed water service.

TESTIMONY BY APPLICANT:

Ms. Terry Kondo of Watanabe Ing & Kawashima representing Hawaii Prince Golf Course expressed concerns on staff recommendations #2, and 1g.

Mr. Tom Nance stated that when the golf course switches over to the effluent, the wells will not be run weekly. They will be run on occasion to keep them viable for use when effluent is not available. They will not be used on a weekly basis so providing a weekly data will become difficult. In the case of Hawaii Prince, samples that were obtained at one-half to
one-hour intervals were misleading. An internal sample protocol was developed so that all wells have to be run continuously for 24 hours before samples can be obtained. For that reason, Mr. Nance asked if condition 1 g could be modified that reporting be done on a monthly basis. He stated that trends are better noticed on a monthly data report.

Ms. Nakama stated that an administrative waiver was granted for Kapolei Golf Course because the long-term data was so stable. No significant movements were indicated in the water levels. Hawaii Prince and Coral Creek could request an administrative waiver from the weekly chloride-sampling requirement from the Chairperson.

Mr. Glenn Bauer stated that records showed that there were no major differences for Hawaii Prince’s chlorides in the weekly and monthly data. He felt that monthly data reporting would be sufficient.

MOTION: (NOBRIGA/GIRALD)
To approve the submittal as amended.
UNANIMOUSLY APPROVED AS AMENDED.

5. County of Hawaii, Department of Public Works, Application for a Stream Channel Alteration Permit (SCAP-HA-325), Install Three Concrete Culverts and Replace Bridge Structures, Waiakea Stream, Hilo, Hawaii (TMK 2-4-01:007, 010, 122)

PRESENTATION OF SUBMITTAL: Mr. Edwin Sakoda

RECOMMENDATION:

That the Commission:

Approve a stream channel alteration permit for the construction of culverts at Puainako Street and bridge modifications at Komohana Street, Waiakea Stream, Hilo, Hawaii (TMK: 2-4-01:007, 010, 122). The permit shall be valid for two years subject to the standard stream channel alteration permit conditions in Exhibit 5.

MOTION: (NOBRIGA/RICHARDS)
To approve the submittal.
UNANIMOUSLY APPROVED.


PRESENTATION OF SUBMITTAL: Mr. Ryan Imata
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

July 18, 2001
Honolulu, Oahu

EXTENSION OF INTERIM WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

PERMITTEE(S): See Exhibit 1  LANDOWNER(S): See Exhibit 1

LOCATION MAP: See Exhibit 2

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Waiawa, Ewa-Kunia, and Makaiwa Aquifer Systems. Due to uncertainties regarding the caprock's sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock. Then-current uses were operating under permanent water use permits.

Designation of the Ewa Caprock as a water management area was precipitated by the City and County of Honolulu's (City) urbanization plans for the Ewa area and a City ordinance requiring dual water systems for all new developments. Potable water was to be provided through the municipal system. Possible sources of non-potable water were brackish ground water from the Ewa Caprock aquifer and reclaimed sewage effluent. The estimated non-potable demand of 25 mgd after full buildout (Kumagai, 1996) far exceeded the estimated natural recharge to the caprock aquifer of less than 16 mgd (Bauer, 1996).

Because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture, in 1993, the Commission began awarding temporary one-year permits for new uses of caprock ground water. In analyzing water availability, the Commission used guidelines for estimating sustainable yields for the Puuloa, Kapolei, and Malakole areas (Yuen & Associates, Inc., 1989).
On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.

At the July 5, 1995 Commission meeting in Honokaa, Hawaii, the Commission extended the permits, which were now called interim permits, until such time that a formal decision could be made on Oahu.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a sustainable yield for the caprock.

Also on March 13, 1996, the Commission adopted the following policy statement, clearing the way for application of reclaimed water on lands overlying the Ewa Caprock Aquifer:

"It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses."

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for individual irrigation wells at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The rationale behind the chloride cap was to limit pumpage in those wells approaching the limit, to prevent a build-up of sodium in the clay soils, and to protect other users adjacent to those pumping higher chloride water. The Commission also adopted the Puuloa, Kapolei, and Malakole Aquifer Systems in the Ewa Caprock Sector and approved pending applications for new and continued irrigation uses. The specified duration of the interim water use permits was to October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincided with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provided a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999.

On October 22, 1998, the Commission extended the interim water use permits, subject to the Standard Conditions of a water use permit and new special conditions (Exhibit 3). The interim permits specified a duration to: 1) July, 2001, or 2) until treated wastewater is available and acceptable for use, or 3) until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The list of interim permits due to expire in July, 2001 is shown in Exhibit 4. The graphs of reported pumpage and chlorides are shown in Exhibit 5.

On July 20, 2000, an agreement was reached between the Honolulu Board of Water Supply (BWS), the City, and U.S. Filter for BWS' purchase of the Honouliuli Wastewater Reclamation Facility. The agreement includes BWS becoming the purveyor of reuse water, with the task of securing customers for 10 mgd by July 1, 2001. U.S. Filter will operate the facility for BWS under a 20-year service agreement. The City will provide secondary effluent to the facility and will take back 4 mgd of the R-1 water for City reuse applications. Some of the reclaimed water will supply industrial uses at Campbell
Industrial Park. (A briefing by the BWS on their reclamation program is scheduled as a separate item on this agenda.)

ANALYSIS/ISSUES:

A significant change in the water supply picture has been the acquisition of the Honouliuli Wastewater Reclamation Facility by the BWS and BWS' new role as purveyor of reclaimed water. Since their recent acquisition of the plant, BWS has been actively promoting the use of reclaimed water for non-potable needs over the Ewa Caprock Aquifer. Negotiations have been finalized for some City projects (West Loch and Ewa Villages developments) and for some of the golf courses that have interim caprock permits. Currently, we understand that a memorandum of understanding for golf course irrigation has been negotiated with Coral Creek, Hawaii Prince, and Barber's Point. The agreement provides for a set rate to July 1, 2006. The staff feels that this would be a good time to revisit these permits and the progress of the reclaimed water effort.

Even with reclaimed water as the primary irrigation source, ground water would still be used for the golf course water features, to maintain the pumps, and to mitigate potential reclaimed water quality or odor issues that may arise. The long-term goal of the golf courses is to blend reclaimed water with caprock ground water. Until reclaimed water is actually delivered and has been shown to be a reliable and acceptable source, the golf courses have requested that their interim permits be renewed for the same quantities. They have also requested that the Commission suspend the four-year nonuse clause for permit revocation. Section 174C-58 Haw. Rev. Stat. provides for the Commission and permittee to enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year revocation period. The staff feels that the promotion of alternative non-potable sources to meet non-potable needs is a satisfactory reason to suspend the four-year revocation period, given the uncertainties associated with this new source conversion, provided that other users and the resource are adequately protected.

PROTECTION OF THE RESOURCE

The current sustainable yield for the caprock aquifers is defined by a sustainable capacity at all irrigation wells in the Puuloa and Kapolei Aquifer Systems which prohibits individual pumpages that cause the specific well to exceed a 1,000 mg/l chloride cap. Enforcement of the chloride cap provides adequate protection for the aquifer. Management of the resource via a chloride cap was adopted on May 14, 1997 as an interim management plan. The staff feels that this management approach has been effective and is not recommending that the strategy be changed at this time.

MAXIMIZING THE UTILITY OF THE RESOURCE

Maximizing the utility of the caprock is intimately tied to wastewater reuse. As wastewater reuse comes on line, the sustainable yield of the caprock will increase, meaning more pumpage may be sustained under the 1,000 mg/l chloride limit. However, the distribution of reclaimed wastewater is uncertain, which will affect chloride distributions and total nonpotable supply. Of the projected total 13 mgd of R-1 water from the Honouliuli Wastewater Reclamation Plant, 1 mgd is needed for in-plant process water, and 2 mgd is planned for industrial uses at James Campbell Industrial Park. This leaves about 10 mgd available for irrigation needs in the region.
Given the City's current plans, the staff estimates that the potential future supply of nonpotable water for irrigation uses on lands overlying the Puuloa Aquifer System, where the competition for nonpotable irrigation water is most severe, could be up to about 15 mgd: 10 mgd reclaimed water plus approximately 5 mgd natural sustainable yield (Bauer, 1996). This assumes that 100% of the treated effluent will be available for reuse in Puuloa, which is improbable. But the availability of reclaimed water will present permittees with a possible alternative should their wells exceed the 1,000 mg/l chloride limit. Likewise, should the 1,000 mg/l limit not be exceeded, the permittees may continue to pump and may even work out a management plan which would allow for alternating between caprock and wastewater reuse to maximize the economical use of both resources. But ultimately, based on current reclaimed water plans, total allocations for the Puuloa Aquifer System should not exceed 15 mgd. Current allocations in the Puuloa Aquifer System total 14.817.

WELL INTERFERENCE

Since there are no ground-water models (solute-transport) that can predict chloride response to pumpage at individual well sites, close monitoring of the resource and enforcement of the chloride cap is critical to protect the resource in this interim period while the City finalizes plans to fully implement its reclamation program. Exhibit 6 shows that the caprock aquifer was significantly influenced by sugarcane irrigation practices and is still in a state of flux. Currently, all interim permittees are required to submit weekly reports of pumpage, water levels, chlorides, and water temperature (unless a variance from this requirement has been approved). All permittees have been put on notice that the reporting requirement will be strictly enforced.

Although enforcement of the 1,000 mg/l chloride cap at each well site will provide adequate protection for the resource, it may not be sufficient to preclude well interference. However, not only will wastewater reuse further protect the resource, it will also help to reduce the effects of well interference that may cause individual wells to exceed the 1,000 mg/l chloride cap. Special Condition f. has been added to the existing interim permits recommended for extension and will be added to all future caprock permits to put the permittees on notice of the risk of reliance on caprock ground water and its uncertain sustainable yield.

The staff has been sending all interim permittees in Puuloa the monthly bulletin which shows all pending permit applications, which should provide the permittees sufficient notice of new proposed uses of Puuloa Caprock ground water. Permittees should review new applications and water data from other nearby wells to proactively protect their sources. Permittees are encouraged to submit comments or objections in accordance with Administrative Rule 13-171-18 (Objection to Proposed Water Use Permit). Further, the staff has been analyzing the weekly water data reports, and we are continuing to work on triggers to implement a water shortage plan. These triggers may be related to some modification of Exhibit 6. Should valid claims of well interference be raised, either by permittees or as a result of the staff's analysis, the Commission may consider implementing a water shortage plan to address the well interference issue.

At this time, only an informal and incomplete water shortage plan exists. On May 14, 1997, the Commission approved a permit classification system for a water shortage plan for the Puuloa Aquifer System as provided under Administrative Rule 13-171-42:

"(a) The commission shall formulate a plan for implementation during periods of water shortage. As a part of the plan, the commission shall adopt a reasonable system of permit
classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.

(b) In accordance with this chapter, the commission may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

(c) All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission.

For the Puuloa Aquifer System, the Commission established the highest priority of nonpotable use as agriculture because the State's policy is to promote agriculture, and also because agricultural correlative uses are assured through the 1978 Constitutional Amendment. The second priority in water use is golf course irrigation because of the economic impacts that may result from inadequate water supply. The lowest priority in water use is landscape irrigation and dust control.

Water shortage plans were requested from all of the users in Puuloa, with the exception of United States Fish and Wildlife Service. The requirement to submit individual water shortage plans is highlighted in the cover letter that transmits the permit and is also stated in Standard Condition 17. The staff will continue to work with users to develop their individual plans. As part of the May 14, 1997 action, the Commission has also delegated the authority to the Chairperson to approve individual water shortage plans and the regional water shortage plan for the Puuloa Aquifer System.

CHLORIDE CONCENTRATION TRENDS

The Commission staff established a caprock well monitoring network in 1993. Each month, the staff collects water level and chloride data at selected caprock wells. The staff's analysis of the chloride trends at the individual wells and regionally is attached (Exhibit 7). The data show that the chloride concentration in the caprock water varies significantly from place-to-place and from well to well. Some of the reasons for these disparities include the subsurface geology, distance from the coast, well construction, pump capacity, and pumping schedule. Many of the sources have not exceeded the 1,000 mg/l chloride limit. The baseline data suggest that those wells that have exceeded the limit will continue to pump water exceeding 1,000 mg/l of chloride unless there is an influx of less saline water or a complete cessation of pumpage. The staff recommends that those operators with wells and/or batteries having >1,000 mg/l of chloride should apply for a variance from the established limit. Once reclaimed water is available, these wells should only be used for back-up purposes or for blending with reclaimed water to a quality of 1,000 mg/l of chloride or less.

Currently, variances from the chloride cap have been granted to Hawaii Prince Golf Club (Well Nos. 1900-02, 1901-17 to 20, 1901-03) and Pacific Tsunami Warning Center (Well No. 1900-23). In a letter dated August 7, 2000, The Estate of James Campbell (Campbell) requested that the Commission waive the salinity limit for its two nonpotable wells (Well Nos. 1905-08, 10). The Commission denied the request on November 16, 2000 because Campbell was in the process of transferring the nonpotable system to the BWS and an alternative source (reclaimed water) would soon be in place. Negotiations are still ongoing for the transfer of the nonpotable water system. Chloride levels at the Campbell wells are now about 1,200 ppm. The staff is recommending that the Commission approve temporary variances from the chloride limit pending the implementation of the reclaimed water system for those users that have requested variances. Other users whose wells are close to the chloride cap may also request variances. Unless a variance is requested and approved, wells exceeding the chloride limit.
must shut down. The staff’s recommendation on a variance request would be made with consideration to the well’s proximity to the ocean and to other wells, its history of chloride and pumpage, the availability of alternative sources of water and possibility for conversion. The staff is recommending that future variance requests be delegated to the Chairperson for disposition.

RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 4, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):
   a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.
   b. 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.
   c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted.
   d. The duration of the interim permit shall be
      a) to July 1, 2006, or
      b) until treated wastewater is available and acceptable for use, or
      c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.
   e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
   f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.
   g. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data.
   h. Require adherence to the Conservation Conditions shown in Exhibit 9.
   i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. Grant variances from the 1,000 mg/l chloride limit to Hawaii Prince Golf Club (Well Nos. 1900-02, 1900-17 to 20, 1901-03), Pacific Tsunami Warning Center (Well No. 1900-23), and
The Estate of James Campbell (Well Nos. 1905-08,10). The variances shall expire six (6) months after the first date of reclaimed water service delivery.

3. Delegate the authority to the Chairperson to approve future variance requests.

4. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

5. Suspend the four-year period of nonuse for the Hawaii Prince Golf Club, Coral Creek Golf Course and Barber Point Golf Course, beginning from the first date of reclaimed water service delivery under their agreement with the Board of Water Supply. The suspension will be for the duration of these interim permits or until the agreement with Honolulu Board of Water Supply for reclaimed water service delivery ends whichever comes first. This condition shall apply to any other interim permittee that converts to reclaimed water service.

Respectfully submitted,

LINNEL T. NISHIOKA
Deputy Director

Attachment(s): A (Standard Conditions for a Water Use Permit)

Exhibit(s): 1 (Interim Permittees and Landowners at the Source Location)
2 (Well Location Map)
3 (Standard and Special Conditions, approved October 28, 1998)
4 (Interim Permitted Uses, Puuloa and Kapolei Aquifer Systems)
5 (Graphs of Reported Pumpage and Chlorides)
6 (Chloride and Pumpage of Ewa Plantation Shallow Wells)
7 (Chloride Concentration Trends)
8 (Chloride Sampling Protocol)
9 (Conservation Conditions)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   
   a. Can be accommodated with the available water source;
   
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   
   c. Will not interfere with any existing legal use of water;
   
   d. Is consistent with the public interest;
   
   e. Is consistent with State and County general plans and land use designations;
   
   f. Is consistent with County land use plans and policies; and
   
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 20, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:

ATTACHMENT A
a. protect the water sources (quantity or quality);
b. meet other legal obligations including other correlative rights;
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the applicable aquifer system's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the applicable aquifer system, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:

a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage

ATTACHMENT A
pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the applicable Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

ATTACHMENT A
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<th>ADDRESS</th>
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EXHIBIT 2
EWA CAPROCK INTERIM PERMITS
Special Conditions
(approved on October 22, 1998)

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol (Attachment C) and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions (Attachment D).

EXHIBIT 3
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;

EXHIBIT 3
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission’s periodic review of the Puuloa or Kapolei Aquifer System’s sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa or Kapolei Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee’s water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance
of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
Aquifer System Water Use Permit Index

ISLAND OF OAHU

<table>
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<tr>
<th>WUP No</th>
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<th>Applicant</th>
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<th>WUP (mgd)</th>
<th>12-MAY (mgd)</th>
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Summary for 'SYSTEM' = KAPOLEI (8 detail records)

| Totalling | 2.033 | 1.552 |

WMA Aquifer System: PUULOA

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Summary for 'SYSTEM' = PUULOA (25 detail records)

| Totalling | 4.867 | 3.468 |
Hawaii Prince G.C. Combined Pumpage
(Well Nos. 1900-02,17 to 20;1901-03)

EXHIBIT 5

--- 12-MAV --- WUP
--- combined monthly withdrawal ---
Gentry Pacific, Ltd. Pumpage
Sunrise Apt. Well (Well No. 2001-04)

EXHIBIT 5

date (latest data 11/00)

0.080
0.065
0.050
0.035
0.020
0.015
0.005

pumpage (mgd)

--- monthly values  --- requested amount  --- 12-MAV
Palm Villa II Homeowners Association
Palm Villa II Well (Well No. 2001-08)

EXHIBIT 5

Pumpage (mgd)

Date (latest data 04/01)

Monthly values
WUP
12-MAV
Gentry Pacific, Ltd. Pumpage
Coronado Well (Well No. 2001-09)

Date (latest data 12/00)

- Monthly values
- WUP
- 12-MAV
Coral Creek Golf Course Withdrawals
Well 1 (2002-15)

pumpage (mgd)  12-MAV  max chloride level
Coral Creek Golf Course Withdrawals
Well 2 (2002-17)

EXHIBIT 5

pumpage (mgd)      12-MAV      max chloride level

date (latest data 4/01)
Kapolei Golf Course
Well Nos. 2003-01,02,05 Combined

 monthly pumpage  12-MAV  2003-01 CI

 2003-02 CI  2003-05 CI  WUP

date (latest data 4/01)
State HCDCH Kapolei Wells
Well Nos. 2003-04,07 Combined

monthly pumpage
12-MAV
2003-04 CI
2003-07 CI
WUP
U.S. Fish and Wildlife Service
Honouliuli Unit (2101-14)

EXHIBIT 5

---

月中間取水 12-MAV WUP
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Chloride Concentration (mg/l)

Start
Basal (high CI) irrigation

Initial caprock CI (average year)
Basal (low CI) irrigation

Stop

Average Yearly pumpage (mgd)

Average monthly pumpage (mgd)

Year
○ EP-24 • Gentry Palm Villa 1 • Kapolei Golf B

Ref: CWRM, BWS files, & R-79
June 5, 2001

MEMORANDUM FOR THE RECORD

FROM: Glenn Bauer

SUBJECT: Chloride Concentration Trends in the Ewa Caprock Aquifer

Background

Commission staff has been collecting water samples from various wells and well batteries within the caprock aquifer from Puuloa to Malakole since 1993. Our baseline sampling effort began before the demise of Oahu Sugar Company in 1994, and was augmented by the required reporting of weekly chlorides by caprock water users.

The end of sugar cultivation on the Ewa Plain brought with it an end to the importation of low to moderate salinity basal ground water for irrigation. Prior to 1994, when drip irrigation practices were employed, the estimated return irrigation component from basal ground water was 16 mgd (Mink, 1989) with 8 mgd going to the Puuloa area and 8 mgd going to the Kapolei-Malakole area. At the same time, the plantation pumped an average of 14 mgd (Bauer, 1996) from their shallow wells. After 1994, ground-water input to the caprock included natural inflow from the basal aquifer into the caprock and direct recharge from rainfall and storm runoff. Various authors report a range of natural inflow into the caprock from the basalt. Most of these numbers were derived by numerical models or by salinity mixing model equations and are small when considered on a flux/mile basis. Estimates range from <1 mgd to 3± mgd/mile (Bauer, 1996). Long-term annual average rainfall input over the Ewa Plain has been estimated to be about 5± mgd (summary of results in Bauer, 1996). In addition, long-term annual average for storm runoff recharge over the caprock from Kaloi and Makakilo Gulches was estimated to be between 1 and 2 mgd (Mink, 1989).

In 1997 the Commission adopted a 1,000 mg/l chloride cap for individual wells developing caprock water. The reasoning behind this cap was to limit pumpage in those wells approaching the limit and to prevent a sodium build-up in the clay soils which would adversely affect the growth of certain grasses for golf courses, and to protect other users adjacent to those using higher chloride water.

Chloride Trends Since 1994 East of Fort Weaver Road

The chloride concentration in the caprock water varies significantly from place-to-place, and from well to well. Some of the reasons for these disparities include the subsurface geology, distance from the coast, well construction, pump capacity, and pumping schedule.

Generally, those pumping batteries that have long-term records, are east and south of Fort Weaver Road and Iroquois Point Road respectively, show a rising trend in

EXHIBIT 7
chlorides over time. This trend is partly due to irrigation practices and partly due to the lack of recharge of fresher water into the aquifer and proximity to the shoreline.

**Ewa Beach International Golf Club**

For Ewa Beach International, chlorides have risen from a low of 1,000 mg/l in late 1996 (due to recharge from a large storm on Election night) to 1,800± mg/l at the present time. CWRM staff samples Well No. 1900-21 at a 1-acre pond (Pond E). Evaporation from the pond undoubtedly affects chloride concentration. Pumpage from this source is less than 1 mgd.

**Hawaii Prince Golf Club**

Hawaii Prince Golf Club pumps water from 6 wells. Total average pumpage is slightly greater than 1 mgd. CWRM staff typically samples the wells after they have been running for several hours. Hawaii Prince Irrigation Wells 1-5 (1901-03, 1900-17-20) and EP-22 (1900-02). Chloride concentration in Hawaii Prince Wells 1 and 2 have remained relatively stable over the period of record. Well 1 remains about 1,000 mg/l, while Well 2 changed from about 1,000 mg/l in 1994 to 1,200± mg/l at the present time. Wells east of Well 2 are much more saline. The magnitude of the increase in salinity has ranged from 300 mg/l (Well 3) to 500 mg/l (Well 5 and EP-22) over the period of record.

**U. S. Fish and Wildlife Well 2101-14**

This well is north of Iroquois Point Road. Average pumpage is less than 0.5 mgd. The chloride concentration has shown an improvement since 1996 and remains stable at 1,000± mg/l.

**Chloride Trends Since 1994 West of Fort Weaver Road**

**Gentry Wells**

CWRM staff has monitored 5 of the 9 wells developed by Gentry. These wells are low capacity and are used exclusively for irrigation of the common areas within each development. Total Gentry pumpage is less than 0.5 mgd. Since 1997, chloride concentration has remained consistently between 400 and 800 mg/l, well below the 1,000 mg/l cap. The wells monitored are Palm Villa I (2001-06), Palm Villa II (2001-08), Palm Court III (2002-12, monitoring discontinued in 1997), Sunrise (2001-04), and Sun Terra (2001-05). Pump capacities for these wells range from 100-110 gpm.

**Haseko EP-27 Well (1902-01)**

CWRM staff began monitoring this source in 1994 just after the closing of Oahu Sugar. Static (non-pumping) samples were collected from the open pit near the pump house. Chlorides ranged from 800 to 900 mg/l. In 1997, Haseko began to pump this source at rates approaching 2 mgd. The average rate is about 1 mgd. Chloride
concentration remains stable at 900± mg/l. The stable nature could be that the pumping source skims the top water from the pit.

Coral Creek Golf Course

In 1998, several large pits were excavated and noted north and south of Geiger Road just east of the Honouliuli STP. These pits and drilled wells became part of the Coral Creek battery. Water from the pits is used for water features and for a back-up source (Lake Well 1, 2002-19). Coral Creek Golf Club irrigates using water from Coral Creek Well 1 (2002-15), Coral Creek Well 2 (2002-17), and Coral Creek Well 4 (2001-13). Pumpage is slightly greater than 1 mgd; however, the chloride concentration from the sources ranges between 1,000 mg/l to almost 4,000 mg/l at Well 2. According to golf course personnel, Well 4 pumps the least amount and is the most stable in terms of chloride concentration. It was also noted by golf course personnel that the longer Well 1 and 2 pumps, the saltier the water becomes. Pump capacities for these wells are high. Coral Creek 1 and 2 have 800 gpm pumps, while Coral Creek 4 has a 1,000 gpm pump.

High evaporation rate (close to 90 inches/year) in the Ewa Plain could cause the salinization of the lakes, which, in turn, could be the reason for the high chlorides localized at Well 1 and 2. However, the chloride samples taken from the Lake Well 1 show concentrations ranging from 1,000 to 1,200 mg/l. At the present time, Coral Creek’s saline water does not seem to affect the Gentry sources to the east.

Chloride Trends Since 1994 in the Kapolei Region

HFDCH Kapolei Golf Course

The Kapolei Golf Course utilizes Kapolei Irrigation Wells A, B, C, D, E, and C-1 (well nos. 2003-01-05, 07). Well C-1 is a replacement well for Well C. Chlorides have been remarkably stable, hovering between 200± mg/l to 600 mg/l, with little variation or trends. It is thought that basal ground-water inflow from the Waianae aquifer in conjunction with a thin caprock is responsible for the stability of the water chemistry in this area. Variations in pumpage are seasonal, but average about 1 mgd.

Kapolei City Wells

Campbell Estates’ Kapolei City Wells (1905-08, 10) supply irrigation water for Kapolei. Average daily pumpage is less than 0.5 mgd. Since 1995 chloride concentrations in both wells have been rising from 600 mg/l to 1,200-1,400 mg/l at the present time. Well 1905-08 (east well) water quality is slightly better than 1905-10. Duration of pumpage prior to sample collection probably influences the chloride concentration. However, it is evident that the overall trend is upwards.

Conclusions

EXHIBIT Z
Since the cessation of sugar irrigation the common chloride trend is generally a linear increase for wells that exceed the 1,000 mg/l cap. The long-term prognosis for these wells will be a continued increase in salinity. However, there are several well batteries and wells that do not fit this trend (e.g. U.S. Fish and Wildlife, Gentry, Haseko, HFDCH Kapolei), and exhibit remarkable chloride stability. The scatter of chloride data associated with Coral Creek cannot be easily explained. Bottom hole elevations are not as great as some of the Gentry Wells, yet the chlorides are much greater and the sensitivity of chloride concentration to pumpage suggest that localized upconing, in conjunction with the high pump capacities, is taking place. Moreover, the relationship of the large lakes (surface evaporation) to the wells is not clearly understood and could play a role in contributing to the pool of high chloride ground water.

As stated above, many of the sources have not exceeded the 1,000 mg/l cap. Those that have, the baseline data suggest that these wells will never pump =1,000 mg/l again unless there is an influx of less saline water (e.g. reuse, an increase of recharge from storms i.e. a more normal weather pattern) or a complete cessation of pumpage. In the meantime, those operators with wells and/or batteries >1,000 mg/l chloride should apply for a variance from the 1,000 mg/l cap. It should be implicitly stipulated that once reuse is available, then these wells will only be used as back-up sources or blended with reuse water to a quality of 1,000 mg/l or less.

References:


Ewa Beach International Golf Club
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

Month/Year

1,000 Cl Cap
Well 1900-21 (Pond E)
U. S. Fish and Wildlife Well 2101-14
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

Month/Year

1,000 Cl Cap
Gentry Wells
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year

1,000 Cl Cap ● Palm Villa I ■ Palm Villa II
▼ Palm Court ■ Sun Terra ▲ Sunrise
Haseko EP 27
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

Month/Year

1,000 Cl Cap  ● EP27 Pit  ■ EP 27 Pipe
Coral Creek Golf Course
Pumpage and Chlorides

Month/Year

Average Monthly Pumpage (mgd)

10
9
8
7
6
5
4
3
2
1
0

0
500
1000
1500
2000
2500
3000
3500
4000

Monthly Chloride (mg/l)

1,000 Cl Cap

Lake Well 1
Well 2
Well 1
Well 4
Kapolei City Wells (Campbell Estate)
Pumpage and Chlorides

1,000 Cl Cap

Well 1905-10 (West Well)

Well 1905-08 (East Well)
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection
   - Sampling Schedule

   The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
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<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

   - When to Sample

   Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

   - Sample Bottle

   Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

   - Labeling

   On the sample bottle, affix a label that contains the following information:

   Well No.
   Date
   Time Sampled
   Elapsed Time after pump on
   Sampler's Name
   Water Temperature (if available)
   Pumping Rate (prior to sampling)
2. **Determination of Chloride Concentration**

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. **Be consistent with the end-point color change.**

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** **Be consistent with the end-point color.** Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. **Reporting Results**

- **How to Report**

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

   Under "Notes" Section of the Monthly Water Use Report:

2. Method used for chloride analysis:

3. Total elapsed time before sampling:

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
FIVE WELL VOLUMES\(^1\) PLUS 60 MINUTES
MINIMUM TIME BEFORE CHLORIDE SAMPLING

<table>
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<tr>
<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
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<tr>
<td></td>
<td>&gt;1000</td>
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\(^1\) Assumes saturated well depth of 100 feet.

\(^2\) Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 9
MEMORANDUM FOR THE RECORD
November 1, 2000

FROM: Lenore Nakama
SUBJECT: Unregistered Injection Well at Ewa Marina Project

Chauncey Hew from DOH, UIC called to give a heads up that this letter was coming. In responding to a complaint of an illegal injection well, DOH conducted a field investigation and found that EP 27 appeared to be pumping continuously to a lined pond with an injection well. The lined pond provides storage for dust control water and the excess water is being reinjected back into the aquifer.

Per Glen, there is a lot of construction going on in the area, and Haseko may be keeping the pump operating to avoid someone having to run out and turn the pump on everytime a truck needs to refill (which may pose a danger because of all the heavy trucks operating in the area).

Per Roy, the well is being used for one of its permitted uses – dust control. Excess water is being pumped back into the aquifer for recharge. Haseko may have chosen to incur higher pumping costs for more efficient dust control during construction. We should monitor the chlorides to ensure that they remain below 1,000 ppm. We do not necessarily consider this a waste of water.
Mr. Nelson W.G. Lee  
Executive Vice President  
Haseko (Ewa), Inc.  
820 Mililani Street, Suite 810  
Honolulu, Hawai‘i 96813  

Dear Mr. Lee:  

SUBJECT: OPERATION OF AN UNREGISTERED INJECTION WELL  
AT HASEKO EWA MARINA PROJECT  

We have observed on your property what appears to be an unregistered injection well located in the center of a lined pond used to store water to fill water trucks. The injection well appears to function as an overflow drain to prevent the pond from overflowing as piped water continuously flows into the pond. The injection well casing is PVC and has a diameter of about 8 to 10 inches. The portion of the casing that was visible contained small drill-hole perforations. The top of the casing was open. The length (depth) of the casing could not be observed.  

Enclosed is an Underground Injection Control (UIC) permit-application form to register the injection well with a UIC permit. The operation of an injection well must be authorized through a UIC permit issued by the Department of Health to the operator/owner (permittee) of the injection well. A UIC permit contains the term and conditions under which the permittee must comply to operate the injection well. Monitoring and reporting requirements are specifically described in the UIC permit. When the use of the injection well is finished, the permittee must apply for well abandonment, and the Department will issue specific injection well abandonment instructions.
Regulations governing an injection well are under the Hawai'i Administrative Rules (HAR), Title 11, Chapter 23, Underground Injection Control. A copy of the rule (Chapter 23) is enclosed for your reference.

Please submit a complete application and filing fee, payable to the State of Hawai'i, by November 10, 2000. Because the application involves hydraulic, geologic, and injection well design and construction subjects, we recommend that an appropriate person be used to complete and service the UIC application. A complete and accurate application expedites processing.

Please mail your materials to:

Safe Drinking Water Branch
Environmental Management Division
State Department of Health
919 Ala Moana Blvd., Room 308
Honolulu, Hawai'i 96814

If you have any questions about this subject, please call Chauncey Hew of the Safe Drinking Water Branch at 586-4258.

Sincerely,

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

Enclosures: 1. Existing Injection Well Application For A UIC Permit To Operate & Instructions
2. Chapter 23
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**Receipt for Certified Mail**

No Insurance Coverage Provided

Do not use for International Mail

(See Reverse)

**Sent to:**
Mr. Nelson W.G. Lee

**Address:**
820 Mililani St., Ste. 810
Honolulu, HI 96813

**Date:**
FEB 19 1999
If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse RESTRICTED DELIVERY on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.
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<tr>
<td>• Complete items 3, and 4a &amp; b.</td>
<td></td>
</tr>
<tr>
<td>• Print your name and address on the reverse of this form so that we can return this card to you.</td>
<td></td>
</tr>
<tr>
<td>• Attach this form to the front of the mailpiece, or on the back if space does not permit.</td>
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<tr>
<td>• Write “Return Receipt Requested” on the mailpiece below the article number.</td>
<td></td>
</tr>
<tr>
<td>• The Return Receipt will show to whom the article was delivered and the date delivered.</td>
<td></td>
</tr>
<tr>
<td>3. Article Addressed to:</td>
<td>I also wish to receive the following services (for an extra fee):</td>
</tr>
<tr>
<td>Mr. Nelson W.G. Lee</td>
<td>1. [ ] Addressee’s Address</td>
</tr>
<tr>
<td>Haseko (Ewa), Inc.</td>
<td>2. [ ] Restricted Delivery</td>
</tr>
<tr>
<td>820 Mililani St., Ste. 810</td>
<td>Consult postmaster for fee.</td>
</tr>
<tr>
<td>Honolulu, HI 96813</td>
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**Thank you for using Return Receipt Service.**
UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

Print your name, address and ZIP Code here

COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. Box 521
Honolulu, Hawaii 96813

Attn: Lenore
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.
820 Millilani Street, Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Notice of Action
Proposed Revocation/Modification of Water Use Permit (WUP No. 192)
Proposed Extension of Interim Water Use Permit (WUP No. 347)
EP 27/Haseko Well No. 1 (Well No. 1902-01)
Puuloa Ground Water Management Area, Oahu

This corrects our previous Notice of Action, dated October 27, 1998, on the staff's proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01).

Our previous notice was correct where by a unanimous vote of the Commission at their meeting of October 22, 1998, the Commission deferred action on WUP No. 192 at the request of the Attorney General’s Office pending a legal analysis of what process is required to modify conditions of a permit that was the subject of a contested case hearing.

However, the Commission also extended WUP No. 347, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.
d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected
      uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become
   available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol (Attachment B) and the
   submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions (Attachment C).

The Commission decided that interim permittees shall be notified by letter of the
Commission action and extended permit duration and that re-issuance of new interim water use
permits for these extended permits is unnecessary.

Please be advised that the Commission directed staff to strictly enforce the weekly water
data reporting requirement and the requirement to submit a water shortage plan. (If you have not
done so already, please submit your water shortage plan, as required under Standard Condition
17.) In addition, all interim permittees will be sent the monthly bulletin which shows all pending
permit applications. Permittees are encouraged to review new applications and water data from
nearby wells to proactively protect their sources.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

EDWIN T. SAKODA
Acting Deputy Director

LN:ss
Attachments
November 13, 1998

Timothy Johns, Esq.
Deputy Director
Department of Land & Natural Resources
Kalanikolu Building
1151 Punchbowl Street
Room 227
Honolulu, HI 96813

RE: Proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01)

Dear Mr. Johns:

Thank you for your October 27, 1998 letter informing us that the Commission deferred action on the subject water use permits at the October 22, 1998 Commission meeting. We appreciate the consideration given to our unique situation, given our contested case hearing and the recent final decision and order.

This is to inform you that Haseko (Ewa), Inc. is willing to voluntarily reduce its WUP No. 192 to the 0.770 mgd amount recommended by your Staff.

We understand that your Staff recommends that:

1. The 1.8 mgd permanent allocation for agricultural uses, currently existing under WUP 192, be reduced to 0.770 mgd under a new interim water use permit; and

2. The existing 1.5 mgd interim water use permit, WUP No. 347, be extended subject to the conditions listed in the Staff Submittal (Extension of Water Use Permits, Puuloa and Kapolei Ground Water Management Areas, Oahu) dated October 22, 1998.
Haseko (Ewa), Inc. has reviewed the staff submittal in connection with the final decision and order in the contested case, which refers specifically to the subject WUPs by number. Based on that review and mindful of Staff's recommendations, we believe that WUP No. 192 and WUP No. 347 should retain the same identification numbers and classifications (permanent and interim, respectively), but the allocation under WUP No. 192 may be reduced to 0.770 mgd as recommended by your Staff. Under our voluntary reduction in allocation, WUP No. 192 would remain a permanent permit but at a reduced allocation of 0.770 mgd and interim WUP No. 347 would be extended as recommended by your Staff.

Thank you for your consideration and cooperation. Please call me if there is any further action required on our part to implement the reduction for WUP No. 192.

Very truly yours,

Nelson W. G. Lee
Executive Vice President

cc: Linnel Nishioka, Esq.
    Angela Fong, Esq.
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani Street, Suite 810  
Honolulu, HI 96813

Dear Mr. Lee:

Notice of Action  
Proposed Revocation/Modification of Water Use Permit (WUP No. 192)  
Proposed Extension of Interim Water Use Permit (WUP No. 347)  
EP 27/Haseko Well No. 1 (Well No. 1902-01)  
Puuloa Ground Water Management Area, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on the staff’s proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01).

By a unanimous vote of the Commission at their meeting of October 22, 1998, the Commission deferred action on WUP Nos. 192 and 347 at the request of the Attorney General’s Office pending a legal analysis of what process is required to modify conditions of a permit that was the subject of a contested case hearing.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

TIMOTHY E. JOHNS  
Deputy Director

LN:ss
STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

October 22, 1998
Honolulu, Oahu

Haseko (Ewa), Inc.

REVOCATION/MODIFICATION OF WATER USE PERMIT
EP 27, Well No. 1902-01 (WUP No. 192)
Puuloa Ground Water Management Area, Oahu, TMK 9-1-12:5

LOCATION MAP: See Exhibit 1

BACKGROUND:

On December 16, 1992, the Commission approved a water use permit (WUP No. 192) for Well No. 1902-01 for Oahu Sugar Company, Ltd. (OSCO) as water user jointly with Haseko Hawaii, Inc. as source landowner for 4,160 mgd.

In the summer of 1993, OSCO announced the closure of its sugarcane operations.

On May 18, 1994, Haseko (Ewa), Inc. (Haseko) submitted a completed water use permit application to modify WUP No. 192 to allow 1,500 mgd of ground water to be used for construction and operation of a proposed 27-hole golf course and roadway landscaping for the Ewa Marina project, including interim use for dust control and maintenance irrigation for fallow fields. The remaining allocation would be retained for agricultural use.

On July 13, 1994, the Commission approved WUP No. 347 for 1,500 mgd. WUP No. 192 was modified and reduced to 2,660 mgd for agriculture use.

In a letter dated May 12, 1995, Haseko notified the Commission of the transfer of the water use permit(s) (WUP Nos. 347 and 192) for Well No. 1902-01 from OSCO, effective April 1, 1995.

On May 14, 1997, the Commission modified WUP No. 192 by reducing the permitted use for agriculture from 2,660 mgd to 1,800 mgd (Exhibit 2).
ANALYSIS/ISSUES:

Exhibit 3 shows that the pump was shut off in September, 1994 and remained inactive for about two (2) years. Haseko has since planted about 100 acres of hay as an interim land use pending the development of the Ocean Pointe project (formerly Ewa Marina). The current twelve-month moving average withdrawal for agriculture is 0.770 mgd.

Partial or total nonuse of the water allowed by the permit for a period of four continuous years or more constitutes a ground for revocation of the permit, pursuant to §174C-58(4) Hawaii Revised Statutes (HRS). In the four (4) years since the pump was completely shut off, only 0.770 mgd of the 1.800 mgd agricultural allocation has been used. As such, the Commission may revoke 1.030 mgd at this time.

The guideline for turf irrigation in the Ewa area is between 4,000 gpd/acre (Hawaii Water Systems Standards, 1985 - Domestic Consumption Guideline) and 4,700 gpd/acre (May 14, 1997 Staff Submittal - Hawaii Prince Request for Variance from Domestic Consumption Guideline). Based on these guidelines, 0.400 mgd to 0.470 mgd would appear reasonable for 100 acres of hay in the Ewa area. The staff could not confirm whether the agricultural operations have expanded, which could account for the current 0.770 mgd 12-month moving average withdrawal. However, this is for an existing agricultural use that is a temporary use pending the construction of the Ocean Pointe project. Should the Ewa Marina be excavated as proposed, Haseko concedes that the utility of the well would be lost. The staff is planning to investigate the agricultural operations for any obvious signs of wastage during their next monthly sampling run.

The terms and conditions of WUP No. 192 are shown in Exhibit 2. The staff recommends that the Commission replace the standard and special conditions of WUP No. 192 with the set of conditions that have been attached to permits for new irrigation uses in the Ewa Caprock because:

1) hydrologic conditions have changed since this permit was originally granted - Exhibit 4 shows that the 1992 approval occurred when low chloride basal water was being imported to the caprock by OSCO, which artificially enhanced the caprock aquifer. Although chlorides at some EP wells were already beginning to rise, the complete cessation of sugarcane agriculture will diminish the reliability of the aquifer and users' ability to pump; and

2) reclaimed water will soon become available as an alternate nonpotable supply source.

This submittal fulfills the hearing requirement under §174C-58 HRS for revocation of a water use permit.

RECOMMENDATION:

That the Commission approve the issuance of an interim water use permit (WUP No. 518) to Haseko (Ewa), Inc. for the reasonable and beneficial use of 770,000 gallons per day of brackish water for agricultural use from EP 27 (Well No. 1902-01), subject to the Standard Water Use Permit Conditions listed in Attachment B and the following Special Conditions:
1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

2. 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.

3. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

4. The duration of the interim permit shall be to
   a. to July, 2001, or
   b. until treated wastewater is available, acceptable, and affordable for use, or
   c. until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

5. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

6. Require adherence to the chloride sampling protocol shown in Exhibit 5 and the submittal of weekly chloride data.

7. Require adherence to the Conservation Conditions shown in Exhibit 6.

8. In the event a water shortage is declared by the Commission, permittees shall comply with the Puuloa water shortage plan adopted by the Commission.

9. This water use permit, WUP No. 518, supersedes WUP No. 192.

Respectfully submitted,

TIMOTHY E. JOHNS
Deputy Director

Attachment(s):  A  (Standard Water Use Permit Conditions)

Exhibit(s):  1 (Location Map)
            2 (WUP No. 192)
            3 (Graph of Monthly Pumpage for Well No. 1902-01)
            4 (Chloride and Pumpage of Ewa Plantation Shallow Wells, 1930-1995)
            5 (Chloride Sampling Protocol)
            6 (Conservation Conditions)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

ATTACHMENT A
10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

   Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

ATTACHMENT A
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 821
HONOLULU, HAWAII 96809
MAY 30 1997

Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Millilani St., Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu

This letter transmits your modified water use permit for EP 27 (Well No. 1902-01) for use of 1.800 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. Standard Condition 18 for interim water use permits shall not apply.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

In addition, the Commission is requiring you to conduct a pump test by June 14, 1997 to confirm that the source can sustain withdrawals at the modified permitted amount without exceeding 1,000 mg/l of chloride. The Commission has delegated the authority to approve or modify the proposed pump test procedure to the Commission staff.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

[Signature]

MICHAEL D. WILSON
Chairperson

Attachments

EXHIBIT 2
GROUND WATER USE PERMIT
WUP NO. 192

PERMITTEE
Applicant/Water User
Address HASEKO (EWA), INC. 820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

Landowner of Source
Address HASEKO (EWA), INC. 820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

PERMITTED SOURCE INFORMATION
Island OAHU
Water Management Area PUULOA
Aquifer Sector EWA CAPROCK
Aquifer System PUULOA
System Sustainable Yield NA
Well Name EP 27
State Well No. 1902-01

PERMITTED USE INFORMATION
Reasonable beneficial use AGRICULTURE
Withdrawal (12 month moving ave.) 1.800 mgd
Chloride Cap 1.000 mg/l
Location of water use
TMK # OSCO FIELDS 71.84.86.88.(POR)91
Address EWA, OAHU
State land use classification URBAN
County zoning classification P-2, RESORT, B-5, B-2, A-1, A-2

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:

EXHIBIT 2
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest" (HRS § 174C-3).

2. The right to use ground water is a shared user right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-110(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submission, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.

EXHIBIT 2
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-52 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ___________________________ Date: ___________________________

Printed Name: ___________________________ Firm or Title: ___________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Start 1937
Basal (low Cl) irrigation
Pumps 15,16
Total imported basal water from Ko'olau ranged < 50-70 mgd

Average monthly pumpage (mgd)
Est. average yearly pumpage (12)

Stop 1994

Chloride Concentration (mg/l)

Year

Average Pumpage (mgd)

Ref: CWRID, BWS File, R-79, & Steams (1935, 1940)

FIGURE 7
- EP-20
- EP-21
- EP-22
- EP-23
- EP-24
- EP-27,28
- EP30

EXHIBIT 4
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

- Sampling Schedule

The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

- When to Sample

Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

- Sample Bottle

Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

- Labeling

On the sample bottle, affix a label that contains the following information:

Well No.
Date
Time Sampled
Elapsed Time after pump on
Sampler's Name
Water Temperature (if available)
Pumping Rate (prior to sampling)
2. **Determination of Chloride Concentration**

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. **Be consistent with the end-point color change.**

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** **Be consistent with the end-point color.** Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. **Reporting Results**

- **How to Report**

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

**Under "Notes" Section of the Monthly Water Use Report:**

2. Method used for chloride analysis: _______________

3. Total elapsed time before sampling: _______________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
<table>
<thead>
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<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
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</thead>
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1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:
      
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 6
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAI'I 96808

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT
October 22, 1998
Honolulu, Oahu

EXTENSION OF INTERIM WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

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LOCATION MAP: See Exhibit 1

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Walawa, Ewa-Kunia, and Makaiwa Aquifer Systems. Due to uncertainties regarding the caprock's sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock.

On April 28, 1993, the Commission awarded temporary one-year permits for new irrigation uses of ground water in the Ewa Caprock because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture. In analyzing water availability, the Commission used guidelines for sustainable yields for the Puuloa, Kapolei, and Maikole areas (Yuen & Associates, Inc., 1989).

On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.
At the July 5, 1995 Commission meeting in Honokaa, Hawaii, the Commission extended the permits, which were now called interim permits, until such time that a formal decision could be made on Oahu.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a sustainable yield for the caprock.

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for individual irrigation wells at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The Commission also adopted the Puuloa, Kapolei, and Malakole Aquifer Systems in the Ewa Caprock Sector and approved pending applications for new and continued irrigation uses. The specified duration of the interim water use permits is to October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincides with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provides a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999.

**ANALYSIS/ISSUES:**

There has been no significant change in permitted, actual, or projected uses or water supply. Current interim water use permits and 12-month moving average withdrawals are shown in Exhibit 2. (Standard and Special Conditions of the interim permits are shown in Attachments A and B.) Exhibit 3 contains a complete listing of all permitted uses in the Puuloa and Kapolei Aquifer Systems. (Please note that the October 22, 1998 agenda includes three items that, if approved, will reduce the total permitted uses in Puuloa.)

**PROTECTION OF THE RESOURCE**

The current sustainable yield for the caprock aquifers is defined by a sustainable capacity at all irrigation wells in the Puuloa and Kapolei Aquifer Systems which prohibits individual pumpages that cause the specific well to exceed a 1,000 mg/l chloride cap. Enforcement of the chloride cap provides adequate protection for the aquifer.

The chloride cap is tied to anticipated wastewater reuse, which was planned to occur via a percolation trench to recharge the caprock aquifer with up to 13 million gallons per day (mgd) of treated effluent (Kumagai, 1996. Final Report. Recommendation for Water Reclamation, Nonpotable Water Plan for Oahu. Prepared for: Commission on Water Resource Management, State of Hawaii, and Department of Wastewater Management, City and County of Honolulu). However, the City now plans to deliver R-1 water directly to individual users. In either reuse application, the current sustainable yield method is and has been an effective means to protect the aquifer.

**MAXIMIZING THE UTILITY OF THE RESOURCE(S)**

Maximizing the utility of the caprock is intimately tied to wastewater reuse. As wastewater reuse comes on line, the sustainable yield of the caprock will increase, meaning more pumpage may be sustained under the 1,000 mg/l chloride limit. However, the distribution of reclaimed wastewater is uncertain, which will affect chloride distributions and total nonpotable supply. Although the City has not yet made reclaimed water available for nonpotable uses that will support their plans for urbanization of the Ewa area and the City-required dual water systems for new urban...
developments, the City has indicated that private irrigation uses over the caprock may be served by reclaimed water by July, 2001. Of the projected total 13 mgd R-1 water from the Honouliuli Wastewater Treatment Plant, 1 mgd is needed for in-plant process water, and 2 mgd is planned for industrial uses at James Campbell Industrial Park. This leaves about 10 mgd available for irrigation needs in the region.

The City is in the process of finalizing a contract with U.S. Filters for the construction, operation, and marketing for a reclamation system. Until the contract is finalized, the City will not enter into any agreements with individual users for the purchase of the R-1 water. As such, Special Condition D (Attachment B) could not be met by the users, and these users should not be penalized for this noncompliance.

Given the City’s current plans, the staff estimates that the potential future supply of nonpotable water for irrigation uses on lands overlying the Puuloa Aquifer System, where the competition for nonpotable irrigation water is most severe, could be up to about 15 mgd: 10 mgd reclaimed water plus approximately 5 mgd natural sustainable yield (Bauer, 1996). This assumes that 100% of the treated effluent will be available for reuse in Puuloa, which is improbable. But the availability of reclaimed water will present permittees with a possible alternative should their wells exceed the 1,000 mg/l chloride limit. Likewise, should the 1,000 mg/l limit not be exceeded, the permittees may continue to pump and may even work out a management plan which would allow for alternating between caprock and wastewater reuse to maximize the economical use of both resources. But ultimately, based on current reclaimed water plans, total allocations should not exceed 15 mgd.

Management of the resource via a chloride cap was adopted on May 14, 1997 as an interim management plan, subject to review in two (2) years. By May, 1999 or as total allocations begin to approach the total nonpotable supply in Puuloa, the Commission may consider establishing a regional sustainable yield, which would be something less than 15 mgd for the Puuloa area, unless additional water supply (e.g., expansion of the wastewater reclamation plant) becomes available. It is uncertain whether the chloride cap would be supplanted by a regional sustainable yield number.

WELL INTERFERENCE

Since there are no ground-water models (solute-transport) which can predict chloride response to pumpage at individual well sites, close monitoring of the resource and enforcement of the chloride cap is critical to protect the resource in this interim period while the City finalizes plans to implement a reclamation program. Exhibit 6 shows that the caprock aquifer was significantly influenced by sugarcane irrigation practices and is still in a state of flux. Currently, all interim permittees are required to submit weekly reports of pumpage, water levels, chlorides, and water temperature (unless a variance from this requirement has been approved). All permittees are put on notice that the reporting requirement will be strictly enforced.

Although enforcement of the 1,000 mg/l chloride cap at each well site will provide adequate protection for the resource, it may not be sufficient to preclude well interference. However, not only will wastewater reuse further protect the resource, it will also help to reduce the effects of well interference that may cause individual wells to exceed the 1,000 mg/l chloride cap. Special Condition D has been added to the existing interim permits recommended for extension and will be added to all future caprock permits to put the permittees on notice of the risk of reliance on caprock ground water and its uncertain sustainable yield.

The staff proposes to send all interim permittees in Puuloa the monthly bulletin which shows all pending permit applications, which should provide the permittees sufficient notice of new proposed uses of Puuloa Caprock ground water. Permittees should review new applications and water data from other nearby wells to proactively protect their sources. Permittees are encouraged to submit comments or objections in accordance with Administrative Rule 13-171-18 (Objection to Proposed
Water Use Permit. Further, the staff has been analyzing the weekly water data reports, and we are currently working on triggers to implement a water shortage plan. These triggers may be related to some modification of Exhibit 6. Should valid claims of well interference be raised, either by permittees or as a result of the staff's analysis, the Commission may consider implementing a water shortage plan to address the well interference issue.

However, at this time, only an informal and incomplete water shortage plan exists. On May 14, 1997, the Commission approved a permit classification system for a water shortage plan for the Puuloa Aquifer System as provided under Administrative Rule 13-171-42:

"(a) The commission shall formulate a plan for implementation during periods of water shortage. As a part of the plan, the commission shall adopt a reasonable system of permit classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.

(b) In accordance with this chapter, the commission may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

(c) All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission."

The highest priority of nonpotable use is agriculture because the State's policy is to promote agriculture, and also because agricultural correlative uses are assured through the 1978 Constitutional Amendment. The second priority in water use is golf course irrigation because of the economic impacts that may result from inadequate water supply. The lowest priority in water use is landscape irrigation and dust control.

The priorities assigned to each permitted use and the maximum reductions indicated in the individual users' water shortage plans are shown in the last two columns of Exhibit 7. Individual water shortage plans outline smaller initial cutbacks (i.e., 10% to 30%), however under the most severe shortage situations, Exhibit 7 shows the maximum reduction in Puuloa Aquifer System pumpage would have been at least 3.718 mgd. However, this 3.718 mgd amount is subject to change following proposed revocation actions for unused agricultural allocations and formulation and adoption of a regional shortage plan.

Water shortage plans were requested from all of the users in Puuloa, with the exception of United States Fish and Wildlife Service. The requirement to submit individual water shortage plans is highlighted in the cover letter which transmits the permit and is also stated in Standard Condition 17. Not all users have submitted water shortage plans nor returned signed permits (see Exhibit 8). The staff will continue to work with these users to develop their individual plans. As part of the May 14, 1997 action, the Commission has also delegated the authority to the Chairperson to approve individual water shortage plans and the regional water shortage plan for the Puuloa Aquifer System.

RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 2, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.
b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available, acceptable, and affordable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol shown in Exhibit 4 and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions shown in Exhibit 5.

h. In the event a water shortage is declared by the Commission, permittees shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

3. Order 1902-01 pending legal analysis of process required to modify the conditions of a permit that was the subject of a CEC.

Respectfully submitted,

TIMOTHY E. JOHNS
Deputy Director

Attachment(s):
A (Standard Conditions for a Water Use Permit)
B (Special Interim Water Use Permit Conditions)

Exhibit(s):
1 (Location Map)
2 (Current Interim Permitted Uses, Puuloa and Kapolei Aquifer Systems)
3 (Current Permitted Uses, Puuloa and Kapolei Aquifer Systems)
4 (Chloride Sampling Protocol)
5 (Conservation Conditions)
6 (Chloride and Pumpage of Ewa Plantation Shallow Wells)
7 (Partial Water Shortage Plan)
8 (Summary of Unsigned Permits and No Water Shortage Plan)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

ATTACHMENT A
Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PuuOoa or Kapolei Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PuuOoa or Kapolei Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PuuOoa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

ATTACHMENT A
SPECIAL INTERIM WATER USE PERMIT CONDITIONS

a. The duration of the interim permits shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use or water supply occurs.

b. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data.

c. Require adherence to the Conservation Conditions shown in Exhibit 12.

d. Require the following PCUG members to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy reclaimed water by July 1, 1999 for the cumulative amounts specified in Exhibit 7 (Pro-Rata Share):

1) Gentry Investment Co. - Commitment to use a total of 0.430 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well No. 2002-15 and Well No. 2001-10.

2) Haseko (Ewa), Inc. - Commitment to use a total of 0.40 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well No. 1902-01.

3) Hawaii Prince Golf Club - Commitment to use a total of 0.40 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well Nos. 1900-02, 17 to 20 & 1901-03.

4) Ewa Beach International Golf Club - Commitment to use a total of 0.27 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well Nos. 1900-21,22 & 1959-08.

ATTACHMENT B
## Current Active Water Use Permits

*Excluding salt water use permits (i.e., wup-wma.rpt)*  
October 5, 1998

**ISLAND OF OAHU**

**WMA Aquifer System:** KAPOLEI

**Sustainable Yield:** mgd

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7 Permits Totaling 1.796 Available SY

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**EXHIBIT 2**

*(f:\work\database\reports\wup-wma.rpt)*
## ISLAND OF OAHU

**WMA Aquifer System:** PUULOA

**Sustainable Yield =** mgd

### Current Active Water Use Permits (Excluding salt water use per WMA) October 7, 1998

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<tr>
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<tr>
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<td>2002-18</td>
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</table>

21 Permits Totaling 4.826 mgd Available SY

---

**EXHIBIT 2**

(t:/work/database/reports/wup-wma.rpt)
### Current Active Water Use Permits

**ISLAND OF OAHU**

**WMA Aquifer System: PUULOA**

**Sustainable Yield** = mgd

<table>
<thead>
<tr>
<th>No. Approved</th>
<th>Applicant</th>
<th>Well No</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
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</thead>
<tbody>
<tr>
<td>152</td>
<td>HAWAII PRINCE GOLF CLUB</td>
<td>1900-02</td>
<td>EP 22</td>
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<tr>
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<td>152</td>
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<tr>
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<tr>
<td>170</td>
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<td>U.S. DOC/NOAA/NWS</td>
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<td>PACIFIC TSUNAMI</td>
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<td>192</td>
<td>HASEKO (EWA), INC.</td>
<td>1902-01</td>
<td>EP 27A, 27B, 28, 29</td>
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<td>347</td>
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<td>160</td>
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<td>EP 21</td>
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<td>U.S. NAVY</td>
<td>2001-01</td>
<td>EP 23</td>
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<td>EWA GENTRY</td>
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<td>GEIGER PARK</td>
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<td>PALM VILLA 2</td>
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<tr>
<td>355</td>
<td>GENTRY DEVELOPMENT CO.</td>
<td>2001-10</td>
<td>GENTRY AREA 24</td>
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<tr>
<td>497</td>
<td>CORAL CREEK GOLF, INC.</td>
<td>2001-13</td>
<td>CORAL CREEK NO 4</td>
<td>0.600</td>
</tr>
<tr>
<td>249</td>
<td>GENTRY PACIFIC, LTD.</td>
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<td>PALM COURT 3</td>
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<tr>
<td>169</td>
<td>PALM COURT ASSOCIATION</td>
<td>2002-15</td>
<td>GENTRY G.C. IRR</td>
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<tr>
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<td>494</td>
<td>GOODFELLOWS BROS., INC.</td>
<td>2002-17</td>
<td>CORAL CREEK NO 2</td>
<td>0.900</td>
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<tr>
<td>498</td>
<td>CORAL CREEK GOLF, INC.</td>
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<td>CORAL CREEK NO 3</td>
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<tr>
<td>247</td>
<td>U.S. FISH &amp; WILDLIFE</td>
<td>2101-14</td>
<td>HONOLULU UNIT</td>
<td>0.216</td>
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38 Permits Totalling 17.196 Available SY
## Current Active Water Use Permits

(Excluding salt water use permits, October 7, 1998)

### WMA Aquifer System: KAPOLEI

<table>
<thead>
<tr>
<th>No. Approved</th>
<th>Applicant</th>
<th>Well No</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>162</td>
<td>PUU MAKAKILO INC.</td>
<td>1904-02</td>
<td>MAKAKILO GC</td>
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<td>182</td>
<td>CAMPBELL ESTATE</td>
<td>1905-08</td>
<td>KAPOLEI IRR 1</td>
<td>0.302</td>
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<td>KAPOLEI PEOPLE'S, INC.</td>
<td>2003-01</td>
<td>KAPOLEI G COURSE A</td>
<td>1.000</td>
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<td>438</td>
<td>KAPOLEI PEOPLE'S, INC.</td>
<td>2003-02</td>
<td>KAPOLEI G COURSE A</td>
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<tr>
<td>432</td>
<td>STATE HFDC</td>
<td>2003-04</td>
<td>KAPOLEI IRR D</td>
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<td>432</td>
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<td>KAPOLEI G COURSE A</td>
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<td>STATE HFDC</td>
<td>2003-07</td>
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</table>

9 Permits Totaling Available SY 2.946
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

- Sampling Schedule

The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

- When to Sample

Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

- Sample Bottle

Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

- Labeling

On the sample bottle, affix a label that contains the following information:

- Well No.
- Date
- Time Sampled
- Elapsed Time after pump on
- Sampler's Name
- Water Temperature (if available)
- Pumping Rate (prior to sampling)
2. Determination of Chloride Concentration

- Private Laboratories

If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

Private laboratories will use methods that are more accurate than field methods described below.

- Hach Kit (Drop Count Titrator)

Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. Be consistent with the end-point color change.

For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- Hach Kit (Digital Titrator)

A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

Note: Be consistent with the end-point color. Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- Other Methods

An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.

EXHIBIT 4
3. **Reporting Results**

- **How to Report**

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

   Under "Notes" Section of the Monthly Water Use Report:

2. Method used for chloride analysis:

3. Total elapsed time before sampling:

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
### FIVE WELL VOLUMES PLUS 60 MINUTES MINIMUM TIME BEFORE CHLORIDE SAMPLING

<table>
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<tr>
<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
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</thead>
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<td>6</td>
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<td>140</td>
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<td></td>
<td>20-50</td>
<td>110</td>
</tr>
<tr>
<td>8</td>
<td>10-20</td>
<td>190</td>
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<td>20-50</td>
<td>125</td>
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<tr>
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<td></td>
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<td>75</td>
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<tr>
<td></td>
<td>&gt;250</td>
<td>75</td>
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<td>75</td>
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<tr>
<td></td>
<td>500-700</td>
<td>68</td>
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<tr>
<td></td>
<td>700-1000</td>
<td>68</td>
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<tr>
<td></td>
<td>&gt;1000</td>
<td>72</td>
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</table>

1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.
   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.
   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 5
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu


Ref: CWRIO, BWS Bas, R-79, & Beam (1930, 1942)
### Allocation Plan, Ewa Caprock Ground Water Management Area, Pu′uloa

#### Pre-1978 Permanent Permits

<table>
<thead>
<tr>
<th>User</th>
<th>Well Name/No.</th>
<th>Use</th>
<th>Current Allocation</th>
<th>Recommended Allocation</th>
<th>Basis</th>
<th>Priority</th>
<th>Reduction²</th>
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<tbody>
<tr>
<td>Campbell</td>
<td>EP 21/2000-01</td>
<td>Ag</td>
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#### Post-1978 Permanent Permits

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<th>Current Allocation</th>
<th>Recommended Allocation</th>
<th>Basis</th>
<th>Priority</th>
<th>Reduction²</th>
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</thead>
<tbody>
<tr>
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<td>EP 22, Wells 1 to 5/1900-02, 17 to 20,1901-03</td>
<td>G.Course</td>
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<td>0.900</td>
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<td>Pu′uloa GC Irr/1900-21</td>
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<td>Ewa Gentry/2001-02</td>
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<td>Projected</td>
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#### Interim Permits (5-yr)

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<th>Well Name/No.</th>
<th>Use</th>
<th>Current Allocation</th>
<th>Recommended Allocation</th>
<th>Basis</th>
<th>Priority</th>
<th>Reduction²</th>
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</thead>
<tbody>
<tr>
<td>Hawai′i Prince</td>
<td>EP 22, Wells 1 to 5/1900-02, 17 to 20,1901-03</td>
<td>G.Course</td>
<td>0.129</td>
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#### Expired Interim Permits (1-yr)

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#### TOTALS

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1. Highest priority (Ag)
2. Intermediate priority (G. Course)
3. Lowest priority (Landscape Irr. dust control)

Maximum reduction indicated in water shortage plan.
Current Active Water Use Permits (Excluding salt water use per (f.l.\_wup-wma.rpt))  October 15, 1998

ISLAND OF OAHU
WMA Aquifer System: PUULOA
Sustainable Yield = mgd

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<tr>
<th>No.</th>
<th>Well No</th>
<th>Applicant</th>
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38 Permits Totalling 17.196
Available SY

EXHIBIT 8
Current Active Water Use Permits  (Excluding salt water use permits)

ISLAND OF OAHU
WMA Aquifer System: KAPOLEI
Sustainable Yield = mgd

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<th>No. Approved</th>
<th>Applicant</th>
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9 Permits Totalling 2.946 Available SY

EXHIBIT 8
MEMORANDUM

TO: Tim Johns, Deputy Director, CWRM

FROM: Linnel T. Nishioka, Deputy Attorney General

RE: Haseko Water Use Permits, Items 9 and 12.

I am requesting that the Commission defer any action on Haseko WUP 192 (item 9) and WUP 347 (item 12). Both permits were referenced in the final decision and order of the Commission in the Ewa Marina case. Currently our office is analyzing the legal issue of what process is required to modify any conditions of that permit that were the subject of the contested case hearing. We are undertaking a careful analysis of the issue since any advice given on this case would probably impact the other pending decisions, including Waiahole, Laie, and Waiola. In the meantime, we request that the Commission not take any action on these permits until our analysis is completed. We anticipate an answer prior to the next commission meeting in November, 1998. Thank you for your patience in this matter, it is greatly appreciated. Please contact me at 587-2990 should you have any questions or wish to discuss any matter further.
MEMORANDUM

TO: Tim Johns, Deputy Director, CWRM

FROM: Linnel T. Nishioka, Deputy Attorney General

RE: Haseko Water Use Permits, Items 9 and 12.

I am requesting that the Commission defer any action on Haseko WUP 192 (item 9) and WUP 347 (item 12). Both permits were referenced in the final decision and order of the Commission in the Ewa Marina case. Currently our office is analyzing the legal issue of what process is required to modify any conditions of that permit that were the subject of the contested case hearing. We are undertaking a careful analysis of the issue since any advice given on this case would probably impact the other pending decisions, including Waiahole, Laie, and Waiola. In the meantime, we request that the Commission not take any action on these permits until our analysis is completed. We anticipate an answer prior to the next commission meeting in November, 1998.

Thank you for your patience in this matter, it is greatly appreciated. Please contact me at 587-2990 should you have any questions or wish to discuss any matter further.
April 28, 1998

Mr. Edwin Sakoda, Acting Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Edwin Sakoda:

Subject: Reuse Agreements Between the City and County of Honolulu and Gentry, Ltd.; Haseko, Inc./Coral Creek Golf Course; and Hawaii Prince Golf Course

This is to inform you that the City and County of Honolulu has issued an award to U.S. Filter Corporation (USF) for a contract to design, build, and operate a 13 mgd wastewater reclamation facility for beneficial reuse of the secondary effluent from the Honolulu Wastewater Treatment Plant.

The project will be implemented in two phases. Phase 1 will treat 8 mgd of secondary effluent to R-1 quality standards: 2 mgd will undergo further treatment for use as industrial service water for Campbell Industrial Park; 2 mgd is for Honolulu in-plant uses; 2 mgd is for irrigation of City owned golf courses West Loch and Ewa Villages and 2 mgd is available for customers between the Honolulu plant and the City of Kapolei. In Phase 2 of the project USF will expand the capacity of the plant to 13 mgd by July 1, 2001. The remaining 5 mgd will be available to non potable users in the Ewa Plain for landscape and golf course irrigation.

We are aware that our reclamation facility is an integral factor in managing the Ewa Caprock and are pleased to be part of this effort. We have continued to meet with Gentry, Haseko, Hawaii Prince Golf Course, Coral Creek Golf Course and New Ewa Beach Golf Course and keep them informed of the City’s progress for the R-1 facility. The City, however, will not be able to enter into formal agreements regarding the purchase of reclaimed water in accordance with the timetable established for these permit users in their interim permits.

We suggest that the date to enter into agreements to purchase the reclaimed water be extended to October 31, 1999, or soon thereafter. As Phase 2 of the reclamation facility is developed, we will have a more definite time frame for the availability and cost of the...
Mr. Edwin Sakoda  
April 28, 1998  
Page Two

reclaimed water. The City will then be able to obtain commitments from customers to buy reclaimed water. We do look forward to coordinating the City's efforts with the Water Commission to make this water available for those now using groundwater from the Ewa Caprock.

If there are any questions, please do not hesitate to contact me at 527-6663.

Sincerely,

KENNETH E. SPRAGUE  
Director

cc: Gentry Homes, Ltd.; Attn.: Jeffrey C. Dinsmore  
560 N. Nimitz Highway, Suite 213  
Honolulu, Hawaii 96817

Hawaii Prince Golf Club; Attn.: Garrick Iwamuro  
91-1200 Fort Weaver Road  
Ewa Beach, Hawaii 96706

Haseko, Inc.; Attn.: Nelson Lee  
820 Mililani Street, Suite 820  
Honolulu, Hawaii 96813-2938
<table>
<thead>
<tr>
<th>TO</th>
<th>INIT.</th>
<th>TO</th>
<th>INIT.</th>
<th>FOR</th>
<th>PLEASE</th>
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<tbody>
<tr>
<td>BAUER, G.</td>
<td>V</td>
<td>CHING, F.</td>
<td></td>
<td></td>
<td>See Me</td>
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<tr>
<td>FUJII, N.</td>
<td>V</td>
<td>HARDY, R.</td>
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<td></td>
<td>Review &amp; Comment</td>
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<tr>
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<td></td>
<td>HIRANO, E.</td>
<td></td>
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<td>IMATA, R.</td>
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</table>

Neal, We don't want weekly reports do we?

Not really, but I've been asked for it. Is this really necessary?

Please, I'm beginning to wonder if something temporary is necessary like
dust control constitutes a 'change' in use. Even a farm
may need to do dust control—enough more regularly than
a construction site. 0.315 mg/ld was approved for dust control.
March 3, 1998

MEMORANDUM FOR THE RECORD

FROM:  Glenn Bauer

SUBJECT:  Weekly Reporting of Chlorides by Haseko for EP-27

Haseko has submitted weekly pumpage, water level, and chloride data from their EP-27 source (well no. 1902-01). The question as to whether they should continue to report weekly or switch to monthly reporting has been asked. My feeling is that weekly reporting is valuable in this case because of the possibility that their water use permit for a marina will be granted. If, indeed it is, then weekly data will be collected from a proposed series of monitor holes surrounding the marina. These monitoring holes will be a part of the Corps of Engineers and CWRM permit requirements. Weekly reporting of EP-27 will provide us more baseline data to use in the monitoring of the Puuloa caprock aquifer.

Table 1 is a summary of the data that they have provided us and including the average weekly ocean level measured at Tom Nance’s tide gage established at Barbers Point Deep Draft Harbor for the expansion project. Also attached is a graph of the chloride, water level, ocean level, and pumpage data presented in Table 1.

<table>
<thead>
<tr>
<th>Week No.</th>
<th>Week Of</th>
<th>Chloride (mg/l)</th>
<th>Weekly % Change Of Cl Conc</th>
<th>Water Level (ft. msl)</th>
<th>Av. Ocean (ft. msl)</th>
<th>Weekly Q (mgd)</th>
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<tr>
<td>1</td>
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<td>994</td>
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<td>1.43</td>
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<td>1.02</td>
<td>1.43</td>
</tr>
<tr>
<td>3</td>
<td>11/10/97</td>
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<td>0.71</td>
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<td>4</td>
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<td>7</td>
<td>12/8/97</td>
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<td>1.00</td>
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<td>12/29/97</td>
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<td>1.53</td>
<td>0.97</td>
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<td>1.36</td>
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<td>1.71</td>
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<td>1/19/98</td>
<td>866</td>
<td>1.3</td>
<td>1.30</td>
<td>0.99</td>
<td>1.71</td>
</tr>
</tbody>
</table>

Table 1 and the graphical representation of the data are important in that chloride trends are clearly shown. The data also show that water quality improved from 994 mg/l to 888 mg/l over the first six weeks of use. From week no. 7 on, the chloride concentration seems to be directly
related pumpage. Average weekly water levels at EP-27 generally mimics the ocean tide measured at Barbers Point Harbor.

In summary, weekly water level, chloride, and pumpage data collected from EP-27 provide good baseline data prior to any construction of a marina. The data also show changes within the caprock aquifer that cannot be picked up by monthly sampling.
Weekly Chloride, Head, Pumpage, & Ocean Level @ EP-27 (Well No. 1902-01)
February 17, 1998

Michael Wilson, Chairman,
and Members of the Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Dear Chair Wilson and Commissioners:

On May 14, 1997, the Commission on Water Resource Management (Commission) granted Water Use Permit No. 347 which authorizes HASEKO (Ewa), Inc. to withdraw 1.5 mgd of nonpotable water from the Ewa Caprock Aquifer for golf course and landscape irrigation and construction dust control. At the same time, an existing water use permit (WUP No. 192) was modified to authorize withdrawal of 1.8 mgd from the Ewa Caprock for agricultural uses.

The purpose of this letter is severalfold: (1) To provide an update on the status of the project. (2) To correct errors in monthly usage reports that had been submitted for the months of November and December, 1997, and for January, 1998. (3) To provide a status report on the use of reclaimed wastewater as an alternative nonpotable water resource. (4) To report a transfer of land from HASEKO (Ewa), Inc. to HASEKO Homes, Inc.

Project Status. Ocean Pointe was formerly known as the Ewa Marina Community Development. Since the above-referenced water use permits were issued last May, there has been significant visible progress on the project. Following a groundbreaking ceremony in October, 1997, construction commenced in November on the first residential “cluster” component.

As we had reported in an October 24, 1997 letter to the Commission’s Deputy Director, the elevation of the Cluster site must be raised, approximately 10 feet in some areas, in accordance with mass grading plans approved by the City Department of Public Works. The approximately 1.2 million cubic yards of fill material needed for this purpose is being excavated from the marina footprint.
Thus, while the Cluster development is limited to 92.66 acres on the northeastern section of the property, construction activity is occurring over a much larger area.

Because there is yet no decision on HASEKO’s water use permit application for the marina, excavation for fill material has been confined to elevations above the water table. This limitation on depth of excavation has meant a greater expanse of excavated area. In turn, this has resulted in higher water requirements for dust control. Water for dust control is used on approximately 90 acres of the Cluster development site, approximately 40 acres of the excavation site, and another approximately 40 acres of roadways to and from the construction sites.

The dry windy weather has made constant watering a necessity. To date, HASEKO has not received any complaints from its neighbors about fugitive dust.

In applying for WUP No. 347, we had provided the Commission with a schedule of the project’s nonpotable water needs for the period October 1997 to July 1998. Attached as Exhibit A is an updated schedule. The significant changes are: 1) Construction activity began a month later than originally anticipated, thus, most of the remainder of the schedule is set back by one month. 2) As noted above, water requirements for dust control have been higher than originally anticipated. 3) At this point it does not appear that HASEKO will obtain the necessary permits to begin golf course construction prior to July 1998.

**Water Usage Reports.** Using water for dust control began with the onset of construction in November, 1997. Our water usage reports, however, continued to report all water usage from EP-27 as being for agricultural purposes. This is erroneous, and we have enclosed corrected reports for the months of November and December, 1997 and for January, 1998.

Please note that the amounts reported for agricultural and urban uses are estimates. The uses are not separately metered; thus we are unable to report on the precise amounts withdrawn for each type of use. Given the vast acreages that are involved and the fact that the locations of use for both agricultural and construction activities shift from time to time, it is impractical to install separate meters. In fact, both agricultural and construction uses currently utilize the same transmission lines and spigots.

We have estimated water usage for construction activity by calculations based on pipe size and hours of use for areas watered directly off EP-27 transmission lines and by the average number of water truck trips per week. The remainder is assumed to be agricultural use. The amount attributed to agricultural use coincides with amounts being pumped from EP-27 prior to
the commencement of construction, taking into account the increase in agricultural acreage that is being irrigated.

We apologize for not having done these calculations for the water usage reports for the past three months. We have instructed our consultant, Gary Howard, who submits these reports to the Commission, to hereafter provide separate estimates for each of the permits.

**Reclaimed Water.** A special condition to WUP No. 347 requires HASEKO “to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).”

Long before this special condition was imposed HASEKO had been working with the City and others for the development and use of reclaimed effluent from the Honolulu Wastewater Treatment Plant. Last year, HASEKO successfully supported an amendment to the Ewa Development Plan public facilities map to include a pipeline for reclaimed water extending from the wastewater treatment plant to the Ocean Pointe property.

Since the condition was imposed, HASEKO has continued to meet with DWM, both as part of a larger group and individually. To date, however, DWM has not been ready to enter into any agreements with private users of reclaimed water. Complicating matters even further, we understand that very recently DWM has contracted with US Filters to operate the reclamation facility and to be the purveyor of the reclaimed water. Our brief discussion with US Filters personnel in late January indicated that US Filters is still finalizing their contract with the DWM. We will be in contact with US Filters to begin negotiations for the use of reclaimed water when US Filters’ contract with DWM is finalized.

Although HASEKO will continue to use its best efforts to fulfill the special condition, in light of the current circumstances, it appears unlikely that a signed agreement with DWM, or its assigned purveyor, can be consummated by May of this year. We will continue to keep you apprised of our progress in this area.

**Property Transfer.** HASEKO (Ewa), Inc. is a wholly owned subsidiary of HASEKO (Hawaii), Inc. To develop the Cluster residential component of the Ocean Pointe project, HASEKO (Hawaii), Inc. created another wholly owned subsidiary, HASEKO Homes, Inc. HASEKO (Ewa), Inc. transferred to HASEKO Homes, Inc. less than 100 acres of the Ocean Pointe property for this first increment of residential development. The remainder of the 1100 acres of the Ocean Pointe property is retained by HASEKO (Ewa), Inc.
The property transfer did not include a transfer of the water use permit. Instead, HASEKO (Ewa), Inc. has agreed to provide water to HASEKO Homes, Inc. We understand that under these circumstances the provisions of HRS §174C-59 are not applicable.

Please feel free to call Raymond Kanna or me if you have any questions or comments.

Very truly yours,

Nelson W.G. Lee
Executive Vice President

cc: Lenore Nakama
Oshima Chun Fong & Chung
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<tr>
<th>Date</th>
<th>Activity</th>
<th>Cumulative Water Need</th>
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<tbody>
<tr>
<td>November 1997</td>
<td>Begin on-site excavation for fill material</td>
<td>500,000 gpd</td>
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<tr>
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<td>Begin on-site grading for residential project</td>
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<tr>
<td>December 1997</td>
<td>Continue on-site excavation for fill material</td>
<td>500,000 gpd</td>
</tr>
<tr>
<td></td>
<td>Continue on-site grading for residential project</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Begin subdivision and infrastructure development</td>
<td></td>
</tr>
<tr>
<td>January 1998</td>
<td>Continue on-site excavation for fill material</td>
<td>500,000 gpd</td>
</tr>
<tr>
<td></td>
<td>Continue on-site grading for residential project</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continue subdivision and infrastructure development</td>
<td></td>
</tr>
<tr>
<td>February 1998</td>
<td>Continue on-site excavation for fill material</td>
<td>500,000 gpd</td>
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<tr>
<td></td>
<td>Continue on-site grading for residential project</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continue subdivision and infrastructure development, including landscaping roadways</td>
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</tr>
<tr>
<td></td>
<td>Begin model unit construction</td>
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</tr>
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<td>March 1998</td>
<td>Continue on-site excavation for fill material</td>
<td>500,000 gpd</td>
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<td>Continue on-site grading for residential project</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continue subdivision and infrastructure development, including landscaping roadways</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continue model unit construction</td>
<td></td>
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<tr>
<td>April 1998</td>
<td>Continue subdivision and infrastructure development, including landscaping roadways</td>
<td>500,000 gpd</td>
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<td>Begin housing construction</td>
<td></td>
</tr>
<tr>
<td>May 1998</td>
<td>Maintain landscaping</td>
<td>600,000 gpd</td>
</tr>
<tr>
<td></td>
<td>Continue housing construction</td>
<td></td>
</tr>
<tr>
<td>Month</td>
<td>Tasks</td>
<td>Capacity</td>
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<tr>
<td>-----------</td>
<td>-----------------------------------</td>
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</tr>
<tr>
<td>June 1998</td>
<td>Maintain landscaping</td>
<td>600,000 gpd</td>
</tr>
<tr>
<td></td>
<td>Continue housing construction</td>
<td></td>
</tr>
<tr>
<td>July 1998</td>
<td>Maintain landscaping</td>
<td>600,000 gpd</td>
</tr>
<tr>
<td></td>
<td>Continue housing construction</td>
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Month of November, 1997 Week 1

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<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yyyy)</th>
<th>Period End Date (mm/dd/yyyy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non Pumping Water Level (feet)</th>
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<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>10/27/97</td>
<td>11/2/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>994</td>
<td>75.4</td>
<td>2.90'</td>
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<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>10/27/97</td>
<td>11/2/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>994</td>
<td>75.4</td>
<td>2.90'</td>
</tr>
</tbody>
</table>

* Flowmeter, electrical consumption, weir of flume, not metered (estimated).
  - Measurement should be taken while pump is NOT running just prior to a pumping cycle;
  - If measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

** Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by: Gary D. Howard
Title: Consultant
Signature: [Signature]
Date: 2/17/97

Form mgwurf.frm (10/66)
**STATE OF HAWAII**

**COMMISSION ON WATER RESOURCE MANAGEMENT**

**DEPARTMENT OF LAND AND NATURAL RESOURCES**

**MONTHLY GROUND WATER USE REPORT**

Haseko (Ewa) Inc.
820 Millani St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of **November, 1997 Week 2**

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 621, Honolulu HI 96809. For assistance, please call (808) 587-0284.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (D.T.V)</th>
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</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27 (agriculture use)</td>
<td>11/3/97</td>
<td>11/9/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>942</td>
<td>75.9</td>
<td>3.12'</td>
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<tr>
<td>1902-01</td>
<td>EP-27 (urban use)</td>
<td>11/3/97</td>
<td>11/9/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>942</td>
<td>75.9</td>
<td>3.12'</td>
</tr>
</tbody>
</table>

**- Flow meter, electrical consumption, weir of flume, not metered (estimated).**

**- Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.**

**Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):**

**- Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print): Gary D. Howard
Title: Consultant
Signature: [Signature]
Date: 2/17/97

Form mgwurf.frm (10/96)
### Monthly Ground Water Use Report

**Month of November, 1997 Week 3**

**Haseko (Ewa) Inc.**  
820 Mililani St., Ste. 820  
Honolulu, HI 96813

**REVISED**

<table>
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<tr>
<th>State Well No</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (F)</th>
<th>Non-Pumping Water Level (OTW)**</th>
<th>Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.</th>
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</thead>
<tbody>
<tr>
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<td>EP-27 (agriculture use)</td>
<td>11/10/97</td>
<td>11/16/97</td>
<td>1,500,000</td>
<td>Flowmeter</td>
<td>928</td>
<td>74.8</td>
<td>2.94'</td>
<td></td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27 (urban use)</td>
<td>11/10/97</td>
<td>11/16/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>928</td>
<td>74.8</td>
<td>2.94'</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.
- Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

**Title:** Consultant  
**Date:** 2/17/97

Form mgwurf.frm (10/96)
### MONTHLY GROUND WATER USE REPORT

**Haseko (Ewa) Inc.**
820 Millilani St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of **November, 1997** Week 4

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/lt)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DTHW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27 (agriculture use)</td>
<td>11/17/97</td>
<td>11/23/97</td>
<td>650,000</td>
<td>Flowmeter</td>
<td>917</td>
<td>74.3</td>
<td>3.13'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27 (urban use)</td>
<td>11/17/97</td>
<td>11/23/97</td>
<td>350,000</td>
<td>Flowmeter</td>
<td>917</td>
<td>74.3</td>
<td>3.13'</td>
</tr>
</tbody>
</table>

**Flow meter, electrical consumption, weir of flume, not metered (estimated).**
- Measurement should be taken while pump is NOT running just prior to a pumping cycle;
  If measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

**Attitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print) **Gary D. Howard**

Title **Consultant**

Signature  

Date **2/17/97**

Form mgwurfrm (10/96)
## MONTHLY GROUND WATER USE REPORT

**Haseko (Ewa) Inc.**  
820 Mililani St., Ste. 820  
Honolulu, HI 96813

**REVISED**  
Month of **November, 1997 Week 5**

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 621, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yyyy)</th>
<th>Period End Date (mm/dd/yyyy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (BTW)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/24/97</td>
<td>11/30/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>73.8</td>
<td>73.8</td>
<td>2.92'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/24/97</td>
<td>11/30/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>73.8</td>
<td>73.8</td>
<td>2.92'</td>
</tr>
</tbody>
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Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc...):

**Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print): Gary D. Howard  
Title: Consultant  
Signature: [signature]  
Date: 2/15/97  
Form mgwur.frm (10/96)
## Monthly Ground Water Use Report

**Haseko (Ewa) Inc.**  
820 Mililani St., Ste. 820  
Honolulu, HI 96813  

**REVISED**  
Month of December, 1997 Week 1

<table>
<thead>
<tr>
<th>State/Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (O.F.W.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/1/97</td>
<td>12/7/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>888</td>
<td>75.9</td>
<td>3.05'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/1/97</td>
<td>12/7/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>888</td>
<td>75.9</td>
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Submitted by (name) Gary D. Howard  
Title Consultant  
Signature  
Date 2/17/98  

Form mgwater.frm (10/96)
MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Millilani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of December, 1997  Week 2

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (FT)</th>
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</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27 (agriculture use)</td>
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<td>12/14/97</td>
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<td>Flowmeter</td>
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<tr>
<td>1902-01</td>
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<td>12/14/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>864</td>
<td>73.0</td>
<td>3.03'</td>
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Submitted by (print): Gary D. Howard  
Title: Consultant  
Signature: [Signature]  
Date: 2/17/98  
Form mgwurufm (10/96)
### MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of December, 1997 Week 3

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp (°F)</th>
<th>Non-Pumping Water Level (OWL)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/15/97</td>
<td>12/21/97</td>
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<td>Flowmeter</td>
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<tr>
<td>1902-01</td>
<td>EP-27</td>
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<td>12/21/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>877</td>
<td>75.6</td>
<td>3.12'</td>
</tr>
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Submitted by (print) Gary D. Howard

Title Consultant

Signature [Signature]

Date 2/17/98

Form mgwurlem (10/96)
**STATE OF HAWAII**
COMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES

MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Millani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of December, 1997 Week 4

<table>
<thead>
<tr>
<th>State/Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DWT)**</th>
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<tbody>
<tr>
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<td>12/22/97</td>
<td>12/28/97</td>
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<td>3.10'</td>
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<tr>
<td>1902-01</td>
<td>EP-27 (urban use)</td>
<td>12/22/97</td>
<td>12/28/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>836</td>
<td>75.4</td>
<td>3.10'</td>
</tr>
</tbody>
</table>

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Submitted by (print) Gary D. Howard
Title Consultant
Signature
Date 2/17/98

Form mgwurf.frm (10/96)
## STATE OF HAWAI'I

COMMISSION ON WATER RESOURCE MANAGEMENT

DEPARTMENT OF LAND AND NATURAL RESOURCES

MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of January, 1998 Week 1

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 921, Honolulu, HI 98809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State/Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
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<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/29/97</td>
<td>1/4/98</td>
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<td>853</td>
<td>75.9</td>
<td>3.07</td>
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<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/29/97</td>
<td>1/4/98</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>853</td>
<td>75.9</td>
<td>3.07</td>
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Submitted by (print) Gary D. Howard

Title Consultant

Signature

Date 2/17/98

Form mgwurt frm (10/96)
## MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.  
820 Mililani St., Ste. 820  
Honolulu, HI 96813

**REVISED**

Month of **January, 1998**  **Week 2**

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<th>State Well No.</th>
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<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (OTW)</th>
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</thead>
<tbody>
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<td>1902-01</td>
<td>EP-27 (agriculture use)</td>
<td>1/5/98</td>
<td>1/11/98</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>850</td>
<td>75.6</td>
<td>3.24'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27 (urban use)</td>
<td>1/5/98</td>
<td>1/11/98</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>850</td>
<td>75.6</td>
<td>3.24'</td>
</tr>
</tbody>
</table>

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---

Submitted by (print): Gary D. Howard  
Title: Consultant  
Signature:  
Date: 2/17/98
MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of January 1998, Week 3

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<tr>
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<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
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<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Driving Water Level (DTW Water)</th>
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</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/12/98</td>
<td>1/18/98</td>
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<td>855</td>
<td>75.2</td>
<td>3.24'</td>
</tr>
<tr>
<td></td>
<td>(agriculture use)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/12/98</td>
<td>1/18/98</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>855</td>
<td>75.2</td>
<td>3.24'</td>
</tr>
<tr>
<td></td>
<td>(urban use)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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Submitted by (print) Gary D. Howard
Title Consultant
Signature
Date 2/17/98

Form mgwurt.frm (10/96)
## Monthly Ground Water Use Report

**Revised**

Month of **January, 1998**  **Week 4**

**Haseko (Ewa) Inc.**
820 Mililani St., Ste. 820
Honolulu, HI 96813

### INSTRUCTIONS:
Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 261, Honolulu HI 96809. For assistance, please call (808) 587-0264.

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<th>State/Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Max Pumping Water Level (FTW)</th>
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<td>1902-01</td>
<td>EP-27</td>
<td>1/19/98</td>
<td>1/25/98</td>
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<td>866</td>
<td>76.8</td>
<td>3.30'</td>
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<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/19/98</td>
<td>1/25/98</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>866</td>
<td>76.8</td>
<td>3.30'</td>
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Submitted by (print) **Gary D. Howard**

Title **Consultant**

Signature **[Signature]**

Date **2/17/98**
October 24, 1997

Ms. Rae Loui  
Deputy Director  
Commission on Water Resource Management  
Kalanimoku Building  
1151 Punchbowl Street  
Honolulu, Hawaii 96813

RE: Ewa Marina Community Development: Cut and Fill Activity

Dear Ms. Loui:

Components of the Ewa Marina Community project other than the marina have progressed to a point where physical construction activity at the site will commence before the end of this year. Because the on-site activity will be significant, we would like to apprise you of the current status of the Ewa Marina Community Development project and the construction activities that will be taking place over the next several months.

**Initial Residential Phase**

Construction of the Ewa Marina Community Development will commence with a residential "cluster" component located on 92.66 acres on the northeastern section of the Ewa Marina property. The attached Exhibit A depicts the location of the Cluster project identified as Area 1.

Initially, the elevation of the Cluster site must be raised, approximately 10 feet in some areas, in accordance with mass grading plans approved by the City Department of Public Works. Approximately 1.2 million cubic yards (CY) of fill material is needed for this purpose.
Cut and Fill

To obtain the fill material needed to raise the elevation of the Cluster site, approximately 1.5 million CY of material will be excavated from other areas within the Ewa Marina site. As noted in the Environmental Impact Statement for the project, prepared in April 1992 by Wilson Okamoto & Associates, Inc. (EIS), obtaining fill material onsite will minimize construction traffic and, thereby, vehicle exhaust and emissions.

Initially, fill material will be obtained from grading portions of the marina footprint. The “borrow” locations designated on Exhibit A are the locations to be graded and from which fill material will be obtained. Assuming the marina is eventually constructed, this area will ultimately be excavated. Even if the marina is not constructed\(^1\), a portion of the area will have to be graded and the elevation lowered to accommodate regional drainage needs.

Excavations may be as deep as 9 feet. Inasmuch as the current elevation of the marina footprint averages approximately +12.0 feet, elevations may be lowered to +3.0 feet. All of the excavation, however, will be confined to elevations above the water table.

The portions of the marina footprint that will be graded in this initial phase all lie more than 60 feet inland of the shoreline. No construction activity will take place at the shoreline or seaward of the shoreline.

Grading and excavating fill material will be timed to coincide with filling, grading, and construction of the Cluster project to minimize stockpiling of fill material, and, thereby, minimize fugitive dust impacts of construction. (See EIS, Page VI-2).

Water Use

Upon commencement of the cut and fill activity, nonpotable caprock water will be used for dust control and other construction purposes in accordance with the interim water use permit granted by the Water Commission earlier this year.

---

\(^1\) As the water use permit application for the construction of the marina is still pending before the Commission on Water Resource Management, it is still unknown whether or not the marina will be constructed. HASEKO, therefore, has developed alternative (with and without marina scenarios) infrastructure plans in order to keep the development processing active.
In hearings before the Water Commission on the allocation of caprock water for Ewa Marina’s urban irrigation needs, HASEKO had represented that construction on the initial residential phase would begin in October, 1997. Construction is now scheduled to begin in November.

Pursuant to conditions attached to the interim water use permit, HASEKO will submit to the Commission the required pumping and chloride data. Additionally, we will continue to keep the Commission apprised of the Project’s significant activities.

Please feel free to call me if you have any questions or comments.

Very truly yours,

Vicki Gaynor
Manager of Community and Government Affairs

Attachment

Exhibit A, Map Showing Approximate Location of Activities
MISSION ON WATER RESOURCE MANAGEMENT

FROM: 
DATE: 8/18 
SUSPENSE DATE: 

TO: 
INIT. 
TO: 
INIT. 
FOR: 
PLEASE: 

BAUER, G. 
CHING, F. 
FUJII, N. 
HARDY, R. 
HIGA, D. 
HIRANO, E. 
ICE, C. 
IMATA, R. 
JINNAI, R. 
KUNIMURA, I. 
LOUI, R. 
NAKAMA, L. 
NAKANO, D. 
OHYE, M. 
SAKODA, E. 
SUBIA, S. 
SWANSON, S. 
UWAIN, J. 
YODA, K. 

Approval Signature Information 
See Me 
Review & Comment 
Take Action 
Type Draft 
Type Final 
File 
Xerox copies

6pm comments on text?

1. CL approved to stabilize.
2. To determine T in 5P2728 seed database from loggain. Will send diskette in 1 1/2 hrs.
3. No attempt to pull out total influence in 166 wells. Not planning to not required pumped at ~3.5 mgd for 96 hours. Chlorides stabilised ~9 ppm.
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani Street, Suite 810  
Honolulu, HI 96813  

Dear Mr. Lee:  

Thank you for submitting the EP-27 Pumping Test Data Report, dated August, 1997, in compliance with the May 14, 1997 action by Commission on Water Resource Management. The results of the pumping test show that the chlorides in the well stabilized at 900 ppm after being pumped at 3.5 million gallons per day for 96 hours.

As was discussed during an August 25, 1997 telephone conversation with Mr. Raymond Kanna, we will look forward to receiving the datafile on diskette that was used to construct Figure 9 in the report (Quattro Pro or Lotus format). This information will be used to determine the transmissivity of the caprock in the vicinity of your well.

If you have any questions, please contact Glenn Bauer at 587-0263.

Sincerely,

RAE M. LOUI  
Deputy Director

LN:ss
Mr. Kenneth E. Sprague, Director  
Department of Wastewater Management  
City & County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Sprague:

Ground Water Use Permit No. 347  
for Haseko Well No. 1 (Well No. 1902-01)  
Puuloa Ground Water Management Area, Oahu

Haseko recently received an interim Water Use Permit for Well No. 1902-01 for Puuloa Ground Water Management Area for use of 1,500 mgd. A condition to this permit requires Haseko to use reclaim water when available.

We would like to initiate discussions with your Department to explore the current status of your reclaim water program. Haseko has been an advocate and supporter of reclaimed water and we look forward to the opportunity to discuss this matter in detail with your staff.

Could you please let us know who is coordinating your reclaim water program? I will have Mr. Raymond Kanna of my office arrange for a mutually convenient meeting date.

Sincerely,

Nelson W.G. Lee  
Executive Vice President

Enclosure: Letter/Permit dated 5/30/97 from CWRM-SS

cc: Mr. Michael D. Wilson, Chairperson  
State Department of Land and Natural Resources  
Commission on Water Resource Management
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Approval of Water Use Permit for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu

This letter transmits your water use permit for Haseko Well No. 1 (Well No. 1902-01) for use of 1,500 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. The duration of the interim permit shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use of water supply or water quality occurs.

b. Require adherence to the chloride sampling protocol (attached) and the submittal of weekly chloride data, as may be amended by the Commission staff.

c. Require adherence to the Conservation Conditions (attached).

d. Require the permittee to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).

Enclosed with this letter of approval are the following:

1. Your water use permit

2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

MICHAEL D. WILSON
Chairperson

Attachments
### GROUND WATER USE PERMIT

**WUP NO. 347**

#### PERMITTEE

<table>
<thead>
<tr>
<th>Applicant/Water User</th>
<th>Landowner of Source</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Well Name</td>
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2. The right to use ground water is a shared use right.

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   a. Can be accommodated with the available water source;
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5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

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Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

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12. This permit shall be subject to the Commission's periodic review of the PUUOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUUOA Aquifer System, or relevant modified aquifer(s), is reduced.
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Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

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15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-52 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

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20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

---

Michael D. Wilson, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: Ken N. Lee, Exec. V.P.  Date: 7/1/97

Printed Name: Ken N. Lee  Firm or Title: Haseko (Ewa) Inc.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
July 7, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Approval of Water Permit Well No. 1902-01 (WUP #347)
Puuloa Ground Water Management Area, Oahu

Dear Sir:

Haseko encloses for your records, an executed copy of our Ground Water Use Permit WUP No. 347. A copy will be forwarded to you under a separate cover.

If you have any questions with regards to these matters, please contact me at 536-3771 ext. 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President

Enclosure
# GROUND WATER USE PERMIT

**WUP NO. 347**

## PERMITTEE

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I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: [Signature]
Date: 7/7/97

Printed Name: Nelson W.G. Lee
Firm or Title: Haseko (Ewa), Inc.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.
July 7, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii  96809

Approval of Water Permit Well No. 1902-01 (WUP #192)
Puuloa Ground Water Management Area, Oahu

Gentlemen:

Haseko encloses for your records, an executed copy of our Ground Water Use Permit WUP No. 192. A report of a pump test completed on June 2, 1997 is currently being prepared by our consultant, Camp Dresser and McKee. A copy will be forwarded to you under a separate cover.

If you have any questions with regards to these matters, please contact me at 536-3771 ext 225.

Sincerely,

[Nelson W.G. Lee]
Executive Vice President

Enclosure
## GROUND WATER USE PERMIT

**WUP NO. 192**

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Michael D. Wilson, Chair
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: 
Printed Name: Nelson M. Lee
Firm or Title: Haseko (Ewa), Inc.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Approval of Water Use Permit for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu

This letter transmits your water use permit for Haseko Well No. 1 (Well No. 1902-01) for use of 1,500 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission’s approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. The duration of the interim permit shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use of water supply or water quality occurs.

b. Require adherence to the chloride sampling protocol (attached) and the submittal of weekly chloride data, as may be amended by the Commission staff.

c. Require adherence to the Conservation Conditions (attached).

d. Require the permittee to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

MICHAEL D. WILSON
Chairperson
GROUND WATER USE PERMIT
WUP NO. 347

PERMITTEE

<table>
<thead>
<tr>
<th>Applicant/Water User</th>
<th>Landowner of Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>HASEKO (EWA), INC.</td>
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</tr>
<tr>
<td>820 MILEANI ST., SUITE 810</td>
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</tr>
<tr>
<td>HONOLULU, HI 96813</td>
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PERMITTED SOURCE INFORMATION

<table>
<thead>
<tr>
<th>Island</th>
<th>OAHU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Management Area</td>
<td>PUUOIA</td>
</tr>
<tr>
<td>Aquifer Sector</td>
<td>EWA CAPROCK</td>
</tr>
<tr>
<td>Aquifer System</td>
<td>PUUOIA</td>
</tr>
<tr>
<td>System Sustainable Yield</td>
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<tr>
<td>Well Name</td>
<td>HASEKO WELL NO. 1</td>
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<td>State Well No.</td>
<td>1902-01</td>
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PERMITTED USE INFORMATION

<table>
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<tr>
<th>Reasonable beneficial use</th>
<th>GOLF COURSE, ROADWAY, &amp; MAINTENANCE IRRIGATION, DUST CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>1.500 mgd</td>
</tr>
<tr>
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</tr>
<tr>
<td>Location of water use</td>
<td></td>
</tr>
<tr>
<td>TMK #</td>
<td>9-1-12:5-7</td>
</tr>
<tr>
<td>Address</td>
<td>EWA MARINA PROJECT</td>
</tr>
<tr>
<td>State land use classification</td>
<td>URBAN</td>
</tr>
<tr>
<td>County zoning classification</td>
<td>P-2, A-1, R-5</td>
</tr>
</tbody>
</table>

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ___________________________ Date: ______________
Printed Name: ___________________________ Firm or Title: ___________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
Dear Mr. Lee:

Modification of Water Use Permit for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu

This letter transmits your modified water use permit for EP 27 (Well No. 1902-01) for use of 1.800 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. Standard Condition 18 for interim water use permits shall not apply.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

In addition, the Commission is requiring you to conduct a pump test by June 14, 1997 to confirm that the source can sustain withdrawals at the modified permitted amount without exceeding 1,000 mg/l of chloride. The Commission has delegated the authority to approve or modify the proposed pump test procedure to the Commission staff.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

Michael D. Wilson
Chairperson
GROUND WATER USE PERMIT
WUP NO. 192

PERMITTEE

Applicant/Water User: HASEKO (EWA), INC.
Address: 820 MILILANI ST., SUITE 810
          HONOLULU, HI 96813

Landowner of Source
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<td>Water Mgmt</td>
<td>PUULOA</td>
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<tr>
<td>Area</td>
<td>EWA CAPROCK</td>
</tr>
<tr>
<td>Aquifer</td>
<td>PUULOA</td>
</tr>
<tr>
<td>Sector</td>
<td>NA</td>
</tr>
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<td>System</td>
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<td>System</td>
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<td>Sustainable</td>
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Reasonable beneficial use: AGRICULTURE
Withdrawal (12 month moving ave.): 1.800 mgd
Chloride Cap: 1,000 mg/l
Location of water use
TMK #: OSCO FIELDS 71.84.86.88.(POR)91
Address: EWA, OAHU
State land use classification: URBAN
County zoning classification: P-2, RESORT, R-5, B-2, A-1, A-2

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I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: _______________________________ Date: __________________

Printed Name: _______________________________ Firm or Title: _______________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.
Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas which are important for the maintenance of streams and the replenishment of aquifers.

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

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

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

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

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

[ ] We recommend that no development take place affecting highly erodible slopes which drain into streams within or adjacent to the project.

[ ] If the proposed project diverts additional water from streams or if new or modified stream diversions are planned, the project may need to obtain a stream diversion works permit and petition to amend the interim instream flow standard for the affected stream(s).

[ ] Based on the information provided, it appears that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

[ ] Based on the information provided, it does not appear that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

[ ] An amendment to the instream flow standard from the CWRM would be required before any streamwater is diverted.

[ ] Any new development that is permitted along a stream that is not yet channelized should be based on the express condition that no streams will be channelized to prevent flooding of the development. Development in the open floodplain should not be allowed; other economic uses of the floodplain should be encouraged.

[X] OTHER:

We understand that the City is requiring dual water lines to service new developments in the Ewa area. The application does not describe non-potable water service to the project area. Haseko (Ewa), Inc. (Haseko) has applied and received interim approval for nonpotable ground water from the Ewa Caprock Aquifer for golf course, landscape, and maintenance irrigation and for dust control on fallow areas formerly in sugarcane. This interim water use permit expired on July 12, 1995. The Commission extended the duration of the permit pending a decision on Haseko’s request for a new water use permit.

Groundwater in the Ewa Caprock Aquifer is expected to become more saline as the return irrigation recharge from Oahu Sugar Co.’s irrigation practices has ceased. We are encouraging the use of reclaimed water to serve nonpotable needs in Ewa when that resource becomes available in 1998.

With regard to the Ewa Marina project, the water use permit application to excavate the marina is in a contested case hearing. Closing arguments will be heard on February 25, 1997. A decision on the application is expected soon thereafter.

If there are any questions, please contact Lenore Nakama at 587-0218.
MEMORANDUM

TO: Division of Aquatic Resources
   Historic Preservation Division
   Division of State Parks
   Commission on Water Resource Management
   Division of Forestry and Wildlife
   Division of Conservation and Resources Enforcement
   Division of Boating and Ocean Recreation
   Land Division - Planning & Technical Services, Oahu District Land Office,
   Engineering Branch

FROM: Dean Y. Uchida, Administrator

SUBJECT: Request for Comments - Proposed Cluster Housing Application No. 96/CL-1 - Ewa
         Marina (Area 1), Ewa, Oahu, Tax Map Key: 9-1-11:7 and 9-1-12:5

Please review the attached:

( ) DRAFT SUPPLEMENTAL EIS  ( ) SMA APPLICATION
( ) DRAFT EIS PREPARATION NOTICE  ( ) STATE CLEARINGHOUSE REVIEW
( ) ENVIRONMENT ASSESSMENT  (X) PROPOSED CLUSTER HOUSING APPLICATION

and submit your comments within the time requested above. If you wish to review the original
application and attachments, please contact Patti Miyashiro at 587-0430.

If no response is received by the suspense date, we will assume there are not comments.

Attachment(s)

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

Signed ____________________________
Date: ____________________________
APPLICATION FOR CLUSTER DEVELOPMENT
OF THE
CLUSTER-HOUSING DEVELOPMENT,
EWA MARINA - AREA I

APPLICANT:
HASEKO (EWA), INC.

DECEMBER 16, 1996
CITY AND COUNTY OF HONOLULU
DEPARTMENT OF LAND UTILIZATION
660 South King Street, 7th Floor
Honolulu, Hawaii 96813

DLU MASTER APPLICATION FORM

Additional data, drawing/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing." PLEASE ASK FOR THESE INSTRUCTIONS.

All specified materials and fees must accompany this form; incomplete applications could delay processing. You are encouraged to consult with department staff in completing the application. Please call the appropriate phone number given in the "Instructions for Filling" sheet.

PERMIT REQUESTED (Check one or more as appropriate):

- Agricultural Cluster
- Cluster Housing
- Country Cluster
- Conditional Use Permits: Type 1 □ Type 2
- Existing Use
- Flood Hazard Variance
- Special Management Area Permit/Assessment
- State Special Use Permit
- Subdivision
- Sunlight Reflection
- Variance from LEO Sec./Sect.

Waiver (public use/utilities)
Zero Lot Line
Zone Change, From _______________ to _______________
Zoning Adjustment, LEO Sec./Sect.

TAX MAP KEY(ES):
Portion of 9-1-012:7 and portion of 9-1-012:5
LOT AREA: __________ Acres
ZONING DISTRICT: _______________ STATE LAND USE DISTRICT: _______________

STREET ADDRESS/LOCATION OF PROPERTY: Ewa Beach

RECORDED FEE OWNER:
Name: HASEKO (Ewa), Inc.
Mailing Address: 820 Milliani Street Suite 820
Honolulu, HI 96813
Phone Number: (808) 536-3771
Signature: [Signature]

APPLICANT: HASEKO (Ewa), Inc.
Name: [Name]
Mailing Address: 820 Milliani Street Suite 820
Honolulu, HI 96813
Phone Number: (808) 536-3771
Signature: [Signature]

PRESENT USE OF PROPERTY/BUILDING: Vacant

AUTHORIZED AGENT/CONTACT PERSON:
Name: Paul Jordan
Mailing Address: 820 Milliani Street Suite 820
Honolulu, HI 96813
Phone Number: (808) 536-3771
Signature: [Signature]

PROJECT NAME or unit: Ewa Marina-Area I

PROJECT PROPOSAL (Briefly describe the proposed activity or project):
Application for cluster housing development - Ewa Marina-Area I

FOR DEPARTMENT USE ONLY
Submitted fee amount: $__________
Date Application Accepted: ____________ Accepted By: ____________
Date of Public Hearing: ____________
- Approved
- Approved with conditions indicated below
- Denied for reason(s) given below
- Exempt project

FILE NO. ____________

THIS COPY, WHEN SIGNED BELOW, IS NOTIFICATION OF THE ACTION TAKEN.

Signature: ____________ Date: ____________

The above approval does not constitute approval of any other required permits, such as building permits.
II. INTRODUCTION

HASEKO (Ewa), Inc. (HASEKO or Applicant) is the owner and developer of the Ewa Marina Community Development (Ewa Marina) located in Ewa Beach, Oahu, Hawaii.

This application for a cluster housing development is submitted pursuant to Article 6, Chapter 21, Revised Ordinances of Honolulu, 1978, as amended (ROH). It is prepared in conformance with the City and County of Honolulu (City) Department of Land Utilization's (DLU) Instructions for Filing a Cluster - Housing Development and the City's Cluster/PD-H Guidebook.

By this application, Applicant seeks to develop the initial residential phase of Ewa Marina as a cluster housing project, consisting of both single and multi-family dwellings. The cluster housing project will be called the "Cluster-Housing Development, Ewa Marina - Area I" and will provide 835 housing units on approximately 92.66 acres. (See Exhibit A). The cluster housing project consist of four (4) sub-areas, which are identified as Areas IA through ID. (See Exhibit B). The overall cluster housing project is referred to in this application as the "Cluster Project".

The Cluster Project incorporates certain "neo-traditional" town planning principles. Because cluster development allows development of sites which would otherwise be difficult to develop under current LUO provisions and subdivision standards, the Cluster Project will include neo-traditional features such as a mix of housing types, alleyways, and a pedestrian friendly network of gridded streets and walkways. Moreover, notwithstanding the zoning restrictions which prohibit retail uses within the Cluster Project, some of the desired commercial uses under neo-traditional principles, i.e., a town center, could be provided on the B-2 zoned parcel located immediately adjacent to the Cluster Project.

Applicant will also be filing an application for the bulk subdivision of the Cluster Project property and the subdivision of the single family dwelling lots within the Cluster Project to be processed concurrently with this cluster application.
III. DESCRIPTION OF EWA MARINA COMMUNITY DEVELOPMENT

A. Brief Overview of Ewa Marina Community Development

Ewa Marina is a master-planned mixed-use development project, which will be developed on approximately 1,110 acres of land and will be a part of the secondary urban center of Kapolei.

Consistent with the concept of Oahu’s secondary urban center, Ewa Marina will be a harmoniously integrated residential, recreational and commercial community where residents can live, work and play.

The residential component of Ewa Marina will consist of several residential neighborhoods and will include single-family homes, mid-rise apartments, and townhouses providing a total of approximately 4,850 housing units.

The focal point of Ewa Marina will be a full service man-made marina approved for up to 1,400 boat slips and various marina-support facilities. Also serving the recreational needs of the region will be the Ewa Marina golf course and a district park located at the northeast entrance to Ewa Marina.

Adjoining the western section of the marina will be a retail/commercial center, visitor accommodations, and various recreational facilities and opportunities. The mixed-used commercial area will serve as a major employment and recreation center for residents of Oahu, particularly residents of the Ewa region.

B. Brief Overview of Residential Component of Ewa Marina

As previously indicated, the residential component of Ewa Marina will provide a total of approximately 4,850 housing units, including single-family homes, mid-rise apartments, and townhouses. The residential component will be developed in phases, with each phase being identified as a separate “area”.

As an alternative to the “suburban sprawl” created under modern suburban designs and landscapes, urban planning has seen a resurgence of interest in developing old-style “communities” which incorporate features of the traditional neighborhood or village. These “neo-traditional” neighborhoods incorporate planning principles and concepts that seek to integrate various age and economic classes within the same neighborhood, reduce the importance of the automobile, encourage walking and interaction among its residents, and generally provide a sense of community.

Applicant has prepared a conceptual plan for the residential component of Ewa Marina, which incorporates various neo-traditional features. However, several of
the neo-traditional features envisioned under the conceptual plan are not permitted under the existing City Land Use Ordinance (LUO).

The Cluster Project, which is the subject of this application, is the initial residential phase of Ewa Marina and incorporates certain neo-traditional features that are permitted under the current LUO such as: providing a mixture of housing sizes and types within the same neighborhood to (e.g., a mixing of single family dwellings with townhouses and other multi-family dwellings); clustering of dwellings on smaller lots to allow for more efficient and useable open space; providing a pedestrian oriented network of gridded streets, sidewalks and pedestrian pathways to encourage walking and socializing and reduce dependence on the automobile; placing garages at the rear of the lots accessible by private service alleys, and increasing streetscaping in the front of the dwellings.

Because of limitations under the LUO, the Cluster Project does not include commercial uses, which is a primary feature of neo-traditional neighborhoods. This neo-traditional concept of mixing uses within the same neighborhood seeks to provide a community in which residents of all ages can live, work and play. Therefore, neo-traditional principles call for residences, shops, workplaces and civic buildings or town centers to all be located within close proximity. For example, neighborhood grocery stores, post offices, and eating establishments are commonly found strategically located among residences in neo-traditional neighborhoods. This mixing of uses not only further encourages walking and interaction among the residents, but by reducing the importance of the automobile, all residents, even those that are unable to drive such as children and the elderly, are able to live, work and play -- all within the boundaries of the neighborhood.

Notwithstanding the zoning restrictions which prohibit commercial uses within the Cluster Project, Applicant plans to provide some of the desired commercial uses on a commercially zoned parcel located within the Ewa Marina project immediately adjacent to the southeastern corner of the Cluster Project. Such commercial uses will be developed as part of a subsequent phase of the Ewa Marina project.

Applicant does not foresee developing all of its proposed 4,850 housing units for Ewa Marina under the neo-traditional concept. However, subject to market conditions, limitations under the current LUO, and future opportunities created by amendments to the LUO, Applicant envisions that subsequent residential phases/areas will include certain other neo-traditional features, such as: the mixing of uses discussed above; making public transportation a viable alternative to the automobile, and providing town centers or civic buildings that reinforce the identity of the neighborhood and provide gathering places for the entire community to engage in social, cultural and other activities.
B. Objectives Of The Design Concept

1. Ewa Marina Design Concept: The objective of the design concept for the overall Ewa Marina project is to create a mixed-use “community” utilizing neo-traditional neighborhood land use planning concepts and principles. The overall design concept for the Ewa Marina and the Cluster Project can be realized by taking advantage of the flexibility offered under the LUO for cluster housing developments.

The design concept for the overall Ewa Marina project incorporates neo-traditional concepts which seek to: encourage social interaction within the neighborhood by mixing uses and housing types and providing town centers and/or civic centers; encourage walking and public transportation and reduce dependence on the automobile; provide for more efficient and usable open space areas by cluster housing on smaller lots; provide a choice of routes through a network of gridded streets.

Ewa Marina will be developed in phases, with the Cluster Project serving as the initial residential phase. The Cluster Project will incorporate certain neo-traditional features to the extent permitted under the LUO and as dictated by the current housing market. Subject to market conditions and limitations of the LUO, subsequent phases will incorporate additional neo-traditional features.

2. Cluster Project Planning Concept: The objective of the planning for the Cluster Project is to meet the following criteria:

a. Create a viable and marketable “first phase” of development that will enable the Cluster Project to successfully lead itself into the future phases of Ewa Marina.

b. Create a site plan that meets the City’s current cluster development zoning and engineering ordinances that govern the property and the planned roadways, and that will support the community’s long term infrastructure needs.

c. Create a mixed-housing development of single-family and multi-family building types that creates a community which integrates residents of various age and economic classes.

d. Create a pedestrian oriented network of sidewalks and pedestrian pathways throughout the community, which encourages walking and reduces dependence on automobiles.
e. Create an efficient and usable network of parks, open space and landscape areas throughout the community, which are connected by a network of pedestrian sidewalks and pathways.

f. Create yard space for all housing types throughout the community, and connect these yards and community open space, landscape areas and parks by a network of pedestrian sidewalks and pathways.

3. Housing Design Concept: The objective of the housing design for the Cluster Project is to meet the following criteria:

a. Create a design that takes advantage of the neo-traditional neighborhood planning approach, the natural attributes of the site, allows for flow-through natural ventilation, provides exterior living spaces, and affords an acceptable level of privacy and security to each unit.

b. Create a mixture of housing sizes and types, including both detached and attached dwelling units, that meets the community’s needs and that range in price from affordable to market rate.

4. Site Development and Infrastructure Concept: The objective of the site development concept is to reduce grading requirements, to allow for efficient design of utility infrastructure and to provide a pedestrian friendly layout through the use of a gridded network of streets and pedestrian walkways. The use of through streets, secondary alleys and pedestrian walkways provide for greater options in utility locations such as trash pickup and drainage infrastructure, in addition to improving the pedestrian environment.

5. Landscape Design Concept: The objective of the landscape design concept is to create a blending of a tropical oasis theme and the dry outer fringes. Coconut and kiawe trees, or species with similar characteristics, will be planted as accents and theme trees to carry the character indicative of the arid landscape in Ewa Beach. A hierarchy of trees species will be used with zones based on underlying street right of way dimensions. Narrower pavement widths within standard right-of-ways are proposed to further enhance the pedestrian environment by allowing for wider planting strips and street trees.
Cluster Housing Development, Ewa Marina - Area I - Application for Cluster Development

C. Existing Conditions

1. Abutting Land Uses

The Cluster Project is bounded by Fort Weaver Road along its eastern boundary. The southeastern corner of the Cluster Project is abutted by commercial zoning, including the Ewa Beach Shopping Center and an undeveloped B-2 zoned parcel which is also part of the Ewa Marina project. Abutting the southern portion of the Cluster Project is the Ewa Beach Elementary School, which is zoned R-5. The remainder of the Cluster Project is surrounded by the overall Ewa Marina project, which is currently undeveloped.

2. Hazardous Areas

There are no known hazardous areas adjacent to or on the Cluster Project site.

The Federal Emergency Management Agency’s Flood Insurance Rate Map (FIRM) indicates that the lower portion of the overall Ewa Marina (makai of the Cluster Project) is located in Zones A and AE which are designated as special flood hazard areas inundated by the 100-year flood. Base flood elevations have been determined in Zone AE, but not in Zone A. As indicated on the FIRM maps, the flood elevation ranges from elevation 6 to elevation 8.

The Cluster Project is located within Zone D on the FIRM maps. Zone D is designated for areas in which the flood elevations are undetermined.

3. Slope and Topographic Analysis

The Cluster Project site is located within the Ewa Coastal Plain. The property is relatively flat with elevations ranging from 21 feet above mean sea level at the mauka end adjacent to Fort Weaver Road to 12 feet above mean sea level at the makai end adjacent to Ewa Beach Elementary School.

The surface of the site is fairly uniform and slopes at a rate of 0.2% to 1.0%.
4. Soil and Drainage Analysis

Surface Soils

The overall development area for Ewa consists of five soils types as classified by the Soil Conservation Service. The soil type within the Cluster Project is Fill land (Fd), which consists of fill material from dredging, excavation from adjacent uplands, garbage and bagasse and slurry from sugar mills.

Subsurface Condition

The Soils Investigation, Ewa Marina Total Project, dated November 13, 1984, prepared by Dames & Moore, describes the subsurface soils of the Ewa Marina Project, including the Cluster Project, as follows:

In general, the site is underlain by a thin mantle of soil over coral. The coral is exposed in some areas. The upper portion of the mantle, which averages less than 2 feet in thickness, is composed mainly of sandy and clayey silt. In a few cases, sieve analyses indicate that the upper soils are classified as silty sands. A thin layer of silty coralline gravel underlies the upper silt and extends as deep as 4-1/2 feet below the ground surface.

The coral consists principally of in situ reef rock and conglomerate which is hard and strong. Locally, softer and weaker shell rock and dune rock were encountered. However, the areas of softer rock do not appear extensive. Coral consistency is typically erratic and hard rock is often encountered overlying zone of softer materials.

Existing Drainage

Storm runoff generated on-site of the Cluster Project percolates into the soil and eventually reaches the ocean as groundwater. During heavier storms, runoff generally flows toward the ocean.

There is an existing underground drainage system within Fort Weaver Road which is presently accepting a small portion of runoff from the Cluster Project site.

Papipi Road and the adjoining existing residential areas have a limited underground drainage system which is presently accepting a small portion of runoff from the Cluster Project site.
Cluster-Housing Development, Ewa Marina - Area I: Application for Cluster Development

Drainage Studies

The Drainage Master Plan for HASEKO (Ewa), Inc. Cluster-Housing Development Ewa Marina - Area I, dated August 1996, prepared by Gray, Hong, Bills & Associates, Inc., has been prepared in conjunction with the proposed Cluster Project and is consistent and compatible with the Site Drainage Master Plan, dated August 1996, prepared by GMP Associates, Inc.

5. Existing Structures and Uses

There are no existing structures located on the property encompassing the Cluster Project. The property was previously used for sugar cane cultivation. However, it is currently fallow.

6. Desirable Views

The property is generally flat with minor gradient changes and is located approximately 20 feet above sea level. Because of this, there are no discernible views with the exception of the Waianae Mountain ranges to the north of the property.

7. Easements

The Cluster Project site is subject to the easements described below. Copies of the easement documents will be provided upon request.

a. There are five (5) water pipeline easements located within the Cluster Project along Fort Weaver Road. These easements have all been dedicated to the City, and are described in further detail as follows (Land Court Document No. 2237810):

   Easement 1987 for water pipeline and road purposes, as described in Land Court Order No. 92211 and shown on Land Court Map 452.

   Easement 1988 for water pipeline purposes, as described in Land Court Order No. 92211 and shown on Land Court Map 452.

   Easement 2307 for water pipeline purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.
Easement 2308 for water pipeline and road purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.

Easement 2309 for water pipeline purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.

d. A drainage/flowage easement (Easement 2310), is part of the water pipeline easement system described above, and is described in Land Court Order No. 96916 and shown on Land Court Map 503. This easement was dedicated to the City together with the water pipeline easements described above (See Land Court Document No. 2237810). Applicant is considering an alternate drain connection for the water pipelines, which if provided, will allow this easement to be canceled.

c. A temporary utility easement has been granted to Hawaiian Electric Company, Inc. to run power lines across the Ewa Marina project and provide electricity during development of the project. (See Land Court Document Nos. 2284736 and 2284737). The easement and power lines will be relocated to a permanent utility easement to be designated at a later date.

8. Existing Road Widths, Conditions and Ownership of All Access Roads

The Cluster Project site is bounded on the east side by Fort Weaver Road, which is a public 100-foot right-of-way. Fort Weaver Road is fully improved fronting the Cluster Project site and the pavement is in good condition.

9. Existing Public Facilities

Potable Water

Various water facilities, including source, storage and transmission, have been constructed by the Ewa Plain Water Development Corporation (EPWDC). Applicant has contributed its proportionate share of the cost for the improvements. Therefore, water service can be provided to the Cluster Project by connection to the 20-inch line which has been provided off the 36-inch transmission line within Fort Weaver Road. This 20-inch connection line is located at the northeast portion of the Cluster Project site.
Sanitary Sewer

As part of the Ewa Beach Sewers Section I, Improvement District 259, the sizes of various sewer lines in the existing Ewa Beach area were increased to provide sufficient capacity for portions of the Ewa Marina project. The cost for the larger size lines were paid for by the previous developer.

A maximum of 2.4 mgd of sewer flow can be accommodated by the existing 24-inch Ewa Interceptor Sewer at Papipi Road located on the southeast side of the Cluster Project site. This is adequate to handle the entire sewer flow from the Cluster Project site.

The Honouliuli Wastewater Treatment Plant presently has a capacity of 38 million gallons a day (mgd), of which 13 mgd is being upgraded to secondary treatment. According to the Department of Wastewater Management, this should provide enough capacity to cover the overall Ewa Marina project, including the Cluster Project. The improvements for secondary treatment were recently completed.

The Honouliuli Wastewater Treatment Plant is planned for further upgrading to 51 mgd. Construction is scheduled to commence in 1997, with completion in July 1999.

10. Unique Site Conditions

The entire Cluster Project site is extremely flat with little or no gradient changes. This provides the ideal topographic conditions for a neo-traditional development, which seeks to provide a pedestrian friendly project through a network of gridded streets and pedestrian walkways. In contrast, hilly or mountainous sites typically require curvilinear, non-gridded streets to allow reasonable road inclines, but which limit usage by pedestrians.

D. Proposal

1. Dwelling Units

a. Number, Type and Size.

The Cluster Project will provide a total of 835 dwelling units, consisting of 379 single family units, 320 townhouse units, and 136 apartment units. The Cluster Project will also provide a variety of building and unit types, as well as dwellings of various sizes. For example, the Cluster Project will provide three (3) different building
types for the single family units, which will include 3 and 4-bedroom units. The project will also provide five (5) different building types of townhouses, with 2 and 3-bedroom units, and apartments consisting of 2-bedroom units. (See Table D1 on page 15).

The buildings and units within each sub-area of the Cluster Project are described in Table D2. (see pages 16-19)

b. **Sale or Rental Price**

The projected sales prices, which are projected 1997 sales prices and are subject to change depending on market conditions, are as follows:

- Single Family Dwellings: Approx. $250,000 to $350,000
- Townhouses: Approx. $150,000 to $250,000
- Apartments: Based on 80% of median income, adjusted by the U.S. Department of Housing and Urban Development rates and per agreement with the City Department of Housing and Community Development regarding "affordable units"

c. **Form of Ultimate Ownership**

- Single Family Dwellings: Fee Simple
- Townhouses: Fee Simple Condominium
- Apartments: Fee Simple or Rental

d. **Development Schedule**

The projected development schedule for the dwelling units, which is subject to change depending on market conditions, is as follows:

- Year 1: Area IA
- Year 2: Area IB
- Year 3 and beyond: Areas IC and ID

e. **Other Features**

Applicant originally contemplated developing the project as a zero lot line development. However, Applicant subsequently opted to develop the project as a cluster development to provide for "walk around" single family units with 5-foot side and rear setbacks from
the property line. The side yards and building setbacks and heights for the Cluster Project are based on the 10-foot separation of buildings originally proposed for the zero lot line project. The decision to not develop a zero lot line project was also in part due to Applicant's desire to eliminate or minimize potential ownership and property line encroachment disputes.

Concurrent with this cluster application, Applicant will be submitting an application for a bulk lot subdivision of the Cluster Project, and for subdivision of the single family dwelling lots.

* * * * * *
2. Building Design

The proposed buildings have been designed to be compatible with the overall design concept for Ewa Marina. Exterior colors and materials will be harmonious with the existing neighborhood. (See “Ewa Marina Cluster Development Color Scheme” submitted herewith). The orientation of the buildings will take advantage of the views and natural ventilation. The placement of the buildings relative to vehicular lanes and sidewalks will reflect neo-traditional planning concepts and principles and enhance the sense of community.

3. Open Space/Recreation/Landscaping

By incorporating the neo-traditional concept of clustering the dwellings together, the Cluster Project will provide a network of usable open space, parks, and landscape areas, including five (5) park areas, and will be connected by a network of pedestrian sidewalks and pathways. The interconnected street system, another neo-traditional feature, is designed to encourage pedestrian use instead of being a series of high volume one way in and one way out collector streets. As a result, it is expected that greater use will be made of the streets as an open space amenity for the Cluster Project, as opposed to the vehicular dominated corridors found in conventional subdivisions, in which landscaping serves only an aesthetic purpose for drivers and passengers.

Planting strips along the streets will include canopy trees that provide character and shade. These canopy trees are made possible by the Cluster Project’s neo-traditional street layout, which provide for wider planting strips and narrower pavement widths than that which are permitted in conventional subdivisions.

Where possible, the Cluster Project will also incorporate the neo-traditional concept of using different species of street trees as a design element to indicate a street hierarchy based on street widths. In addition, if transplanting proves successful and depending on availability of potable water sources, kiawe trees may be moved from adjacent parcels and utilized. Coconut trees will also be planted as accents and theme trees to emphasize the tropical seaside character of the Ewa Marina project. Large areas of grasses will be planted to provide play fields and picnic areas throughout the open space/parks.

Landscape quantities and area calculations are set forth in detail in Table D3 (see pages 21-23).
The sanitary sewer system for the Cluster Project will be in accordance with the standards of the City Department of Wastewater Management (DWM) and will be dedicated to the City upon completion.

The sewer improvements for the Cluster Project will also be developed in accordance with the sewer master plan for the Ewa Marina project, as approved by DWM.

Electrical, Telephone, CATV & Street Lighting Systems

Underground electrical, telephone, CATV and street lighting systems will be in accordance with the standards of the various utility companies and the City.

Upon completion, the improvements will be dedicated to the applicable public utility commissions.

7. Grading and Drainage

Drainage

Drainage of the Cluster Project can be accomplished with storm runoff flowing to the future marina except for small areas where it is not possible to contain the runoff on-site. These areas include the areas adjacent to Fort Weaver Road, Papiipi Road, the Ewa Beach Shopping Center and the Ewa Beach Elementary School.

The on-site drainage system for the Cluster Project will consist of underground storm drains that will ultimately discharge into the future marina. On-site drainage improvements will be designed to City standards. Drainage systems within public roads and applicable easements will be dedicated to the City. Small inlets and drain pipes within the privately owned alleys will remain private and will connect to the dedicated City storm drainage system.

Until such time that the marina is constructed, the on-site drainage system for the Cluster Project will discharge into a temporary detention/retention basin located makai of the Cluster Project site. The basin will be provided to meet City and NPDES requirements during the interim period until the marina is completed. The basin will be designed per the U.S. Soil Conservation Services method outlined in their Erosion and Sediment Control Guide for Hawaii Manual.
The on-site drainage system for the Cluster Project will be designed in accordance with the drainage master plan for the Cluster Project, as approved by the City Department of Public Works.

Grading

Applicant envisions that fill for the Cluster Project site will consist of materials excavated from proposed cut areas located outside of the Cluster Project site, but within the overall Ewa Marina project site.

The Cluster Project site will be graded to minimize storm runoff from flowing outside of the project limits. Generally, the surrounding areas will be graded to drain towards the future marina, with slopes ranging from 0.5% to 1.0%.

All grading will be done in accordance with the City's grading ordinance.

Erosion Control

A temporary sediment and retention basin located outside of the Cluster Project site will serve as the sediment and retention basin for the Cluster Project during the interim period until the marina is completed.

An erosion control plan will be developed in conjunction with the design phase of the Cluster Project and shall be in accordance with the Soil Erosion Standards and Guidelines of the City Department of Public Works.

Relationship of the Cluster Project to the Neighborhood

The residential character of the Cluster Project is compatible with the existing zoning and character of the existing neighborhood. Clustered units have been located adjacent to the highest intensity use surrounding the site of the commercial and school district.

The neo-traditional neighborhood concept envisioned for the Cluster Project is very compatible with the existing planning for Ewa Beach. Consistent with neo-traditional principles, residents of the Cluster Project would be encouraged to interact with the existing neighborhoods through the pedestrian friendly network of gridded streets and pedestrian pathways, which would connect to the existing commercial areas.

In addition, although commercial uses are not included within the Cluster Project due to LUO restrictions, the overall development concept for Ewa Marina envisions that some of the commercial uses desired under
August 8, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

EP-27 (Well #1902-01)
Water Use Permit #192

Gentlemen:


If you have any questions, please contact Mr. Raymond S. Kanna at 536-3771 ext. 242.

Sincerely,

Nelson W.G. Lee
Executive Vice President

Enclosure
EP-27 Pumping Test
Data Report

August, 1997

Prepared for HASEKO (Ewa) Inc.
by
Camp Dresser & McKee Inc.
10 Cambridge Center
Cambridge, MA 02142
## EP-27 Data Form

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Sampled No Back Flow
C= 3550 T=27.5
Sampled C=3470 T=27.5
Sampled C=3420 T=27.8
EP-27 Pumping Test
Data Report

August, 1997

Prepared for HASEKO (Ewa) Inc.
by
Camp Dresser & McKee Inc.
10 Cambridge Center
Cambridge, MA 02142
Section 1  Introduction

In response to the Commission on Water Resource Management's request of February 21, 1997 a 96-hour pumping test was conducted at well EP-27. This test was conducted to determine the specific capacity and any trend in salinity at EP-27.

EP-27 is a coral/borrow pit with an areal extent of approximately 1000 ft², and a water depth of 5 to 7 feet. Three wells, GC-1, GC-2 and GC-3, were monitored during the pumping test. GC-1 is located approximately 1,900 feet west of EP-27, GC-2 is located 2,500 feet southwest of EP-27, and GC-3 is located 2,900 feet northeast of EP-27. Figure 1 presents the locations of the pumping test well EP-27, and of the three monitoring wells GC-1, GC-2, and GC-3.

Transducers (In-Situ Troll Dataloggers) recorded the water level in EP-27 and three monitoring wells, GC-1, GC-2 and GC-3. Water levels were monitored for 72 hours prior to the pumping test, during the 96 hour pumping test, and for 75 hours following the cessation of pumping. Enclosed with this report is a diskette containing the water level data in spreadsheet format. The water level data refer to the static water level above the pressure transducer at the beginning of each test phase. At the beginning of each phase the static water level is zero, and subsequent water levels are measured above or below this reference. A Stevens Water Level Recorder - Type F was also installed in the EP-27 pool.

The pumping test began at 11:27 AM on Monday, May 26, 1997 and concluded at 12:00 noon on Friday, May 30, 1997. The pumping rate was maintained at approximately 2,400 gallons per minute (gpm). During the pumping test discharge water samples were taken and conductivity and pumpage records were recorded every 4 hours. The conductivity and water temperature in the EP-27 pool were also measured every 4 hours. The measurements in the EP-27 pool were taken at depths of 1 foot (top), 3 feet (mid), and 6 feet (bottom), and at approximately 6 feet laterally from the intake to the pump. The discharge water from the pumping test was pumped through the irrigation system and applied to Haseko property to the east of EP-27.

Section 2  Pre-Test Monitoring

Water levels in the aquifer were monitored for a period of 72 hours prior to the pumping test. This monitoring was designed to evaluate tidal influences in the aquifer, and to evaluate the responses at each of the monitoring wells to the tide cycle. Measurements were made at 6 minute intervals throughout the monitoring period.

Water level measurements taken during the Pre-Test monitoring at pumping well EP-27 and at the three monitoring wells are plotted in Figures 2 through 5. This data can be found in spreadsheet PTEST.XLS on the accompanying diskette. Very similar tidal signals are evident at well EP-27 and monitoring well GC-1. A slightly different tidal signal with greater amplitude is apparent at monitoring well GC-2. This is expected since GC-2 is located closer to the shoreline than is GC-1.

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The Pre-Test water level record at monitoring well GC-3, which is located further inland than the other three wells, was influenced by external factors (the transducer cable was apparently disturbed) during the Pre-Test period and appears to contain some anomalous readings. Since the water level readings at GC-3 are relatively unimportant to the analysis of the pumping test results, these anomalous readings are not considered a problem in the pumping test.

Since EP-27 and GC-1 appear to have very similar tidal signals, and these wells are located approximately the same distance from the shoreline, it was decided to use the GC-1 water level readings to remove the tidal signal from the EP-27 readings during the pumping test. Figure 6 presents the water level readings at EP-27 minus the water level readings at GC-1, during the Pre-Test monitoring. The resultant readings display a very small remaining tidal cycle with an amplitude of approximately 0.015 feet, which is a result of the slightly stronger tidal signal at EP-27.

During the pre-test period the temperature and conductivity in the EP-27 pool were monitored. Conductivity levels during the pre-test period were relatively constant, ranging from 3300 to 3350 microsiemens (μS).

Section 3  Pumping Test

The 96-hour pumping test began at 12:00 noon on May 26th, and the response at EP-27 and the 3 GC wells was recorded. Water level measurements were recorded on a logarithmically increasing time frequency until the interval between readings was 6 minutes, at which time measurements continued at 6 minute intervals until the end of the test. The water level data are presented in the spreadsheet PTEST.XLS on the accompanying diskette, and the pumping rate data are presented in Table 1.

Figures 7 and 8 present the water level at well EP-27 during the 96-hour pump test versus a linear time scale. Figure 7 displays the raw water level data which still include the tidal signal. Figure 8 presents the water level at EP-27 minus the water level at GC-1 during the pumping test. From this figure it is apparent that the pumping test created a drawdown of approximately 0.15 feet at well EP-27. In Figure 9 the adjusted water level at EP-27, during the pumping test is plotted versus a logarithmic time scale. The majority of the drawdown occurs within the first 100 minutes of the pumping test. The specific capacity at EP-27 is calculated to be approximately 15,700 gpm/ft.

Plots of the unadjusted water level at the monitoring wells GC-1, GC-2, and GC-3 during the pumping test are presented in Figures 10, 11 and 12. There is no obvious impact of the pumping at any of these wells, only a continuing tidal signal. As in the pre-test period, the aquifer response to the tide cycle at GC-3 is quite different from that observed at GC-1 and GC-2.

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Section 4 Recovery Period

The pumping was terminated at 12:00 noon on May 30th and the recovery was monitored for 75 hours. The dataloggers were again set to record on a logarithmic scale at the beginning of the recovery period, and then at 6 minute intervals for the remainder of the period. The water level data are contained in spreadsheet PTEST.XLS on the enclosed diskette.

Figures 13 through 16 present water levels at all 4 wells during the recovery period immediately following the conclusion of the pumping test. Again, the only obvious evidence of a recovery from the pumping test is observed at EP-27. Figures 17 and 18 present the water level at EP-27 minus the water level at GC-1, during the recovery period. Figure 17 presents this data versus a linear time scale, and Figure 18 presents the data versus a logarithmic time scale. The majority of the recovery occurs within the first 200 minutes following the conclusion of pumping. After 200 minutes the residual influence of the tidal cycle is observed. Figures 17 and 18 indicate that the water level at EP-27 recovers between 0.12 and 0.15 feet, an amount comparable to the earlier recorded drawdown.

Section 5 Water Quality Data

Water quality samples were collected from the discharge water every 4 hours during the pumping test, and from the EP-27 pool daily during the recovery period. In Figures 19 and 20, conductivity and chloride concentration are plotted versus time. The conductivity data display a smooth increase during time, appearing to stabilize after approximately 3 days of pumping. Conductivity levels declined once the pumping stopped and returned to pre-test levels. Figure 20 presents the measured chloride concentration vs time. During the pumping test chloride values increase from approximately 860 to 900 mg/l. The chloride concentration also appears to stabilize at a value of approximately 900 mg/l. Once pumping stopped the chloride concentration returned to its pre-test value of approximately 860 mg/l. The conductivity data are presented in Table 2, and the chloride data are presented in Table 3.

Conductivity and temperature measurements were also made at three depths in the pool every 4 hours during the pumping test, and daily during the recovery period. Figure 21 presents the conductivity measurements versus time at all three depths in the EP-27 pool. The behavior observed is consistent across the three depths, with the highest levels being noted at the bottom of the pit. The tidal cycle appears to slightly influence the conductivity levels. Such influences are not noted in the pump discharge samples. During the pumping test the conductivity values rise, and appear to stabilize at a value between 3550 and 3600 μS. Once the pumping test stopped the conductivity values declined to pre-test conditions. The data collected from the EP-27 pool is included in the file EP27WQ.XLS which accompanies this report.

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August, 1997
Section 6 Summary

A 96-hour pumping test was conducted at EP-27. This pumping test indicated that an extraction rate of 2,400 gpm can be maintained at EP-27 with approximately 0.15 feet of drawdown. During the pumping test the drawdown at EP-27 occurred over approximately the first 3 hours of the test, with a drawdown of approximately 0.15 feet. The chloride levels measured in the discharge water increased from 860 to 900 mg/l, and stabilized at that level after 3 days of pumping. Water levels and chlorides recovered to pre-test conditions following the test.
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Note: Samples 1-25 from Discharge Water
Samples 26-29 from EP-27 Pool

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Note: Samples 1 - 25 from Discharge Water
Samples 26 - 29 from EP-27 Pool

Table 3
Chloride Measurements During Pumping Test and Recovery Period
Location of Pumping Well EP-27 and Monitoring Wells

96-Hour Pumping Test at EP-27
Figure 2
Water Level at EP-27 During Pre-Test
Figure 3
Water Level at GC-1 During Pre-Test
Figure 4

Water Level at GC-2 During Pre-Test
Figure 5
Water Level at GC-3 During Pre-Test
Figure 6
Adjusted Water Level at EP-27 During Pre-Test
Figure 7
Water Level at EP-27 During Pre-Test
Figure 8
Adjusted Water Level at EP-27 During Pumping Test
Figure 10
Water Level at GC-1 During Pumping Test
Figure 11
Water Level at GC-2 During Pumping Test

CDM Camp Dresser & McKee
GC2DD.XLS
Figure 12
Water Level at GC-3 During Pumping Test
Figure 13

Water Level at EP-27 During Recovery Period

CDM Camp Dresser & McKee
EP27DD.XLS
Figure 14
Water Level at GC-1 During Recovery Period
Figure 15
Water Level at GC-2 During Recovery Period
Figure 16

Water Level at GC-3 During Recovery Period
Figure 17

Adjusted Water Level at EP-27 During Recovery Period
Figure 18
Adjusted Water Level at EP-27 During Recovery Period
Figure 19
Conductivity vs Time

CDM Camp Dresser & McKee

CHLORIDE.XLS
Figure 20
Chloride Concentration vs Time
Figure 21

Conductivity Measurements in the EP-27 Pool
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FILE CLOSED 5-15-03

SEE FOLDER FOR

1901-06, 1902-01, 09 # 11
Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, Hawaii 96813

2. Article Number (Copy from service label)
May 15, 2003

Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

This is in response to your April 25, 2003 letter, requesting administrative modification of Water Use Permit (WUP) Nos. 192 and 347 for EP 27 (Well No. 1902-01) pursuant to Declaratory Ruling No. DEC-ADM97-A1 and administrative modification of the water use permit issued in Contested Case No. CCH-OA96-1 (Marina permit) pursuant to Administrative Rule 13-171-23(b).

The first part of the request by Haseko Ewa, Inc. (HASEKO) is to administratively modify WUP Nos. 192 and 347 by transferring the allocations from EP 27 to a battery of wells consisting of EP 27 and four proposed wells. From the map provided, we have assigned the four proposed wells Well Nos. 1902-09, 10, 11 and 1901-06, going from west to east. We find that HASEKO’s request meets the criteria for administrative modification under DEC-ADM97-A1. Please find attached Well Construction Permit application forms for the four proposed wells.

The second part of HASEKO’s request is to administratively modify Special Conditions (b) and (c) in the Commission on Water Resource Management’s Decision and Order (D&O) in the matter of the Water Use Permit Application for the Ewa Marina Contested Case Hearing (Case No. CCH-OA96-1) pursuant to Administrative Rule 13-171-23(b). In effect, Special Conditions (b) and (c) limit the durations of WUP Nos. 192 and 347 to coincide with the start of marina construction and orders the use of reclaimed water as an alternate nonpotable source upon cancellation of WUP Nos. 192 and 347.

HASEKO is requesting modification of Special Conditions (b) and (c) because marina construction is ready to commence, however, reclaimed water is not available in sufficient supply for HASEKO’s nonpotable needs. We have confirmed with the Board of Water Supply that HASEKO has received only a limited amount of reclaimed water for use at the park site.
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MAY 19 2003

(WUP NO. 650)

Sent To
Mr. Nelson W.G. Lee
820 Mililani St., Ste. 810
Honolulu, HI 96813
RETURN MAIL SERVICES:

1. Place your return address on your mailpiece.
2. Verify your signature on delivery.
3. Insured or Registered Mail.

INTERNATIONAL Mailing:

1. Certified Mail may be combined with First-Class Mail or Priority Mail.
2. Contact your agent for any class of international mail.
3. NO INSURANCE COVERAGE IS PROVIDED with Certified Mail. For insured or registered mail, consider insured or registered mail.

For all mail types, a Return Receipt may be requested to provide proof of delivery. To request a Return Receipt service, please complete and attach a Return Receipt Requested slip to the article and add applicable postage to cover the fee.

To receive a fee waiver for a Return Receipt, a USPS postmark on your Certified Mail receipt is required.

Other services and fees may be restricted to the addressee or authorized agent. Advise the clerk or mark the mailpiece with the Return Receipt Requested slip.

For a certified mail receipt to be valid, please present the article at the post office for postmarking. If a postmark on the Certified Mail receipt is needed, attach and affix label with postage and mail.

IMPORTANT: Save this receipt and present it when making an inquiry.
nearest the mauka boundary of HASEKO’s property. We understand that additional water will still be needed to supply the golf course, landscaping, and for dust control and that the nonpotable transmission system still does not exist. Absent the ability to use caprock ground water or reclaimed water, the only other available alternative would be potable water from the municipal water system, which would not result in the most efficient utilization of available resources.

In light of these changed conditions, that were unanticipated at the time the D&O was issued, and in consideration of the efficiency of water use, we find that HASEKO’s proposal falls within the provisions of Administrative Rule 13-171-23(b).

Further, we note that, subsequent to the D&O (issued September 25, 1998), on July 18, 2001, the Commission on Water Resource Management (Commission) extended all other interim water use permits in the Puuloa and Kapolei Ground Water Management Areas to: 1) July 1, 2006, or 2) until treated wastewater is available and acceptable for use, or 3) until such time that a significant change in permitted, actual, or projected uses or water supply occurs. We believe that this duration is also appropriate for the proposed EP 27 well battery.

We have combined WUP Nos. 192 and 347, which have been cancelled, under a single new water use permit, WUP No. 650 (attached). The terms and conditions of WUP No. 650 are identical to those approved for other interim water use permits in the Puuloa and Kapolei Aquifer Systems.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

ERNEST Y.W. LAU
Deputy Director

LN:ss
Attachments
May 15, 2003

Ref: 650.wup

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well Nos. 1901-06, 1902-01, 09, 10, 11
Puuloa Ground-Water Management Area, Oahu

This letter transmits your water use permit for the EP 27 Battery (Well No.1901-06, 1902-01, 09, 10, 11) for use of 3.300 million gallons per day (mgd) of water on a 12-month moving average basis that was administratively modified by the Commission on Water Resource Management (Commission) per Declaratory Ruling DEC-ADM97-A1 and Administrative Rule 13-171-23(b). This water use permit, WUP No. 650, supersedes WUP Nos. 192 and 347, which have been cancelled. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 19:

**Special Conditions**

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
a) to July 1, 2006, or
b) until treated wastewater is available and acceptable for use, or
c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
Mr. Nelson W.G. Lee  
Page 2  
May 15, 2003

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment A and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment B.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit.

We draw your attention to two key conditions of your permit that require your response. First, you are required to keep a record of your monthly total pumpage, water level, salinity, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

Second, you are required to submit a water shortage plan to the Commission within thirty (30) days of the issuance date of this permit. Your water shortage plan simply identifies what you are willing to do should the Commission declare a water shortage situation in the Puuloa Ground-Water Management Area and can be as short as a one page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from all sources. The Commission is required, by law, to formulate a plan to implement such area-wide reductions, which should accommodate, include, and be consistent with your plans. Therefore, your help, by submitting your water shortage plan, is greatly needed in formulating the Commission's overall Water Shortage Plan.

If you have any questions, please call Lenore Y. Nakama of the Commission staff at 587-0218.

Sincerely,

Peter T. Young  
Chairperson

Attachments
GROUND-WATER USE PERMIT
WUP NO. 650

PERMITTEE

Permittee/Water User: Haseko (EWA), Inc.
Address: 820 Mililani St., Ste. 810
Honolulu, HI 96813

Landowner of Source: Same

PERMITTED SOURCE INFORMATION

Island: Oahu
Water Management Area: Ewa Caprock
Aquifer Sector: Ewa Caprock
Aquifer System: Puuloa
System Sustainable Yield: 1000 mg/l of Chloride
Well Name: EP 27 Battery
State Well No.: 1901-06, 1902-01, 09, 10, 11

PERMITTED USE INFORMATION

Reasonable beneficial use: Dust Control, Golf Course and Landscaping Irrigation
Withdrawal (12 month moving ave.): 3.300 mgd
Location of water use: Ocean Pointe
TMK #: 9-1-12:5
Address: Ocean Pointe
State land use classification: Urban
County zoning classification: Various

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the permittee is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 and July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.
14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuola Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

PETER T. YOUNG, Chairperson
Commission on Water Resource Management

Attachment
April 25, 2003

Ernest Lau, Deputy Director
Commission on Water Resource Management
State of Hawaii
Department of Land and Natural Resources
Attn.: Lenore Nakama
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Re: Water Use Permits Nos. 192 and 347 (EP 27)
State Well No. 1902-01

In re the Matter of the Water Use Permit Application
For the Ewa Marina Contested Case Hearing
Case No. CCH-OA96-1

Dear Mr. Lau:

HASEKO Ewa, Inc. (HASEKO), is the holder of each of the above-referenced water use permits and seeks modification of the permits as follows. First, HASEKO requests that the Chairperson approve the administrative transfer of Water Use Permit (WUP) nos. 192 and 347 from State Well No. 1902-01 to a battery of wells located on HASEKO's property pursuant to Commission on Water Resource Management (CWRM) Declaratory Ruling No. DEC-ADM97-A1. Second, HASEKO requests that the Commission modify the WUP issued in Contested Case No. CCH-OA96-1 (Marina Permit), without a hearing, pursuant to Rule §13-171-23(b) of Hawaii Administrative Rules (HAR).

1. MODIFICATION OF WATER USE PERMIT NOS. 192 AND 347. On December 16, 1992, CWRM issued WUP no. 192 to Oahu Sugar Company, Ltd. (OSCO), and HASEKO allowing for the existing use of 4.160 million gallons per day (mgd). On July 13, 1994, CWRM modified WUP no. 192 to allow for 2.660 mgd of agricultural use and issued WUP no. 347 to allow for 1.5 mgd of urban use. On May 14, 1997, CWRM modified WUP nos. 192 to allow for 1.8 mgd of urban use. On July 18, 2001, CWRM extended the permits to July 1, 2006, until treated wastewater became available and acceptable for use, or a significant change in water use or supply occurred. On March 12, 2003, pursuant to a request by HASEKO, CWRM issued a variance to HASEKO granting it relief from the 1,000 mg/l chloride limit for Well No. 1902-01.

CWRM Declaratory Ruling No. DEC-ADM97-A1 issued January 5, 1998, provides that the CWRM Chairperson has been delegated the authority to approve allocation adjustments where a) the net change in permitted use within the aquifer is zero, b) the modification would result in more efficient and
optimal operation of multiple sources under a single operator, c) no adverse impacts to water resources or other existing legal uses are anticipated, and d) end use location and type remain unchanged.

In order to address the increased chloride levels at EP 27 and to continue to provide non-potable water for the same uses at the HASEKO parcel, HASEKO requests that the Chairperson approve the administrative transfer of WUP nos. 192 and 347 to a battery of wells set forth in the map prepared by Tom Nance, P.E., a true and accurate copy of which is attached hereto as Exhibit A. HASEKO further anticipates that it will be submitting well drilling permits for these proposed wells. HASEKO believes that this requested modification meets each of the criteria set forth in the declaratory ruling as follows:

a) **Net Change in Permitted Use with Aquifer is Zero.** As noted in the attached map, the proposed wells are all located on the HASEKO parcel and are within the Ewa Caprock aquifer. The total withdrawn under WUP nos. 192 and 347 would remain unchanged.

b) **Modification would Result in More Efficient and Optimal Operation of Multiple Sources Under a Single Operator.** In order to address the increased chloride levels encountered at EP 27, the proposed battery of wells will lessen the drawdown occurring at EP 27 and will utilize shallow wells at sites across the HASEKO property. It is believed that this reduction in pumpage at EP 27 will result in an overall reduction in the chloride levels of the water withdrawn. Additionally, it is noted that the Board of Water Supply’s (BWS) reclaimed wastewater system has not yet been extended into the HASEKO parcel. HASEKO has applied to the BWS for reclaimed water and it is anticipated that the amounts that are presently available will be used at the district park site located on the mauka edge of its property.

c) **No Adverse Effects on Water Resources or Other Existing Legal Uses.** As the HASEKO property and well sites are located on the makai edge of the Ewa Plain, it is noted that there are no downgradient wells and thus there will be no adverse impact to the resource or other users.

d) **End Use Location and Type Remain Unchanged.** The water withdrawn will continue to be used by HASEKO for dust control on its parcel and for irrigation at its turf farm.

Based upon the foregoing, HASEKO requests that the Chairperson modify the terms of WUP 192 and 347 to allow for withdrawal of the allocated amounts from the well sites described in the attached map.

2. **MODIFICATION OF THE MARINA WATER USE PERMIT.** The Marina Permit, issued by CWRM on September 25, 1998, provides at specials conditions (b) and (c) that WUP nos. 192 and 347 shall be cancelled with HASEKO’s written consent upon the start of marina construction and that upon cancellation, HASEKO shall use reclaimed water for its non-potable needs. HASEKO is preparing to excavate the marina and anticipates that construction will begin shortly. The BWS’ reclaimed wastewater system has been extended to a point near the mauka-Diamond Head (northeast) corner of the HASEKO parcel. HASEKO has requested that reclaimed water be supplied to the Ocean Pointe development and the BWS has agreed to supply 100,000 gallons per day (gpd) to HASEKO for irrigation purposes at the district park site located alongside Ft. Weaver Road. HASEKO still requires non-potable water for dust control at locations across its property and for irrigation of its sod farm operation.
HAR §13-171-23(b) provides in relevant part:

All permit applications shall be treated as initial permit applications and be subject to sections 13-171-12 to 13-171-22; except that if the proposed modification involves an increase in the quantity of water not exceeding an average amount per month as set forth in section 13-171-14, the commission, at its discretion, may approve the proposed modification without a hearing provided that the permittee establishes that:

(1) A change in conditions has resulted in the water allowed under the permit becoming inadequate for the permittee’s proposed needs; or

(2) The proposed modification would result in a more efficient utilization of water than is possible under the existing permit.

HASEKO requests that the Commission approve the modification of the Marina Permit, without a hearing, to allow HASEKO to defer surrender of WUP nos. 192 and 347 until reclaimed water becomes available and acceptable for use on the HASEKO parcel, and then to allow HASEKO to retain the allocation for use as a supply of backup or supplemental non-potable water in the event that reclaimed water becomes unavailable in quantities sufficient for HASEKO’s non-potable needs. HASEKO believes that the Commission has the authority to grant this request as the same falls within the exemption set forth in HAR §13-171-23(b) as follows.

First, the modification seeks an increase in water allocation, e.g. from a surrender of the entire permitted amount to the present interim allocated amount of 3.166 mgd, with the same being less than amount originally allocated from EP 27 as an existing use pursuant to HAR §13-171-14. In this case, the original existing use allocated by CWRM to OSCO on December 16, 1992, was 4.160 mgd. The amount presently allocated and sought to be retained is actually less than that permitted as an existing use.

Second, HASEKO observes that there has been a change in circumstances from those envisioned by CWRM when the Marina Permit was issued. As noted in the Marina Permit, it was envisioned that upon the commencement of marina construction, reclaimed water would be available in sufficient quantities to HASEKO for its non-potable needs. As of this date, HASEKO has applied for and received approval for only a limited amount of reclaimed wastewater with all of the allocation being slated for use at the park site nearest to the transmission line that terminates mauka of the HASEKO property. There is presently insufficient reclaimed water available for the remainder of HASEKO’s non-potable needs.

In addition to the lack of supply, it is observed that the transmission system for the reclaimed water does not extend throughout the HASEKO property. While development plans do call for non-potable lines to extend to the golf course, parks, and landscaping located throughout the development, the transmission system needed to deliver the water to the points of use does not exist.

Further, as the EP 27 water is presently being used for dust control, it is noted that areas under construction where dust control is needed are adjacent to residential communities. It is contemplated that residents in these adjacent areas will oppose use of reclaimed water in aerosol form especially where such water could reach their property either through overspray or runoff.
Finally it is noted that when the condition was originally imposed on Haseko, it was unknown what the source, quality, and quantity of, and transmission system for, the reclaimed water would be. Now it is known that the reclaimed water system is a single source plant capable of producing only limited quantities of R-1 quality water. In the event that there is a disruption in service (plant maintenance, low supply of seed wastewater, etc.), users of reclaimed water will need a supply of back up water. It is noted that this situation differs significantly from the BWS potable supply as there is no unified multiple source delivery system in place. It is also believed that the other reclaimed water users in the caprock have been allowed to retain their caprock allocations for the purposes of back up supply. HASEKO simply requests that this same accommodation given to other reclaimed water users be extended to it when reclaimed water becomes available.

Third, and in the unlikely event that the Commission finds that there has not been a change in circumstances justifying the modification, the proposed modification operates to make more efficient use of the resource. As noted above, reclaimed water is neither available in sufficient quantities nor is there a transmission system in place capable of delivering the reclaimed water to the planned points of use. In the absence of either reclaimed water or non-potable caprock water from EP 27 (or the proposed battery of wells described in Part 1, above), HASEKO will have no option other than to use potable water from the BWS system to satisfy its non-potable water needs.

Thank you for your attention to this matter. Should you have any questions or concerns regarding the foregoing, please contact me at (808) 536-3711 or our attorneys Angela Fong and Randall K. Ishikawa at (808) 528-4200.

Very truly yours,

Nelson W. G. Lee
Executive Vice-President

enclosures
March 12, 2003

Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813-2938

Dear Mr. Lee:

This is in response to your February 20, 2003 letter, requesting a variance from the 1,000 mg/l chloride limit for Well No. 1902-01. Our review of the reported chlorides from the well shows that the chlorides have fluctuated about the 1,000 mg/l limit for the last two years.

The Commission’s July 18, 2001 action to extend interim caprock water use permits delegated the authority to the Chairperson to approve variances from the chloride limit, with consideration to the well’s proximity to the ocean and to other wells, its history of chloride and pumpage, the availability of alternative sources of water and possibility for conversion.

Well No. 1902-01 is near the ocean, and there are no other wells downgradient. Haseko (Ewa), Inc. (Haseko) owns the land from the well site to the shoreline. Since the cessation of sugarcane agriculture on the Ewa plain, the chloride concentration of the well water has gradually increased, as was expected with the loss of imported basal irrigation water. We understand that Haseko is currently in negotiations with the Board of Water Supply, the purveyor of reclaimed water from the Honouliuli Wastewater Reclamation Plant, and will convert to reclaimed water when it becomes available, replacing the use of the well for irrigation and dust control.

For the above reasons, the variance request is approved. The variance shall expire six (6) months after the first date of reclaimed water service delivery.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

DEAN A. NAKANO
Acting Deputy Director

LN:ss
Ocean Pointe
(At CWRM on February 28, 2003)

I. Status and Update of Project (See Attached Old & Current Master Plan)
   A. Residential / Commercial
   B. Marina

II. Water Use Permits
   A. EP-27
      (1) Chloride Variance (See Attached February 20, 2003 Letter)
      (2) WUP 347 (1.5 mgd for Urban)
      (3) WUP 192 (1.8 mgd for Agricultural)
   B. Marina Water Use Permit
      (1) Preconstruction Work with COE (See Attached Condition e)
      (2) Waiver of Conditions b and c (See Attached)
         (a) Reclaimed water is not sufficiently available
         (b) Prefers not to use reclaimed water near residences
         (c) Potable water should not be used for dust control
         (d) Back up supply is needed

III. Discussion
These materials are based on the current development plans for Ocean Points. They are conceptual in nature and there are no guarantees that all or any of the components will be developed or that the components will be developed as depicted here.

09/24/02
February 20, 2003

Mr. Dean Nakano, Acting Deputy Director
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347, Well No. 1902-01
Variance from the 1000 mg/l Chloride Limit

Dear Mr. Nakano:

The Commission on Water Resource Management’s July 18, 2001 submittal indicated that operators of wells that have exceeded the 1,000 mg/l chloride limit should seek a variance from the Commission. In an exhibit to that staff submittal, Mr. Glenn Bauer noted that Haseko’s EP-27 well has had chlorides ranging from 800-900 mg/l and had stabilized at approximately 900 mg/l. See page 2-3 of Exhibit 7.

However, a recent review of readings from the EP-27 well indicates that the chlorides from the well have exceeded the 1,000 mg/l chloride limit. We, therefore, are seeking a variance from the 1000 mg/l chloride limit. Certain operational steps are being implemented to reduce the chloride levels below the 1,000 mg/l chloride limit during your consideration and hoped for approval of this variance request.

We also hope that in the next couple of weeks we will be able to schedule a briefing with you and your staff to update you and your staff on the caprock modeling and current activities and on our updated plans for caprock water and reclaimed water for the Ocean Pointe (formally known as the Ewa Marina) project. We will contact you to set up an appointment. Thank you for your kind consideration of this request, it is greatly appreciated. If you have any questions or need further information about our request, please do not hesitate to contact me at 536-3771, ext. 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President
In the Matter of the
Water Use Permit Application
for the Ewa Marina
Contested Case Hearing

Case No. CCH-OA96-1

FINDINGS OF FACT
CONCLUSIONS OF LAW, AND
DECISION AND ORDER
V. DECISION AND ORDER

The Commission approves the issuance of a water use permit to Haseko (Ewa), Inc. for the reasonable and beneficial "use" of Puuola Aquifer System ground water for the proposed excavation of the Ewa Marina, subject to the standard water use permit conditions listed in Attachment A and the following special conditions:

a. Standard Conditions 9, 10, 11, 12, 16, 17, and 18 are waived.

b. Not later than the start of the construction phase (as described in the Department of the Army Corps of Engineers Permit PODCO 2117) of the marina, the applicant's water use permits, WUP Nos. 192 and 347, for a total allocation of 3.3 mgd, shall be canceled, with the written consent of the permittee, in accordance with Haw. Rev. Stat. § 174C-58.

c. Upon cancellation of WUP Nos. 192 and 347, pursuant to b., above, the applicant shall use reclaimed water for its non-potable needs.

d. This permit shall be subject to the Commission's periodic review of the progress of the construction of the marina and the applicant's compliance with the conditions of this permit. The Commission may initiate action to revoke the permit if construction of the marina is not completed by December 31, 2003, which coincides with the expiration date of the U.S. Army Corps of Engineers permit.

e. The applicant shall submit to the Commission a copy of the complete preconstruction report, required by the Corps, describing the results of the pre-construction activities, the adjustments made to the model, and the predicted behavior of the caprock aquifer when the marina is excavated and opened.

f. During the construction of the marina, the applicant shall submit to the Commission copies of monitoring results and any revised predictions, required by the Corps.

g. To protect the traditional and customary rights exercised in the project area during the construction of the marina, access to the shoreline fronting the project area must be permitted for the reasonable exercise of traditional and customary practices of native Hawaiians to the extent feasible and safe.

h. After the completion of the project, the Applicant will provide public access to the marina waterway and ocean shoreline for the purpose of permitting the reasonable exercise of traditional and customary practices of native Hawaiians.

i. Post construction, the applicant shall submit to the Commission copies of quarterly reports, required by the Corps, analyzing the data to determine impact of the completed marina on the resource value of the Wetland Preservation Area, the habitat value of the anchialine pools, and the ground-water levels and salinity gradients on the caprock aquifer.

j. The applicant shall comply with all other applicable statutes, ordinances, and regulations of the Federal, State, and City and County of Honolulu governments.
February 20, 2003

Mr. Dean Nakano, Acting Deputy Director
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347, Well No. 1902-01
Variance from the 1000 mg/l Chloride Limit

Dear Mr. Nakano:

The Commission on Water Resource Management’s July 18, 2001 submittal indicated that operators of wells that have exceeded the 1,000 mg/l chloride limit should seek a variance from the Commission. In an exhibit to that staff submittal, Mr. Glenn Bauer noted that Haseko’s EP-27 well has had chlorides ranging from 800-900 mg/l and had stabilized at approximately 900 mg/l. See page 2-3 of Exhibit 7.

However, a recent review of readings from the EP-27 well indicates that the chlorides from the well have exceeded the 1,000 mg/l chloride limit. We, therefore, are seeking a variance from the 1000 mg/l chloride limit. Certain operational steps are being implemented to reduce the chloride levels below the 1,000 mg/l chloride limit during your consideration and hoped for approval of this variance request.

We also hope that in the next couple of weeks we will be able to schedule a briefing with you and your staff to update you and your staff on the caprock modeling and current activities and on our updated plans for caprock water and reclaimed water for the Ocean Pointe (formally known as the Ewa Marina) project. We will contact you to set up an appointment. Thank you for your kind consideration of this request, it is greatly appreciated. If you have any questions or need further information about our request, please do not hesitate to contact me at 536-3771, ext. 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President
Mr. Nelson W.G. Lee  
Executive Vice President  
Haseko (Ewa), Inc.  
820 Mililani Street, Ste. 820  
Honolulu, HI 96813-2938

Dear Mr. Lee:

This is in response to your June 26, 2002 letter, requesting a variance from the weekly sampling and reporting schedule to a monthly schedule for Well No. 1902-01. Based on our analysis of the data collected at Well No. 1902-01, which indicates that ground-water conditions at the site have stabilized, your request is hereby approved.

If you have any questions please contact Lenore Nakama of the Commission staff at 587-0218.

Sincerely,

LINNEL T. NISHIOKA  
Deputy Director

LN:ss
June 26, 2002

Ms. Linnel T. Nishioka, Deputy Director  
Commission of Water Resource Management  
1151 Punchbowl Street, Room 227  
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347 Well No. 1902-01  
Chloride Sampling Protocol

Dear Ms. Nishioka:

The Commission on Water Resource Management Notice Action, dated August 6, 2001 required interim permittees to adhere to a weekly chloride sampling protocol. Since August of last year, Haseko has provided the Commission with weekly chloride sampling reports as requested.

Recent discussions and review between our consultant, Mr. Michael Knight of URS and your staff, seem to indicate from the data collected that it appears the caprock has stabilized sufficiently to warrant sampling monthly rather than weekly.

We, therefore, would like to make a request to relax our sampling frequency from weekly to monthly.

Sincerely,

Nelson W.G. Lee  
Executive Vice President

NWGL: dsl  
Cc: Michael Knight, URS

820 Millilani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654
Ref: ewa_13e.act
CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Nelson Lee
Haseko (Ewa), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

Notice of Action
Extension of Interim Water Use Permit
Puuloa Ground Water Management Area, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on July 18, 2001, to extend your interim water use permit (WUP No. 347, Well No. 1902-01), subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace former special conditions):

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE. CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES.

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier. (No extra charge)

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article RETURN RECEIPT REQUESTED adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse RESTRICTED DELIVERY on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

U.S.G.P.O. 1989-234-555

Receipt and present it if you make inquiry.
<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Certified Fee</td>
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<tr>
<td>Restricted Delivery Fee</td>
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<td>Return Receipt showing to whom and Date Delivered</td>
<td>$1.50</td>
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<tr>
<td>Return Receipt showing to whom, Date and Address of Delivery</td>
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<tr>
<td>TOTAL Postage and Fees</td>
<td>$4.17</td>
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SENDERS:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

1. Addressee's Address
2. Restricted Delivery
3. Article Addressed to: Mr. Nelson Lee
   Haseko (Ewa), Inc.
   820 Mililani St., Ste. 810
   Honolulu, HI 96813
4a. Article Number
   P 354 448 612
4b. Service Type
   ☑ Registered
   ☑ Certified
   ☑ Insured
   ☑ Return Receipt for Merchandise
   ☑ COD
5. Received By: (Print Name)
   Deborah Seu Linden
6. Signature: (Addressee or Agent)
   X Deborah Seu Linden
7. Date of Delivery: 8/7/01
8. Addressee's Address (Only if requested and fee is paid)

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery
Consult postmaster for fee.

Thank you for using Return Receipt Service.
f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment C.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

The Commission will suspend the four-year period of nonuse for permittees that convert to reclaimed water service, beginning from the first date of reclaimed water service delivery under an agreement with the Board of Water Supply. The suspension will be for the duration of the interim permit or until the agreement with Board of Water Supply for reclaimed water service delivery ends, whichever comes first.

The Commission decided that interim permittees shall be notified by letter of the Commission action and extended permit duration and that re-issuance of new interim water use permits for these extended permits is unnecessary.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

LINNEL T. NISHIOKA
Deputy Director

LN:ky
Attachments
TESTIMONY BY APPLICANT:

Mrs. Harms stated that according to the Hawaii County Department of Water Supply (DWS), she would need 2 hookups per unit and a total of 16 units that require water. She stated that the units are located approximately 100 feet from where the County system terminates at the entrance to Vacationland. Mrs. Harms stated that DWS informed her that only 50 hookups were allowable to the Association meter, and that the association meter was filled to the maximum. At the present, Mrs. Harms stated that she has a temporary hookup of 10 lines with DWS.

MOTION: (RICHARDS/NOBRIGA)
To approve the submittal as amended in Alternate Recommendation #1.
UNANIMOUSLY APPROVED AS AMENDED.

4. Extension Of Interim Water Use Permits, Puuloa and Kapolei Ground Water Management Areas, Oahu

PRESENTATION OF SUBMITTAL: Ms. Lenore Nakama

AMENDED RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 4, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

   a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

   b. 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.

   c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted.

   d. The duration of the interim permit shall be

      a) to July 1, 2006, or
      b) until treated wastewater is available and acceptable for use, or
      c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.
e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirements is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Exhibit 9.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. Grant variances from the 1,000 mg/l chloride limit to Hawaii Prince Golf Club (Well Nos. 1900-02, 1900-17 to 20, 1901-03), Pacific Tsunami Warning Center (Well No. 1900-23), and The Estate of James Campbell (Well Nos. 1905-08,10). The variances shall expire six (6) months after the first date of reclaimed water service delivery.

3. Delegate the authority to the Chairperson to approve future variance requests.

4. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

5. Suspend the four-year period of nonuse for the Hawaii Prince Golf Club, Coral Creek Golf Course and Barbers Point Kapolei Golf Course, beginning from the first date of reclaimed water service delivery under their agreement with the Board of Water Supply. The suspension will be for the duration of these interim permits or until the agreement with Honolulu Board of Water Supply for reclaimed water service delivery ends whichever comes first. This condition shall apply to any other interim permittee that converts to reclaimed water service.

TESTIMONY BY APPLICANT:

Ms. Terry Kondo of Watanabe Ing & Kawashima representing Hawaii Prince Golf Course expressed concerns on staff recommendations #2, and 1g.

Mr. Tom Nance stated that when the golf course switches over to the effluent, the wells will not be run weekly. They will be run on occasion to keep them viable for use when effluent is not available. They will not be used on a weekly basis so providing a weekly data will become difficult. In the case of Hawaii Prince, samples that were obtained at one-half to
one-hour intervals were misleading. An internal sample protocol was developed so that all wells have to be run continuously for 24 hours before samples can be obtained. For that reason, Mr. Nance asked if condition 1 g could be modified that reporting be done on a monthly basis. He stated that trends are better noticed on a monthly data report.

Ms. Nakama stated that an administrative waiver was granted for Kapolei Golf Course because the long-term data was so stable. No significant movements were indicated in the water levels. Hawaii Prince and Coral Creek could request an administrative waiver from the weekly chloride-sampling requirement from the Chairperson.

Mr. Glenn Bauer stated that records showed that there were no major differences for Hawaii Prince’s chlorides in the weekly and monthly data. He felt that monthly data reporting would be sufficient.

MOTION: (NOBRIGA/GIRALD)
To approve the submittal as amended.
UNANIMOUSLY APPROVED AS AMENDED.

5. County of Hawaii, Department of Public Works, Application for a Stream Channel Alteration Permit (SCAP-HA-325), Install Three Concrete Culverts and Replace Bridge Structures, Waiakea Stream, Hilo, Hawaii (TMK 2-4-01:007, 010, 122)

PRESENTATION OF SUBMITTAL: Mr. Edwin Sakoda

RECOMMENDATION:
That the Commission:

Approve a stream channel alteration permit for the construction of culverts at Puainako Street and bridge modifications at Komohana Street, Waiakea Stream, Hilo, Hawaii (TMK: 2-4-01:007, 010, 122). The permit shall be valid for two years subject to the standard stream channel alteration permit conditions in Exhibit 5.

MOTION: (NOBRIGA/RICHARDS)
To approve the submittal.
UNANIMOUSLY APPROVED.


PRESENTATION OF SUBMITTAL: Mr. Ryan Imata
EXTENSION OF INTERIM WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

PERMITTEE(S): See Exhibit 1

LOCATION MAP: See Exhibit 2

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Waiawa, Ewa-Kunia, and Makaiwa Aquifer Systems. Due to uncertainties regarding the caprock's sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock. Then-current uses were operating under permanent water use permits.

Designation of the Ewa Caprock as a water management area was precipitated by the City and County of Honolulu's (City) urbanization plans for the Ewa area and a City ordinance requiring dual water systems for all new developments. Potable water was to be provided through the municipal system. Possible sources of non-potable water were brackish ground water from the Ewa Caprock aquifer and reclaimed sewage effluent. The estimated non-potable demand of 25 mgd after full buildout (Kumagai, 1996) far exceeded the estimated natural recharge to the caprock aquifer of less than 16 mgd (Bauer, 1996).

Because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture, in 1993, the Commission began awarding temporary one-year permits for new uses of caprock ground water. In analyzing water availability, the Commission used guidelines for estimating sustainable yields for the Puuloa, Kapolei, and Malakole areas (Yuen & Associates, Inc., 1989).
On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.

At the July 5, 1995 Commission meeting in Honokaa, Hawaii, the Commission extended the permits, which were now called interim permits, until such time that a formal decision could be made on Oahu.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a sustainable yield for the caprock.

Also on March 13, 1996, the Commission adopted the following policy statement, clearing the way for application of reclaimed water on lands overlying the Ewa Caprock Aquifer:

"It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses."

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for individual irrigation wells at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The rationale behind the chloride cap was to limit pumpage in those wells approaching the limit, to prevent a build-up of sodium in the clay soils, and to protect other users adjacent to those pumping higher chloride water. The Commission also adopted the Puuloa, Kapolei, and Malakole Aquifer Systems in the Ewa Caprock Sector and approved pending applications for new and continued irrigation uses. The specified duration of the interim water use permits was to October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincided with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provided a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999.

On October 22, 1998, the Commission extended the interim water use permits, subject to the Standard Conditions of a water use permit and new special conditions (Exhibit 3). The interim permits specified a duration to: 1) July, 2001, or 2) until treated wastewater is available and acceptable for use, or 3) until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The list of interim permits due to expire in July, 2001 is shown in Exhibit 4. The graphs of reported pumpage and chlorides are shown in Exhibit 5.

On July 20, 2000, an agreement was reached between the Honolulu Board of Water Supply (BWS), the City, and U.S. Filter for BWS’ purchase of the Honouliuli Wastewater Reclamation Facility. The agreement includes BWS becoming the purveyor of reuse water, with the task of securing customers for 10 mgd by July 1, 2001. U.S. Filter will operate the facility for BWS under a 20-year service agreement. The City will provide secondary effluent to the facility and will take back 4 mgd of the R-1 water for City reuse applications. Some of the reclaimed water will supply industrial uses at Campbell
Industrial Park. (A briefing by the BWS on their reclamation program is scheduled as a separate item on this agenda.)

ANALYSIS/ISSUES:

A significant change in the water supply picture has been the acquisition of the Honouliuli Wastewater Reclamation Facility by the BWS and BWS' new role as purveyor of reclaimed water. Since their recent acquisition of the plant, BWS has been actively promoting the use of reclaimed water for non-potable needs over the Ewa Caprock Aquifer. Negotiations have been finalized for some City projects (West Loch and Ewa Villages developments) and for some of the golf courses that have interim caprock permits. Currently, we understand that a memorandum of understanding for golf course irrigation has been negotiated with Coral Creek, Hawaii Prince, and Barber's Point. The agreement provides for a set rate to July 1, 2006. The staff feels that this would be a good time to revisit these permits and the progress of the reclaimed water effort.

Even with reclaimed water as the primary irrigation source, ground water would still be used for the golf course water features, to maintain the pumps, and to mitigate potential reclaimed water quality or odor issues that may arise. The long-term goal of the golf courses is to blend reclaimed water with caprock ground water. Until reclaimed water is actually delivered and has been shown to be a reliable and acceptable source, the golf courses have requested that their interim permits be renewed for the same quantities. They have also requested that the Commission suspend the four-year nonuse clause for permit revocation. Section 174C-58 Haw. Rev. Stat. provides for the Commission and permittee to enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year revocation period. The staff feels that the promotion of alternative non-potable sources to meet non-potable needs is a satisfactory reason to suspend the four-year revocation period, given the uncertainties associated with this new source conversion, provided that other users and the resource are adequately protected.

PROTECTION OF THE RESOURCE

The current sustainable yield for the caprock aquifers is defined by a sustainable capacity at all irrigation wells in the Puuloa and Kapolei Aquifer Systems which prohibits individual pumpages that cause the specific well to exceed a 1,000 mg/l chloride cap. Enforcement of the chloride cap provides adequate protection for the aquifer. Management of the resource via a chloride cap was adopted on May 14, 1997 as an interim management plan. The staff feels that this management approach has been effective and is not recommending that the strategy be changed at this time.

MAXIMIZING THE UTILITY OF THE RESOURCE

Maximizing the utility of the caprock is intimately tied to wastewater reuse. As wastewater reuse comes on line, the sustainable yield of the caprock will increase, meaning more pumpage may be sustained under the 1,000 mg/l chloride limit. However, the distribution of reclaimed wastewater is uncertain, which will affect chloride distributions and total nonpotable supply. Of the projected total 13 mgd of R-1 water from the Honouliuli Wastewater Reclamation Plant, 1 mgd is needed for in-plant process water, and 2 mgd is planned for industrial uses at James Campbell Industrial Park. This leaves about 10 mgd available for irrigation needs in the region.
Given the City's current plans, the staff estimates that the potential future supply of nonpotable water for irrigation uses on lands overlying the Puuloa Aquifer System, where the competition for nonpotable irrigation water is most severe, could be up to about 15 mgd. 10 mgd reclaimed water plus approximately 5 mgd natural sustainable yield (Bauer, 1996). This assumes that 100% of the treated effluent will be available for reuse in Puuloa, which is improbable. But the availability of reclaimed water will present permittees with a possible alternative should their wells exceed the 1,000 mg/l chloride limit. Likewise, should the 1,000 mg/l limit not be exceeded, the permittees may continue to pump and may even work out a management plan which would allow for alternating between caprock and wastewater reuse to maximize the economical use of both resources. But ultimately, based on current reclaimed water plans, total allocations for the Puuloa Aquifer System should not exceed 15 mgd. Current allocations in the Puuloa Aquifer System total 14.817.

WELL INTERFERENCE

Since there are no ground-water models (solute-transport) that can predict chloride response to pumpage at individual well sites, close monitoring of the resource and enforcement of the chloride cap is critical to protect the resource in this interim period while the City finalizes plans to fully implement its reclamation program. Exhibit 6 shows that the caprock aquifer was significantly influenced by sugarcane irrigation practices and is still in a state of flux. Currently, all interim permittees are required to submit weekly reports of pumpage, water levels, chlorides, and water temperature (unless a variance from this requirement has been approved). All permittees have been put on notice that the reporting requirement will be strictly enforced.

Although enforcement of the 1,000 mg/l chloride cap at each well site will provide adequate protection for the resource, it may not be sufficient to preclude well interference. However, not only will wastewater reuse further protect the resource, it will also help to reduce the effects of well interference that may cause individual wells to exceed the 1,000 mg/l chloride cap. Special Condition f. has been added to the existing interim permits recommended for extension and will be added to all future caprock permits to put the permittees on notice of the risk of reliance on caprock ground water and its uncertain sustainable yield.

The staff has been sending all interim permittees in Puuloa the monthly bulletin which shows all pending permit applications, which should provide the permittees sufficient notice of new proposed uses of Puuloa Caprock ground water. Permittees should review new applications and water data from other nearby wells to proactively protect their sources. Permittees are encouraged to submit comments or objections in accordance with Administrative Rule 13-171-18 (Objection to Proposed Water Use Permit). Further, the staff has been analyzing the weekly water data reports, and we are continuing to work on triggers to implement a water shortage plan. These triggers may be related to some modification of Exhibit 6. Should valid claims of well interference be raised, either by permittees or as a result of the staff's analysis, the Commission may consider implementing a water shortage plan to address the well interference issue.

At this time, only an informal and incomplete water shortage plan exists. On May 14, 1997, the Commission approved a permit classification system for a water shortage plan for the Puuloa Aquifer System as provided under Administrative Rule 13-171-42:

"(a) The commission shall formulate a plan for implementation during periods of water shortage. As a part of the plan, the commission shall adopt a reasonable system of permit
classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.

(b) In accordance with this chapter, the commission may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

(c) All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission.

For the Puuloa Aquifer System, the Commission established the highest priority of nonpotable use as agriculture because the State’s policy is to promote agriculture, and also because agricultural correlative uses are assured through the 1978 Constitutional Amendment. The second priority in water use is golf course irrigation because of the economic impacts that may result from inadequate water supply. The lowest priority in water use is landscape irrigation and dust control.

Water shortage plans were requested from all of the users in Puuloa, with the exception of United States Fish and Wildlife Service. The requirement to submit individual water shortage plans is highlighted in the cover letter that transmits the permit and is also stated in Standard Condition 17. The staff will continue to work with users to develop their individual plans. As part of the May 14, 1997 action, the Commission has also delegated the authority to the Chairperson to approve individual water shortage plans and the regional water shortage plan for the Puuloa Aquifer System.

CHLORIDE CONCENTRATION TRENDS

The Commission staff established a caprock well monitoring network in 1993. Each month, the staff collects water level and chloride data at selected caprock wells. The staff’s analysis of the chloride trends at the individual wells and regionally is attached (Exhibit 7). The data show that the chloride concentration in the caprock water varies significantly from place-to-place and from well to well. Some of the reasons for these disparities include the subsurface geology, distance from the coast, well construction, pump capacity, and pumping schedule. Many of the sources have not exceeded the 1,000 mg/l chloride limit. The baseline data suggest that those wells that have exceeded the limit will continue to pump water exceeding 1,000 mg/l of chloride unless there is an influx of less saline water or a complete cessation of pumpage. The staff recommends that those operators with wells and/or batteries having >1,000 mg/l of chloride should apply for a variance from the established limit. Once reclaimed water is available, these wells should only be used for back-up purposes or for blending with reclaimed water to a quality of 1,000 mg/l of chloride or less.

Currently, variances from the chloride cap have been granted to Hawaii Prince Golf Club (Well Nos. 1900-02, 1901-17 to 20, 1901-03) and Pacific Tsunami Warning Center (Well No. 1900-23). In a letter dated August 7, 2000, The Estate of James Campbell (Campbell) requested that the Commission waive the salinity limit for its two nonpotable wells (Well Nos. 1905-08, 10). The Commission denied the request on November 16, 2000 because Campbell was in the process of transferring the nonpotable system to the BWS and an alternative source (reclaimed water) would soon be in place. Negotiations are still ongoing for the transfer of the nonpotable water system. Chloride levels at the Campbell wells are now about 1,200 ppm. The staff is recommending that the Commission approve temporary variances from the chloride limit pending the implementation of the reclaimed water system for those users that have requested variances. Other users whose wells are close to the chloride cap may also request variances. Unless a variance is requested and approved, wells exceeding the chloride limit
must shut down. The staff’s recommendation on a variance request would be made with consideration to the well’s proximity to the ocean and to other wells, its history of chloride and pumpage, the availability of alternative sources of water and possibility for conversion. The staff is recommending that future variance requests be delegated to the Chairperson for disposition.

RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 4, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

   a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

   b. 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.

   c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted.

   d. The duration of the interim permit shall be
      a) to July 1, 2006, or
      b) until treated wastewater is available and acceptable for use, or
      c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

   e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

   f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

   g. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data.

   h. Require adherence to the Conservation Conditions shown in Exhibit 9.

   i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. Grant variances from the 1,000 mg/l chloride limit to Hawaii Prince Golf Club (Well Nos. 1900-02, 1900-17 to 20, 1901-03), Pacific Tsunami Warning Center (Well No. 1900-23), and
The Estate of James Campbell (Well Nos. 1905-08,10). The variances shall expire six (6) months after the first date of reclaimed water service delivery.

3. Delegate the authority to the Chairperson to approve future variance requests.

4. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

5. Suspend the four-year period of nonuse for the Hawaii Prince Golf Club, Coral Creek Golf Course and Barber Point Golf Course, beginning from the first date of reclaimed water service delivery under their agreement with the Board of Water Supply. The suspension will be for the duration of these interim permits or until the agreement with Honolulu Board of Water Supply for reclaimed water service delivery ends whichever comes first. This condition shall apply to any other interim permittee that converts to reclaimed water service.

Respectfully submitted,

LINNEL T. NISHIOKA
Deputy Director

Attachment(s): A (Standard Conditions for a Water Use Permit)

Exhibit(s):
1 (Interim Permittees and Landowners at the Source Location)
2 (Well Location Map)
3 (Standard and Special Conditions, approved October 28, 1998)
4 (Interim Permitted Uses, Puuloa and Kapolei Aquifer Systems)
5 (Graphs of Reported Pumpage and Chlorides)
6 (Chloride and Pumpage of Ewa Plantation Shallow Wells)
7 (Chloride Concentration Trends)
8 (Chloride Sampling Protocol)
9 (Conservation Conditions)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 20, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:

ATTACHMENT A
a. protect the water sources (quantity or quality);
b. meet other legal obligations including other correlative rights;
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the applicable aquifer system's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the applicable aquifer system, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:

   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage

ATTACHMENT A
pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the applicable Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
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EXHIBIT 2
EWA CAPROCK INTERIM PERMITS
Special Conditions
(approved on October 22, 1998)

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol (Attachment C) and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions (Attachment D).

EXHIBIT 3
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;

EXHIBIT 3
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the
   Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the
permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able
to withdraw water for the proposed use on a regular basis, within twenty-four (24) months
from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly
record of withdrawals, salinity, temperature, and pumping times must be kept and reported to
the Commission on Water Resource Management on forms provided by the Commission on a
monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the Puuola or Kapolei
Aquifer System's sustainable yield. The amount of water authorized by this permit may be
reduced by the Commission if the sustainable yield of the Puuola or Kapolei Aquifer
System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
a. The conditions of use of the permit, including, but not limited to, place, quantity, and
   purpose of the use, remain the same; and
b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a
ground for revocation of the permit. A transfer which involves a change in any condition of
the permit, including a change in use covered in HRS § 174C-57, is also invalid and
constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all
applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for
reasons other than conservation, of the water allowed by this permit for a period of four (4)
continuous years or more may result in a permanent revocation as to the amount of water not
in use. The Commission and the permittee may enter into a written agreement that, for
reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-
year period. Any period of nonuse which is caused by a declaration of water shortage
pursuant to section HRS § 174C-62 shall not apply towards the four-year period of
forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance

EXHIBIT 3
of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
## Aquifer System Water Use Permit Index

### ISLAND OF OAHU

<table>
<thead>
<tr>
<th>WUP No</th>
<th>Approved</th>
<th>Applicant</th>
<th>Well No.</th>
<th>Well Name</th>
<th>WUP (mg)</th>
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#### WMA Aquifer System: KAPOLEI

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**Summary for 'SYSTEM' = KAPOLEI (8 detail records)**

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<table>
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<th>Well Name</th>
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**Totalling 2.033 1.552**

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Monday, May 21, 2001

Page 1 of 2
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<tr>
<th>WUP No</th>
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Summary for 'SYSTEM' = PUULOA (25 detail records)

Totalling 4.867 3.468
Hawaii Prince G.C. Combined Pumpage
(Well Nos. 1900-02, 17 to 20; 1901-03)

EXHIBIT 5

--- 12-MAV --- WUP --- combined monthly withdrawal

pumpage (mgd)

date (latest lata 04/01)

0 0.5 1 1.5 2 2.5 3

93 94 95 96 97 98 99 00 01
Campbell Estate Caprock Pumpage
Kapolei Irr. Wells 1&2 (1905-08,10)

Combined Monthly Pumpage  12-MAV  WUP  1905-08 Chloride
Gentry Pacific, Ltd. Pumpage
Sunrise Apt. Well (Well No. 2001-04)

EXHIBIT 5

monthly values  requested amount  12-MAV

date (latest data 11/00)
Palm Villa II Homeowners Association
Palm Villa II Well (Well No. 2001-08)

EXHIBIT 5

Pumpage (mgd)

Date (latest data 04/01)

- Monthly values
- WUP
- 12-MAV
Gentry Pacific, Ltd. Pumpage
Coronado Well (Well No. 2001-09)

EXHIBIT 5

monthly values  WUP  12-MAV
Coral Creek Golf Course Withdrawals
Well 4 (2001-13)

EXHIBIT 5

--- pumpage (mgd) --- 12-MAV --- max chloride level

Date (latest data 4/01)
Coral Creek Golf Course Withdrawals
Well 1 (2002-15)

EXHIBIT 5

pumpage (mgd) — 12-MAV — max chloride level
Coral Creek Golf Course Withdrawals
Well 2 (2002-17)

EXHIBIT 5

- pumpage (mgd)
- 12-MAV
- max chloride level

date (latest data 4/01)
Coral Creek Golf Course Withdrawals
Lake A (2002-19)

pumpage (mgd) 12-MAV max chloride level

date (latest data 4/01)
Kapolei Golf Course
Well Nos. 2003-01,02,05 Combined

The diagram shows the pumpage and chloride levels over time for well numbers 2003-01, 2003-02, and 2003-05 combined at Kapolei Golf Course. The x-axis represents the date, with the latest data as of 4/01. The y-axes show pumpage (mgd) on the left and chloride (mg/L) on the right. Various lines and markers indicate different data points and trends over the years from 1992 to 2001.
State HCDCH Kapolei Wells
Well Nos. 2003-04,07 Combined

Plot showing pumpage (mgd) and chloride (mg/l) over time from 92 to 01, with data points indicating monthly pumpage, 12-MAV, 2003-04 CI, 2003-07 CI, and WUP.
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Average Yearly pumpage (mgd)

Average monthly pumpage (mgd)

- EP-20
- EP-21
- EP-22
- EP-23
- EP-24
- Gentry Palm Villa 1
- Kapolei Golf B

Ref: CWRM, BWS files, & R-79
June 5, 2001

MEMORANDUM FOR THE RECORD

FROM: Glenn Bauer

SUBJECT: Chloride Concentration Trends in the Ewa Caprock Aquifer

Background

Commission staff has been collecting water samples from various wells and well batteries within the caprock aquifer from Puuloa to Malakole since 1993. Our baseline sampling effort began before the demise of Oahu Sugar Company in 1994, and was augmented by the required reporting of weekly chlorides by caprock water users.

The end of sugar cultivation on the Ewa Plain brought with it an end to the importation of low to moderate salinity basal ground water for irrigation. Prior to 1994, when drip irrigation practices were employed, the estimated return irrigation component from basal ground water was 16 mgd (Mink, 1989) with 8 mgd going to the Puuloa area and 8 mgd going to the Kapolei-Malakole area. At the same time, the plantation pumped an average of 14 mgd (Bauer, 1996) from their shallow wells. After 1994, ground-water input to the caprock included natural inflow from the basal aquifer into the caprock and direct recharge from rainfall and storm runoff. Various authors report a range of natural inflow into the caprock from the basalt. Most of these numbers were derived by numerical models or by salinity mixing model equations and are small when considered on a flux/mile basis. Estimates range from <1 mgd to 3± mgd/mile (Bauer, 1996). Long-term annual average rainfall input over the Ewa Plain has been estimated to be about 5± mgd (summary of results in Bauer, 1996). In addition, long-term annual average for storm runoff recharge over the caprock from Kaloi and Makakilo Gulches was estimated to be between 1 and 2 mgd (Mink, 1989).

In 1997 the Commission adopted a 1,000 mg/l chloride cap for individual wells developing caprock water. The reasoning behind this cap was to limit pumpage in those wells approaching the limit and to prevent a sodium build-up in the clay soils which would adversely affect the growth of certain grasses for golf courses, and to protect other users adjacent to those using higher chloride water.

Chloride Trends Since 1994 East of Fort Weaver Road

The chloride concentration in the caprock water varies significantly from place-to-place, and from well to well. Some of the reasons for these disparities include the subsurface geology, distance from the coast, well construction, pump capacity, and pumping schedule.

Generally, those pumping batteries that have long-term records, are east and south of Fort Weaver Road and Iroquois Point Road respectively, show a rising trend in

EXHIBIT 7
chlorides over time. This trend is partly due to irrigation practices and partly due to the lack of recharge of fresher water into the aquifer and proximity to the shoreline.

**Ewa Beach International Golf Club**

For Ewa Beach International, chlorides have risen from a low of 1,000 mg/l in late 1996 (due to recharge from a large storm on Election night) to 1,800± mg/l at the present time. CWRM staff samples Well No. 1900-21 at a 1-acre pond (Pond E). Evaporation from the pond undoubtedly affects chloride concentration. Pumpage from this source is less than 1 mgd.

**Hawaii Prince Golf Club**

Hawaii Prince Golf Club pumps water from 6 wells. Total average pumpage is slightly greater than 1 mgd. CWRM staff typically samples the wells after they have been running for several hours. Hawaii Prince Irrigation Wells 1-5 (1901-03, 1900-17-20) and EP-22 (1900-02). Chloride concentration in Hawaii Prince Wells 1 and 2 have remained relatively stable over the period of record. Well 1 remains about 1,000 mg/l, while Well 2 changed from about 1,000 mg/l in 1994 to 1,200± mg/l at the present time. Wells east of Well 2 are much more saline. The magnitude of the increase in salinity has ranged from 300 mg/l (Well 3) to 500 mg/l (Well 5 and EP-22) over the period of record.

**U. S. Fish and Wildlife Well 2101-14**

This well is north of Iroquois Point Road. Average pumpage is less than 0.5 mgd. The chloride concentration has shown an improvement since 1996 and remains stable at 1,000± mg/l.

**Chloride Trends Since 1994 West of Fort Weaver Road**

**Gentry Wells**

CWRM staff has monitored 5 of the 9 wells developed by Gentry. These wells are low capacity and are used exclusively for irrigation of the common areas within each development. Total Gentry pumpage is less than 0.5 mgd. Since 1997, chloride concentration has remained consistently between 400 and 800 mg/l, well below the 1,000 mg/l cap. The wells monitored are Palm Villa I (2001-06), Palm Villa II (2001-08), Palm Court III (2002-12, monitoring discontinued in 1997), Sunrise (2001-04), and Sun Terra (2001-05). Pump capacities for these wells range from 100-110 gpm.

**Haseko EP-27 Well (1902-01)**

CWRM staff began monitoring this source in 1994 just after the closing of Oahu Sugar. Static (non-pumping) samples were collected from the open pit near the pump house. Chlorides ranged from 800 to 900 mg/l. In 1997, Haseko began to pump this source at rates approaching 2 mgd. The average rate is about 1 mgd. Chloride
concentration remains stable at 900± mg/l. The stable nature could be that the pumping source skims the top water from the pit.

**Coral Creek Golf Course**

In 1998, several large pits were excavated and noted north and south of Geiger Road just east of theHonouliuli STP. These pits and drilled wells became part of the Coral Creek battery. Water from the pits is used for water features and for a back-up source (Lake Well 1, 2002-19). Coral Creek Golf Club irrigates using water from Coral Creek Well 1 (2002-15), Coral Creek Well 2 (2002-17), and Coral Creek Well 4 (2001-13). Pumpage is slightly greater than 1 mgd; however, the chloride concentration from the sources ranges between 1,000 mg/l to almost 4,000 mg/l at Well 2. According to golf course personnel, Well 4 pumps the least amount and is the most stable in terms of chloride concentration. It was also noted by golf course personnel that the longer Well 1 and 2 pumps, the saltier the water becomes. Pump capacities for these wells are high. Coral Creek 1 and 2 have 800 gpm pumps, while Coral Creek 4 has a 1,000 gpm pump.

High evaporation rate (close to 90 inches/year) in the Ewa Plain could cause the salinization of the lakes, which, in turn, could be the reason for the high chlorides localized at Well 1 and 2. However, the chloride samples taken from the Lake Well 1 show concentrations ranging from 1,000 to 1,200 mg/l. At the present time, Coral Creek's saline water does not seem to affect the Gentry sources to the east.

**Chloride Trends Since 1994 in the Kapolei Region**

**HFDCH Kapolei Golf Course**

The Kapolei Golf Course utilizes Kapolei Irrigation Wells A, B, C, D, E, and C-1 (well nos. 2003-01-05, 07). Well C-1 is a replacement well for Well C. Chlorides have been remarkably stable, hovering between 200± mg/l to 600 mg/l, with little variation or trends. It is thought that basal ground-water inflow from the Waianae aquifer in conjunction with a thin caprock is responsible for the stability of the water chemistry in this area. Variations in pumpage are seasonal, but average about 1 mgd.

**Kapolei City Wells**

Campbell Estates' Kapolei City Wells (1905-08, 10) supply irrigation water for Kapolei. Average daily pumpage is less than 0.5 mgd. Since 1995 chloride concentrations in both wells have been rising from 600 mg/l to 1,200-1,400 mg/l at the present time. Well 1905-08 (east well) water quality is slightly better than 1905-10. Duration of pumpage prior to sample collection probably influences the chloride concentration. However, it is evident that the overall trend is upwards.

**Conclusions**
Since the cessation of sugar irrigation the common chloride trend is generally a linear increase for wells that exceed the 1,000 mg/l cap. The long-term prognosis for these wells will be a continued increase in salinity. However, there are several well batteries and wells that do not fit this trend (e.g. U.S. Fish and Wildlife, Gentry, Haseko, HFDCH Kapolei), and exhibit remarkable chloride stability. The scatter of chloride data associated with Coral Creek cannot be easily explained. Bottom hole elevations are not as great as some of the Gentry Wells, yet the chlorides are much greater and the sensitivity of chloride concentration to pumpage suggest that localized upconing, in conjunction with the high pump capacities, is taking place. Moreover, the relationship of the large lakes (surface evaporation) to the wells is not clearly understood and could play a role in contributing to the pool of high chloride ground water.

As stated above, many of the sources have not exceeded the 1,000 mg/l cap. Those that have, the baseline data suggest that these wells will never pump ≥1,000 mg/l again unless there is an influx of less saline water (e.g. reuse, an increase of recharge from storms i.e. a more normal weather pattern) or a complete cessation of pumpage. In the meantime, those operators with wells and/or batteries >1,000 mg/l chloride should apply for a variance from the 1,000 mg/l cap. It should be implicitly stipulated that once reuse is available, then these wells will only be used as back-up sources or blended with reuse water to a quality of 1,000 mg/l or less.

References:


Ewa Beach International Golf Club

Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year

0 1 2 3 4 5 6 7 8 9 10

1,000 Cl Cap

Well 1900-21 (Pond E)
U. S. Fish and Wildlife Well 2101-14
Pumpage and Chlorides

EXHIBIT 7
Haseko EP 27
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

0 1 2 3 4 5 6 7 8 9 10

J94 J95 J96 J97 J98 J99 J00 J01 J02

1,000 Cl Cap  EP27 Pit  EP 27 Pipe
Coral Creek Golf Course Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year

1,000 Cl Cap ● Lake Well 1 ■ Well 2 ▼ Well 1 x Well 4

Monthly Chloride (mg/l)
Kapolei City Wells (Campbell Estate)

Pumpage and Chlorides

Average Monthly Pumpage (mgd)

10
9
8
7
6
5
4
3
2
1
0

Month/Year

1,000 Cl Cap

Well 1905-10 (West Well)

Well 1905-08 (East Well)
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

- Sampling Schedule

  The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
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<tbody>
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<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
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- When to Sample

  Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

- Sample Bottle

  Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

- Labeling

  On the sample bottle, affix a label that contains the following information:

  Well No.
  Date
  Time Sampled
  Elapsed Time after pump on
  Sampler’s Name
  Water Temperature (if available)
  Pumping Rate (prior to sampling)
2. **Determination of Chloride Concentration**

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. **Be consistent with the end-point color change.**

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** **Be consistent with the end-point color.** Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. Reporting Results

- How to Report

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

Under "Notes" Section of the Monthly Water Use Report:

2. Method used for chloride analysis: ____________

3. Total elapsed time before sampling: ____________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
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1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

a. Reduce the demand for non-potable water by:
   - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
   - Mulching planting areas with organic materials, etc., to minimize evaporation;
   - Efficiently maintaining the plants;
   - Improving land management practices to conserve water.

b. Improve efficiency in use and reduce losses and waste of non-potable water by:
   - Using efficiently designed landscaping and irrigation systems;
   - Monitoring irrigation requirements and controlling usage accordingly;
   - Managing irrigation scheduling to minimize water demand;
   - Eliminating opportunities for water wastage;
   - Maintaining and improving irrigation systems as necessary.

c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 9
MEMORANDUM FOR THE RECORD
November 1, 2000

FROM: Lenore Nakama
SUBJECT: Unregistered Injection Well at Ewa Marina Project

Chauncey Hew from DOH, UIC called to give a heads up that this letter was coming. In responding to a complaint of an illegal injection well, DOH conducted a field investigation and found that EP 27 appeared to be pumping continuously to a lined pond with an injection well. The lined pond provides storage for dust control water and the excess water is being reinjected back into the aquifer.

Per Glen, there is a lot of construction going on in the area, and Haseko may be keeping the pump operating to avoid someone having to run out and turn the pump on everytime a truck needs to refill (which may pose a danger because of all the heavy trucks operating in the area).

Per Roy, the well is being used for one of its permitted uses – dust control. Excess water is being pumped back into the aquifer for recharge. Haseko may have chosen to incur higher pumping costs for more efficient dust control during construction. We should monitor the chlorides to ensure that they remain below 1,000 ppm. We do not necessarily consider this a waste of water.
Mr. Nelson W.G. Lee  
Executive Vice President  
Haseko (Ewa), Inc.  
820 Mililani Street, Suite 810  
Honolulu, Hawai‘i 96813  

Dear Mr. Lee:

SUBJECT: OPERATION OF AN UNREGISTERED INJECTION WELL  
AT HASEKO EWA MARINA PROJECT

We have observed on your property what appears to be an unregistered injection well located in the center of a lined pond used to store water to fill water trucks. The injection well appears to function as an overflow drain to prevent the pond from overflowing as piped water continuously flows into the pond. The injection well casing is PVC and has a diameter of about 8 to 10 inches. The portion of the casing that was visible contained small drill-hole perforations. The top of the casing was open. The length (depth) of the casing could not be observed.

Enclosed is an Underground Injection Control (UIC) permit-application form to register the injection well with a UIC permit. The operation of an injection well must be authorized through a UIC permit issued by the Department of Health to the operator/owner (permittee) of the injection well. A UIC permit contains the term and conditions under which the permittee must comply to operate the injection well. Monitoring and reporting requirements are specifically described in the UIC permit. When the use of the injection well is finished, the permittee must apply for well abandonment, and the Department will issue specific injection well abandonment instructions.
Regulations governing an injection well are under the Hawai‘i Administrative Rules (HAR), Title 11, Chapter 23, Underground Injection Control. A copy of the rule (Chapter 23) is enclosed for your reference.

Please submit a complete application and filing fee, payable to the State of Hawai‘i, by November 10, 2000. Because the application involves hydraulic, geologic, and injection well design and construction subjects, we recommend that an appropriate person be used to complete and service the UIC application. A complete and accurate application expedites processing.

Please mail your materials to:

Safe Drinking Water Branch
Environmental Management Division
State Department of Health
919 Ala Moana Blvd., Room 308
Honolulu, Hawai‘i 96814

If you have any questions about this subject, please call Chauncey Hew of the Safe Drinking Water Branch at 586-4258.

Sincerely,

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

Enclosures: 1. Existing Injection Well Application For A UIC Permit To Operate & Instructions
2. Chapter 23
# Receipt for Certified Mail

**No Insurance Coverage Provided**

Do not use for International Mail

(See Reverse)

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**Sent to:**

Mr. Nelson W.G. Lee

**Street and No.:**

820 MiliMali St., Ste. 810

**City and ZIP Code:**

Honolulu, HI 96813

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*Postmark or Date*

FEB 19 1999

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**PS Form 3800, March 1993**
1. Do not affix gummed stub to the right of the return address.
2. Address return receipt at a post office service window or hand it in.
3. After personalizing, attach the gummed stub to the right of the return address, and return the receipt, and mail the article.
4. Indicate the certified mail number and your name and address on a mailing label or receipt, and attach it to the front of the article by means of the gummed strip provided. The space after mark of article. Endorse front of article RETURN RECEIPT REQUESTED adjacent to the number.
5. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse RESTRICTED DELIVERY on the front of the article.
6. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable block in Form 3811.
7. Save this receipt and present it if you make inquiry.
I also wish to receive the following services (for an extra fee):

1. [ ] Addressee’s Address
2. [ ] Restricted Delivery
3. [ ] Certified
4. [ ] COD
5. [ ] Return Receipt for Merchandise

SENDERS:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write “Return Receipt Requested” on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

3. Article Addressed to:
   Mr. Nelson W.G. Lee
   Haseko (Ewa), Inc.
   820 Mililani St., Ste. 810
   Honolulu, HI 96813

(Well #1902-01)

4a. Article Number
   Z 066 768 201

4b. Service Type
   [x] Registered
   [ ] Insured
   [ ] Certified
   [ ] COD
   [ ] Express Mail
   [x] Return Receipt for Merchandise

7. Date of Delivery
   2/22/99

5. Signature (Addressee)
   [ ] Linden

6. Signature (Agent)

8. Addressee’s Address (Only if requested and fee is paid)

DOMESTIC RETURN RECEIPT
Print your name, address and ZIP Code here

COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. Box 621
Honolulu, Hawai'i 96813

Attn: Lenore
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani Street, Suite 810  
Honolulu, HI 96813  

Dear Mr. Lee:  

Notice of Action  
Proposed Revocation/Modification of Water Use Permit (WUP No. 192)  
Proposed Extension of Interim Water Use Permit (WUP No. 347)  
EP 27/Haseko Well No. 1 (Well No. 1902-01)  
Puuloa Ground Water Management Area, Oahu  

This corrects our previous Notice of Action, dated October 27, 1998, on the staff's proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01).  

Our previous notice was correct where by a unanimous vote of the Commission at their meeting of October 22, 1998, the Commission deferred action on WUP No. 192 at the request of the Attorney General's Office pending a legal analysis of what process is required to modify conditions of a permit that was the subject of a contested case hearing.  

However, the Commission also extended WUP No. 347, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):  

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.  

b. 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.  

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.
d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected
      uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become
   available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol (Attachment B) and the
   submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions (Attachment C).

The Commission decided that interim permittees shall be notified by letter of the
Commission action and extended permit duration and that re-issuance of new interim water use
permits for these extended permits is unnecessary.

Please be advised that the Commission directed staff to strictly enforce the weekly water
data reporting requirement and the requirement to submit a water shortage plan. (If you have not
done so already, please submit your water shortage plan, as required under Standard Condition
17.) In addition, all interim permittees will be sent the monthly bulletin which shows all pending
permit applications. Permittees are encouraged to review new applications and water data from
nearby wells to proactively protect their sources.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

EDWIN T. SAKODA
Acting Deputy Director

LN:ss
Attachments
November 13, 1998

Timothy Johns, Esq.
Deputy Director
Department of Land & Natural Resources
Kalanikau Building
1151 Punchbowl Street
Room 227
Honolulu, HI 96813

RE: Proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01)

Dear Mr. Johns:

Thank you for your October 27, 1998 letter informing us that the Commission deferred action on the subject water use permits at the October 22, 1998 Commission meeting. We appreciate the consideration given to our unique situation, given our contested case hearing and the recent final decision and order.

This is to inform you that Haseko (Ewa), Inc. is willing to voluntarily reduce its WUP No. 192 to the 0.770 mgd amount recommended by your Staff.

We understand that your Staff recommends that:

1. The 1.8 mgd permanent allocation for agricultural uses, currently existing under WUP 192, be reduced to 0.770 mgd under a new interim water use permit; and

2. The existing 1.5 mgd interim water use permit, WUP No. 347, be extended subject to the conditions listed in the Staff Submittal (Extension of Water Use Permits, Puuloa and Kapolei Ground Water Management Areas, Oahu) dated October 22, 1998.
Haseko (Ewa), Inc. has reviewed the staff submittal in connection with the final decision and order in the contested case, which refers specifically to the subject WUPs by number. Based on that review and mindful of Staff's recommendations, we believe that WUP No. 192 and WUP No. 347 should retain the same identification numbers and classifications (permanent and interim, respectively), but the allocation under WUP No. 192 may be reduced to 0.770 mgd as recommended by your Staff. Under our voluntary reduction in allocation, WUP No. 192 would remain a permanent permit but at a reduced allocation of 0.770 mgd and interim WUP No. 347 would be extended as recommended by your Staff.

Thank you for your consideration and cooperation. Please call me if there is any further action required on our part to implement the reduction for WUP No. 192.

Very truly yours,

Nelson W. G. Lee
Executive Vice President

cc: Linnel Nishioka, Esq.
Angela Fong, Esq.
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani Street, Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Notice of Action
Proposed Revocation/Modification of Water Use Permit (WUP No. 192)
Proposed Extension of Interim Water Use Permit (WUP No. 347)
EP 27/Haseko Well No. 1 (Well No. 1902-01)
Puuloa Ground Water Management Area, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on the staff’s proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01).

By a unanimous vote of the Commission at their meeting of October 22, 1998, the Commission deferred action on WUP Nos. 192 and 347 at the request of the Attorney General’s Office pending a legal analysis of what process is required to modify conditions of a permit that was the subject of a contested case hearing.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

TIMOTHY E. JOHNS
Deputy Director

LN:ss
STATE OF HAWAII 
DEPARTMENT OF LAND AND NATURAL RESOURCES 
COMMISSION ON WATER RESOURCE MANAGEMENT 
P.O. BOX 821 
HONOLULU, HAWAII 96808

STAFF SUBMITTAL

for the meeting of the 
COMMISSION ON WATER RESOURCE MANAGEMENT

October 22, 1998 
Honolulu, Oahu

Haseko (Ewa), Inc. 
REVOCATION/MODIFICATION OF WATER USE PERMIT
EP 27, Well No. 1902-01 (WUP No. 192) 
Puuloa Ground Water Management Area, Oahu, TMK 9-1-12:5

LOCATION MAP: See Exhibit 1

BACKGROUND:

On December 16, 1992, the Commission approved a water use permit (WUP No. 192) for Well No. 1902-01 for Oahu Sugar Company, Ltd. (OSCO) as water user jointly with Haseko Hawaii, Inc. as source landowner for 4.160 mgd.

In the summer of 1993, OSCO announced the closure of its sugarcane operations.

On May 18, 1994, Haseko (Ewa), Inc. (Haseko) submitted a completed water use permit application to modify WUP No. 192 to allow 1.500 mgd of ground water to be used for construction and operation of a proposed 27-hole golf course and roadway landscaping for the Ewa Marina project, including interim use for dust control and maintenance irrigation for fallow fields. The remaining allocation would be retained for agricultural use.

On July 13, 1994, the Commission approved WUP No. 347 for 1.500 mgd. WUP No. 192 was modified and reduced to 2.660 mgd for agriculture use.

In a letter dated May 12, 1995, Haseko notified the Commission of the transfer of the water use permit(s) (WUP Nos. 347 and 192) for Well No. 1902-01 from OSCO, effective April 1, 1995.

On May 14, 1997, the Commission modified WUP No. 192 by reducing the permitted use for agriculture from 2.660 mgd to 1.800 mgd (Exhibit 2).
ANALYSIS/ISSUES:

Exhibit 3 shows that the pump was shut off in September, 1994 and remained inactive for about two (2) years. Haseko has since planted about 100 acres of hay as an interim land use pending the development of the Ocean Pointe project (formerly Ewa Marina). The current twelve-month moving average withdrawal for agriculture is 0.770 mgd.

Partial or total nonuse of the water allowed by the permit for a period of four continuous years or more constitutes a ground for revocation of the permit, pursuant to §174C-58(4) Hawaii Revised Statutes (HRS). In the four (4) years since the pump was completely shut off, only 0.770 mgd of the 1.800 mgd agricultural allocation has been used. As such, the Commission may revoke 1.030 mgd at this time.

The guideline for turf irrigation in the Ewa area is between 4,000 gpd/acre (Hawaii Water Systems Standards, 1985 - Domestic Consumption Guideline) and 4,700 gpd/acre (May 14, 1997 Staff Submittal - Hawaii Prince Request for Variance from Domestic Consumption Guideline). Based on these guidelines, 0.400 mgd to 0.470 mgd would appear reasonable for 100 acres of hay in the Ewa area. The staff could not confirm whether the agricultural operations have expanded, which could account for the current 0.770 mgd 12-month moving average withdrawal. However, this is for an existing agricultural use that is a temporary use pending the construction of the Ocean Pointe project. Should the Ewa Marina be excavated as proposed, Haseko concedes that the utility of the well would be lost. The staff is planning to investigate the agricultural operations for any obvious signs of wastage during their next monthly sampling run.

The terms and conditions of WUP No. 192 are shown in Exhibit 2. The staff recommends that the Commission replace the standard and special conditions of WUP No. 192 with the set of conditions that have been attached to permits for new irrigation uses in the Ewa Caprock because:

1) hydrologic conditions have changed since this permit was originally granted - Exhibit 4 shows that the 1992 approval occurred when low chloride basal water was being imported to the caprock by OSCO, which artificially enhanced the caprock aquifer. Although chlorides at some EP wells were already beginning to rise, the complete cessation of sugarcane agriculture will diminish the reliability of the aquifer and users' ability to pump; and

2) reclaimed water will soon become available as an alternate nonpotable supply source.

This submittal fulfills the hearing requirement under §174C-58 HRS for revocation of a water use permit.

RECOMMENDATION:

That the Commission approve the issuance of an interim water use permit (WUP No. 518) to Haseko (Ewa), Inc. for the reasonable and beneficial use of 770,000 gallons per day of brackish water for agricultural use from EP 27 (Well No. 1902-01), subject to the Standard Water Use Permit Conditions listed in Attachment B and the following Special Conditions:
1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

2. 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.

3. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

4. The duration of the interim permit shall be to
   a. to July, 2001, or
   b. until treated wastewater is available, acceptable, and affordable for use, or
   c. until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

5. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

6. Require adherence to the chloride sampling protocol shown in Exhibit 5 and the submittal of weekly chloride data.

7. Require adherence to the Conservation Conditions shown in Exhibit 6.

8. In the event a water shortage is declared by the Commission, permittees shall comply with the Puuloa water shortage plan adopted by the Commission.

9. This water use permit, WUP No. 518, supersedes WUP No. 192.

Respectfully submitted,

TIMOTHY E. JOHNS
Deputy Director

Attachment(s): A (Standard Water Use Permit Conditions)

Exhibit(s):

1 (Location Map)
2 (WUP No. 192)
3 (Graph of Monthly Pumpage for Well No. 1902-01)
4 (Chloride and Pumpage of Ewa Plantation Shallow Wells, 1930-1995)
5 (Chloride Sampling Protocol)
6 (Conservation Conditions)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

ATTACHMENT A
10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Millilani St., Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu

This letter transmits your modified water use permit for EP 27 (Well No. 1902-01) for use of 1.800 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission’s approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. Standard Condition 18 for interim water use permits shall not apply.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

In addition, the Commission is requiring you to conduct a pump test by June 14, 1997 to confirm that the source can sustain withdrawals at the modified permitted amount without exceeding 1,000 mg/l of chloride. The Commission has delegated the authority to approve or modify the proposed pump test procedure to the Commission staff.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

Michael D. Wilson
Chairperson
GROUND WATER USE PERMIT
WUP NO. 192

PERMITTEE

Applicant/Water User
HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

Landowner of Source
Address
HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

PERMITTED SOURCE INFORMATION

Island
OAHU

Water Management Area
PUULOA

Aquifer Sector
EWA CAPROCK

Aquifer System
PUULOA

System Sustainable Yield
NA

Well Name
EP 27

State Well No.
1902-01

PERMITTED USE INFORMATION

Reasonable beneficial use
AGRICULTURE

Withdrawal (12 month moving ave.)
1,800 mgd

Chloride Cap
1,000 mg/l

Location of water use
TMK #
OSCO FIELDS 71,84,86,88.(POR)91

Address
EWA, OAHU

State land use classification
URBAN

County zoning classification
P-2, RESORT, B-5, B-2, A-1, A-2

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:

EXHIBIT 2
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest" (HRS § 174C-3).

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.

EXHIBIT 2
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee’s water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUAUOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

[Signature]
MICHAIL D. WILSON, Chairman
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant’s Signature: ____________________________ Date: __________________

Printed Name: ____________________________ Firm or Title: ____________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
Haseko (Ewa) Inc. Pumpage EP27
Well No. 1902-01

Date (latest data 7/98)

- Monthly pumpage
- 12-MAV
- WUP allocation
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Start 1937

Basal (low Cl) irrigation
Pumps 15,16

Total imported basal water from Koolau ranged < 50-70 mgd

Average monthly pumpage (mgd)

Est. average yearly pumpage (12)

Ref: CWRM, BWS Bas., R-79, & Stearns (1935, 1940)

1. Sample Collection

- Sampling Schedule

The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

- When to Sample

Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

- Sample Bottle

Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

- Labeling

On the sample bottle, affix a label that contains the following information:

- Well No.
- Date
- Time Sampled
- Elapsed Time after pump on
- Sampler's Name
- Water Temperature (if available)
- Pumping Rate (prior to sampling)
2. **Determination of Chloride Concentration**

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. **Be consistent with the end-point color change.**

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** **Be consistent with the end-point color.** Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. **Reporting Results**

   - How to Report

   The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

   1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

   **Under "Notes" Section of the Monthly Water Use Report:**

   2. Method used for chloride analysis: ________________

   3. Total elapsed time before sampling: ________________

   If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
## FIVE WELL VOLUMES\(^1\) PLUS 60 MINUTES
**MINIMUM TIME BEFORE CHLORIDE SAMPLING**

<table>
<thead>
<tr>
<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
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<tr>
<td></td>
<td>10-20</td>
<td>140</td>
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<td>20-50</td>
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<td>700-1000</td>
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<td>700-1000</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>&gt;1000</td>
<td>72</td>
</tr>
</tbody>
</table>

\(^1\) Assumes saturated well depth of 100 feet.

\(^2\) Five well volumes is a standard guideline recommended by EPA.

**EXHIBIT 5**
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:
      
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 6
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 637
HONOLULU, HAWAI 96808

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT
October 22, 1998
Honolulu, Oahu

EXTENSION OF INTERIM WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

PERMITEE(S):

(Well Nos. 1905-08, 10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-04, 07)
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 2003-01, 02, 05)
Kapolei People's Inc.
91-701 Farrington Hwy.
Kapolei, HI 96707

(Well Nos. 1900-02, 17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well No. 2001-03)
City and County of Honolulu
Department of Parks and Recreation
650 South King Street
Honolulu, HI 96813

(Well Nos. 2001-04, 09, 10)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

LANDOWNER(S):

Same

Same

Same

Same

Same
LOCATION MAP: See Exhibit 1

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Waialua, Ewa-Kunia, and Makaiwai Aquifer Systems. Due to uncertainties regarding the caprock’s sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock.

On April 28, 1993, the Commission awarded temporary one-year permits for new irrigation uses of ground water in the Ewa Caprock because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture. In analyzing water availability, the Commission used guidelines for sustainable yields for the Puuola, Kapolei, and Malakole areas (Yuen & Associates, Inc., 1989).

On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.
Staff Submittal

At the July 5, 1995 Commission meeting in Honokaa, Hawaii, the Commission extended the permits, which were now called interim permits, until such time that a formal decision could be made on Oahu.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a sustainable yield for the caprock.

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for individual irrigation wells at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The Commission also adopted the Puuloa, Kapolei, and Malakole Aquifer Systems in the Ewa Caprock Sector and approved pending applications for new and continued irrigation uses. The specified duration of the interim water use permits is to October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincides with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provides a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999.

ANALYSIS/ISSUES:

There has been no significant change in permitted, actual, or projected uses or water supply. Current interim water use permits and 12-month moving average withdrawals are shown in Exhibit 2. (Standard and Special Conditions of the interim permits are shown in Attachments A and B.) Exhibit 3 contains a complete listing of all permitted uses in the Puuloa and Kapolei Aquifer Systems. (Please note that the October 22, 1998 agenda includes three items that, if approved, will reduce the total permitted uses in Puuloa.)

PROTECTION OF THE RESOURCE

The current sustainable yield for the caprock aquifers is defined by a sustainable capacity at all irrigation wells in the Puuloa and Kapolei Aquifer Systems which prohibits individual pumpages that cause the specific well to exceed a 1,000 mg/l chloride cap. Enforcement of the chloride cap provides adequate protection for the aquifer.

The chloride cap is tied to anticipated wastewater reuse, which was planned to occur via a percolation trench to recharge the caprock aquifer with up to 13 million gallons per day (mgd) of treated effluent (Kumagai, 1996, Final Report. Recommendation for Water Reclamation, Nonpotable Water Plan for Oahu, Prepared for: Commission on Water Resource Management, State of Hawaii, and Department of Wastewater Management, City and County of Honolulu). However, the City now plans to deliver R-1 water directly to individual users. In either reuse application, the current sustainable yield method is and has been an effective means to protect the aquifer.

MAXIMIZING THE UTILITY OF THE RESOURCE(S)

Maximizing the utility of the caprock is intimately tied to wastewater reuse. As wastewater reuse comes on line, the sustainable yield of the caprock will increase, meaning more pumpage may be sustained under the 1,000 mg/l chloride limit. However, the distribution of reclaimed wastewater is uncertain, which will affect chloride distributions and total nonpotable supply. Although the City has not yet made reclaimed water available for nonpotable uses that will support their plans for urbanization of the Ewa area and the City-required dual water systems for new urban
developments, the City has indicated that private irrigation uses over the caprock may be served by reclaimed water by July, 2001. Of the projected total 13 mgd R-1 water from the Honouliuli Wastewater Treatment Plant, 1 mgd is needed for in-plant process water, and 2 mgd is planned for industrial uses at James Campbell Industrial Park. This leaves about 10 mgd available for irrigation needs in the region.

The City is in the process of finalizing a contract with U.S. Filters for the construction, operation, and marketing for a reclamation system. Until the contract is finalized, the City will not enter into any agreements with individual users for the purchase of the R-1 water. As such, Special Condition D (Attachment B) could not be met by the users, and these users should not be penalized for this noncompliance.

Given the City’s current plans, the staff estimates that the potential future supply of nonpotable water for irrigation uses on lands overlying the Puuloa Aquifer System, where the competition for nonpotable irrigation water is most severe, could be up to about 15 mgd: 10 mgd reclaimed water plus approximately 5 mgd natural sustainable yield (Bauer, 1996). This assumes that 100% of the treated effluent will be available for reuse in Puuloa, which is improbable. But the availability of reclaimed water will present permittees with a possible alternative should their wells exceed the 1,000 mg/l chloride limit. Likewise, should the 1,000 mg/l limit not be exceeded, the permittees may continue to pump and may even work out a management plan which would allow for alternating between caprock and wastewater reuse to maximize the economical use of both resources. But ultimately, based on current reclaimed water plans, total allocations should not exceed 15 mgd.

Management of the resource via a chloride cap was adopted on May 14, 1997 as an interim management plan, subject to review in two (2) years. By May, 1999 or as total allocations begin to approach the total nonpotable supply in Puuloa, the Commission may consider establishing a regional sustainable yield, which would be something less than 15 mgd for the Puuloa area, unless additional water supply (e.g., expansion of the wastewater reclamation plant) becomes available. It is uncertain whether the chloride cap would be supplanted by a regional sustainable yield number.

WELL INTERFERENCE

Since there are no ground-water models (solute-transport) which can predict chloride response to pumpage at individual well sites, close monitoring of the resource and enforcement of the chloride cap is critical to protect the resource in this interim period while the City finalizes plans to implement a reclamation program. Exhibit 6 shows that the caprock aquifer was significantly influenced by sugarcane irrigation practices and is still in a state of flux. Currently, all interim permittees are required to submit weekly reports of pumpage, water levels, chlorides, and water temperature (unless a variance from this requirement has been approved). All permittees are put on notice that the reporting requirement will be strictly enforced.

Although enforcement of the 1,000 mg/l chloride cap at each well site will provide adequate protection for the resource, it may not be sufficient to preclude well interference. However, not only will wastewater reuse further protect the resource, it will also help to reduce the effects of well interference that may cause individual wells to exceed the 1,000 mg/l chloride cap. Special Condition e. has been added to the existing interim permits recommended for extension and will be added to all future caprock permits to put the permittees on notice of the risk of reliance on caprock ground water and its uncertain sustainable yield.

The staff proposes to send all interim permittees in Puuloa the monthly bulletin which shows all pending permit applications, which should provide the permittees sufficient notice of new proposed uses of Puuloa Caprock ground water. Permittees should review new applications and water data from other nearby wells to proactively protect their sources. Permittees are encouraged to submit comments or objections in accordance with Administrative Rule 13-171-18 (Objection to Proposed
Staff Submittal

October 22, 1998

Water Use Permit). Further, the staff has been analyzing the weekly water data reports, and we are currently working on triggers to implement a water shortage plan. These triggers may be related to some modification of Exhibit 6. Should valid claims of well interference be raised, either by permittees or as a result of the staff's analysis, the Commission may consider implementing a water shortage plan to address the well interference issue.

However, at this time, only an informal and incomplete water shortage plan exists. On May 14, 1997, the Commission approved a permit classification system for a water shortage plan for the Puuloa Aquifer System as provided under Administrative Rule 13-171-42:

"(a) The commission shall formulate a plan for implementation during periods of water shortage. As a part of the plan, the commission shall adopt a reasonable system of permit classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.

(b) In accordance with this chapter, the commission may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

(c) All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission."

The highest priority of nonpotable use is agriculture because the State's policy is to promote agriculture, and also because agricultural correlative uses are assured through the 1978 Constitutional Amendment. The second priority in water use is golf course irrigation because of the economic impacts that may result from inadequate water supply. The lowest priority in water use is landscape irrigation and dust control.

The priorities assigned to each permitted use and the maximum reductions indicated in the individual users' water shortage plans are shown in the last two columns of Exhibit 7. Individual water shortage plans outline smaller initial cutbacks (i.e., 10% to 30%), however under the most severe shortage situations, Exhibit 7 shows the maximum reduction in Puuloa Aquifer System pumpage would have been at least 3.718 mgd. However, this 3.718 mgd amount is subject to change following proposed revocation actions for unused agricultural allocations and formulation and adoption of a regional shortage plan.

Water shortage plans were requested from all of the users in Puuloa, with the exception of United States Fish and Wildlife Service. The requirement to submit individual water shortage plans is highlighted in the cover letter which transmits the permit and is also stated in Standard Condition 17. Not all users have submitted water shortage plans nor returned signed permits (see Exhibit 8). The staff will continue to work with these users to develop their individual plans. As part of the May 14, 1997 action, the Commission has also delegated the authority to the Chairperson to approve individual water shortage plans and the regional water shortage plan for the Puuloa Aquifer System.

RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 2, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

   a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.
b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available, acceptable, and affordable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol shown in Exhibit 4 and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions shown in Exhibit 5.

h. In the event a water shortage is declared by the Commission, permittees shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

3. Letter 1902-01 pending legal analysis of process required to modify the condition as a permit that was the subject of a CCH.

Respectfully submitted,

TIMOTHY E. JOHNS
Deputy Director

Attachment(s):
A (Standard Conditions for a Water Use Permit)
B (Special Interim Water Use Permit Conditions)

Exhibit(s):
1 (Location Map)
2 (Current Interim Permitted Uses, Puuloa and Kapolei Aquifer Systems)
3 (Current Permitted Uses, Puuloa and Kapolei Aquifer Systems)
4 (Chloride Sampling Protocol)
5 (Conservation Conditions)
6 (Chloride and Pumpage of Ewa Plantation Shallow Wells)
7 (Partial Water Shortage Plan)
8 (Summary of Unsigned Permits and No Water Shortage Plan)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

ATTACHMENT A
Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the Puuloa or Kapolei Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa or Kapolei Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
SPECIAL INTERIM WATER USE PERMIT CONDITIONS

a. The duration of the interim permits shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use or water supply occurs.

b. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data.

c. Require adherence to the Conservation Conditions shown in Exhibit 12.

d. Require the following PCUG members to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy reclaimed water by July 1, 1999 for the cumulative amounts specified in Exhibit 7 (Pro-Rata Share):

1) Gentry Investment Co. - Commitment to use a total of 0.430 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well No. 2002-15 and Well No. 2001-10.

2) Haseko (Ewa), Inc. - Commitment to use a total of 0.40 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well No. 1902-01.

3) Hawaii Prince Golf Club - Commitment to use a total of 0.40 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well Nos. 1900-02, 17 to 20 & 1901-03.

4) Ewa Beach International Golf Club - Commitment to use a total of 0.27 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well Nos. 1900-21,22 & 1959-08.
ISLAND OF OAHU
WMA Aquifer System: KAPOLEI
Sustainable Yield = mgd

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7 Permits Totalling Available SY 1.796 1.350

EXHIBIT 2
## Current Active Water Use Permits

*Excluding salt water use permits (ftp:/\work\database\reports\wup-wma.rpt)*

### October 7, 1998

- **ISLAND OF OAHU**
  - **WMA Aquifer System:** PUULOA
  - **Sustainable Yield:** mgd

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### 21 Permits Totaling 4.826 mgd Available SY

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**EXHIBIT 2**

*(ftp:/\work\database\reports\wup-wma.rpt)*
### Current Active Water Use Permits
(Excluding salt water use permits)

**October 7, 1998**

**ISLAND OF OAHU**

**WMA Aquifer System:** PUULOA

**Sustainable Yield:** mgd

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<td>498</td>
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<td>2002-18</td>
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<td>U.S. FISH &amp; WILDLIFE</td>
<td>2101-14</td>
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</table>

**38 Permits Totalling 17.196 Available SY**

**EXHIBIT 3**

(f:/work/database/reports/wup-wma.rpt)
### Current Active Water Use Permits

Excluding salt water use permits...

**ISLAND OF OAHU**

**WMA Aquifer System:** KAPOLEI

**Sustainable Yield:** mgd

<table>
<thead>
<tr>
<th>No. Approved</th>
<th>Applicant</th>
<th>Well No</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>162</td>
<td>PUU MAKAKILO INC.</td>
<td>1904-02</td>
<td>MAKAKILO GC</td>
<td>1.150</td>
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<tr>
<td>247</td>
<td>PUU MAKAKILO INC.</td>
<td>1904-03</td>
<td>MAKAKILO GC STBYDB</td>
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<tr>
<td>182</td>
<td>CAMPBELL ESTATE</td>
<td>1905-08</td>
<td>KAPOLEI IRR 1</td>
<td>0.302</td>
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<td>CAMPBELL ESTATE</td>
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<tr>
<td>438</td>
<td>KAPOLEI PEOPLE'S, INC.</td>
<td>2003-01</td>
<td>KAPOLEI G COURSE A</td>
<td>1.000</td>
</tr>
<tr>
<td>438</td>
<td>KAPOLEI PEOPLE'S, INC.</td>
<td>2003-02</td>
<td>KAPOLEI G COURSE A</td>
<td></td>
</tr>
<tr>
<td>432</td>
<td>STATE HFDC</td>
<td>2003-04</td>
<td>KAPOLEI IRR D</td>
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<tr>
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<td>STATE HFDC</td>
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<td>KAPOLEI G COURSE A</td>
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<td>STATE HFDC</td>
<td>2003-07</td>
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</table>

**EXHIBIT 3**

(f:\work\database\reports\wup-wma.rpt)
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection
   • Sampling Schedule

   The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

   • When to Sample

   Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

   • Sample Bottle

   Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

   • Labeling

   On the sample bottle, affix a label that contains the following information:

   Well No.
   Date
   Time Sampled
   Elapsed Time after pump on
   Sampler's Name
   Water Temperature (if available)
   Pumping Rate (prior to sampling)
2. **Determination of Chloride Concentration**

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. **Be consistent with the end-point color change.**

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** **Be consistent with the end-point color.**

  Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. **Reporting Results**

**How to Report**

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

**Under "Notes" Section of the Monthly Water Use Report:**

2. Method used for chloride analysis: ______________

3. Total elapsed time before sampling: ______________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
<table>
<thead>
<tr>
<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
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<td>140</td>
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<td>20-50</td>
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<td>10-20</td>
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<td>20-50</td>
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<td>75</td>
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<tr>
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<td>&gt;250</td>
<td>75</td>
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<td>&gt;1000</td>
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</table>

1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.
   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.
   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 5
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

FIGURE 7

- EP-20
- EP-21
- EP-22
- EP-23
- EP-24
- EP-27,28
- EP30

Ref: CWRAD, BWSBas, R-78, & Storms (1935, 1940)
## Allocation Plan, Ewa Caprock Ground Water Management Area, Puuloa

### Water Shortage Plan

<table>
<thead>
<tr>
<th>User</th>
<th>Well Name/No.</th>
<th>Use</th>
<th>Current Allocation</th>
<th>Recommended Allocation</th>
<th>Basis</th>
<th>Water Shortage Plan</th>
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<td>Priority&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Reduction&lt;sup&gt;2&lt;/sup&gt;</td>
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<td><strong>Pre-1978 Permanent Permits</strong></td>
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<tr>
<td>Campbell</td>
<td>EP 21/2000-01</td>
<td>Ag</td>
<td>2.080</td>
<td>2.080</td>
<td>Existing Use</td>
<td>1</td>
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<tr>
<td>Haseko</td>
<td>EP 27/1902-01</td>
<td>Ag</td>
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<td>1.800</td>
<td>Ag acreage</td>
<td>1</td>
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<td>Navy</td>
<td>EP 23/2001-01</td>
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<td>Hawai‘i Prince</td>
<td>EP 22, Wells 1 to 5/1900-02,17 to 20,1901-03</td>
<td>G.Course</td>
<td>0.900</td>
<td>0.900</td>
<td>Actual Use</td>
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<td>0.700</td>
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<td>0.500</td>
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<tr>
<td>Gentry</td>
<td>Ewa Gentry/2001-02</td>
<td>Landscape</td>
<td>0.080</td>
<td>0.040</td>
<td>Projected</td>
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<td>Palm Villa I Assoc.</td>
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<td><strong>USFWS</strong></td>
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<td>Wildlife Sanctuary</td>
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<td>G.Course</td>
<td>1.080</td>
<td>1.080</td>
<td>Projected</td>
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</tr>
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<td>Landscape</td>
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<td>Actual Use</td>
<td>3</td>
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<td>Sunrise Apt./2001-04</td>
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<td>0.040</td>
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<td>Gentry</td>
<td>Soda Creek III/2001-05</td>
<td>Landscape</td>
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<td>0.066</td>
<td>Actual Use</td>
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<tr>
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1. Highest priority (Ag)
2. Intermediate priority (G. Course)
3. Lowest priority (Landscape Irr. dust control)

Maximum reduction indicated in water shortage plan.
Current Active Water Uf)Permits (Excluding salt water use per ... of October 15, 1998

ISLAND OF OAHU
WMA Aquifer System: PUULOA
Sustainable Yield = mgd

<table>
<thead>
<tr>
<th>Well No</th>
<th>Well Name</th>
<th>Signed</th>
<th>WUP (mgd)</th>
<th>Shortage Plan</th>
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<tbody>
<tr>
<td>152</td>
<td>10/19/88</td>
<td>HAWAII PRINCE GOLF CLUB</td>
<td>1900-02 EP 22</td>
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38 Permits Totalling Available SY: 17.195

EXHIBIT 8
**Current Active Water Use Permits** (Excluding salt water use permits) (f:/wup-wma.rpt)  
October 15, 19

ISLAND OF OAHU  
WMA Aquifer System: KAPOLEI  
Sustainable Yield = mgd

<table>
<thead>
<tr>
<th>No.</th>
<th>Approved Date</th>
<th>Applicant</th>
<th>Well No</th>
<th>Well Name</th>
<th>Signed Date</th>
<th>WUP (mgd)</th>
<th>Shortage Plan</th>
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<tbody>
<tr>
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<td>KAPOLEI IRR 1</td>
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<td>2003-01</td>
<td>KAPOLEI G COURSE A</td>
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</tr>
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</table>

9 Permits Totaling 2.946 mgd Available SY

**EXHIBIT 8**
MEMORANDUM

TO: Tim Johns, Deputy Director, CWRM
FROM: Linnel T. Nishioka, Deputy Attorney General
RE: Haseko Water Use Permits, Items 9 and 12.

I am requesting that the Commission defer any action on Haseko WUP 192 (item 9) and WUP 347 (item 12). Both permits were referenced in the final decision and order of the Commission in the Ewa Marina case. Currently our office is analyzing the legal issue of what process is required to modify any conditions of that permit that were the subject of the contested case hearing. We are undertaking a careful analysis of the issue since any advice given on this case would probably impact the other pending decisions, including Waiahole, Laie, and Waiola. In the meantime, we request that the Commission not take any action on these permits until our analysis is completed. We anticipate an answer prior to the next commission meeting in November, 1998. Thank you for your patience in this matter, it is greatly appreciated. Please contact me at 587-2990 should you have any questions or wish to discuss any matter further.
MEMORANDUM

TO: Tim Johns, Deputy Director, CWRM

FROM: Linnel T. Nishioka, Deputy Attorney General

RE: Haseko Water Use Permits, Items 9 and 12.

I am requesting that the Commission defer any action on Haseko WUP 192 (item 9) and WUP 347 (item 12). Both permits were referenced in the final decision and order of the Commission in the Ewa Marina case. Currently our office is analyzing the legal issue of what process is required to modify any conditions of that permit that were the subject of the contested case hearing. We are undertaking a careful analysis of the issue since any advice given on this case would probably impact the other pending decisions, including Waiahole, Laie, and Waiola. In the meantime, we request that the Commission not take any action on these permits until our analysis is completed. We anticipate an answer prior to the next commission meeting in November, 1998. Thank you for your patience in this matter, it is greatly appreciated. Please contact me at 587-2990 should you have any questions or wish to discuss any matter further.
April 28, 1998

Mr. Edwin Sakoda, Acting Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Edwin Sakoda:

Subject: Reuse Agreements Between the City and County of Honolulu and Gentry, Ltd.; Haseko, Inc./Coral Creek Golf Course; and Hawaii Prince Golf Course

This is to inform you that the City and County of Honolulu has issued an award to U.S. Filter Corporation (USF) for a contract to design, build, and operate a 13 mgd wastewater reclamation facility for beneficial reuse of the secondary effluent from the Honolulu Wastewater Treatment Plant.

The project will be implemented in two phases. Phase 1 will treat 8 mgd of secondary effluent to R-1 quality standards: 2 mgd will undergo further treatment for use as industrial service water for Campbell Industrial Park; 2 mgd is for Honolulu in-plant uses; 2 mgd is for irrigation of City owned golf courses West Loch and Ewa Villages and 2 mgd is available for customers between the Honolulu plant and the City of Kapolei. In Phase 2 of the project USF will expand the capacity of the plant to 13 mgd by July 1, 2001. The remaining 5 mgd will be available to non potable users in the Ewa Plain for landscape and golf course irrigation.

We are aware that our reclamation facility is an integral factor in managing the Ewa Caprock and are pleased to be part of this effort. We have continued to meet with Gentry, Haseko, Hawaii Prince Golf Course, Coral Creek Golf Course and New Ewa Beach Golf Course and keep them informed of the City's progress for the R-1 facility. The City, however, will not be able to enter into formal agreements regarding the purchase of reclaimed water in accordance with the timetable established for these permit users in their interim permits.

We suggest that the date to enter into agreements to purchase the reclaimed water be extended to October 31, 1999, or soon thereafter. As Phase 2 of the reclamation facility is developed, we will have a more definite time frame for the availability and cost of the
reclaimed water. The City will then be able to obtain commitments from customers to buy reclaimed water. We do look forward to coordinating the City's efforts with the Water Commission to make this water available for those now using groundwater from the Ewa Caprock.

If there are any questions, please do not hesitate to contact me at 527-6663.

Sincerely,

KENNETH E. SPRAGUE
Director

cc: Gentry Homes, Ltd.; Attn.: Jeffrey C. Dinsmore
560 N. Nimitz Highway, Suite 213
Honolulu, Hawaii 96817

Hawaii Prince Golf Club; Attn.: Garrick Iwamuro
91-1200 Fort Weaver Road
Ewa Beach, Hawaii 96706

Haseko, Inc.; Attn.: Nelson Lee
820 Miliiani Street, Suite 820
Honolulu, Hawaii 96813-2938
<table>
<thead>
<tr>
<th>TO:</th>
<th>INIT.</th>
<th>TO:</th>
<th>INIT.</th>
<th>FOR:</th>
<th>PLEASE:</th>
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<td>Signature</td>
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Neal, We don't want weekly reports do we? Not really, but Glen asked for it. Is this really necessary? I'm beginning to wonder if something temporary and necessary like dust control constitutes a 'change' in use. Even a farm may need to do dust control more regularly than a construction site. 0.315 rgy was approved for dust control.
March 3, 1998

MEMORANDUM FOR THE RECORD

FROM:     Glenn Bauer

SUBJECT:  Weekly Reporting of Chlorides by Haseko for EP-27

Haseko has submitted weekly pumpage, water level, and chloride data from their EP-27 source (well no. 1902-01). The question as to whether they should continue to report weekly or switch to monthly reporting has been asked. My feeling is that weekly reporting is valuable in this case because of the possibility that their water use permit for a marina will be granted. If, indeed it is, then weekly data will be collected from a proposed series of monitor holes surrounding the marina. These monitoring holes will be a part of the Corps of Engineers and CWRM permit requirements. Weekly reporting of EP-27 will provide us more baseline data to use in the monitoring of the Puuloa caprock aquifer.

Table 1 is a summary of the data that they have provided us and including the average weekly ocean level measured at Tom Nance’s tide gage established at Barbers Point Deep Draft Harbor for the expansion project. Also attached is a graph of the chloride, water level, ocean level, and pumpage data presented in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Week No.</th>
<th>Week Of</th>
<th>Chloride (mg/l)</th>
<th>Weekly % Change Of Cl Conc</th>
<th>Water Level (ft. msl)</th>
<th>Av. Ocean (ft. msl)</th>
<th>Weekly Q (mgd)</th>
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<td>-5.2</td>
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<td>1.02</td>
<td>1.43</td>
</tr>
<tr>
<td>3</td>
<td>11/10/97</td>
<td>928</td>
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<td>1.66</td>
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<td>1.68</td>
<td>1.20</td>
<td>1.43</td>
</tr>
<tr>
<td>6</td>
<td>12/1/97</td>
<td>888</td>
<td>-4.8</td>
<td>1.55</td>
<td>0.90</td>
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<tr>
<td>7</td>
<td>12/8/97</td>
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<td>1.57</td>
<td>1.06</td>
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<tr>
<td>8</td>
<td>12/15/97</td>
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<td>1.48</td>
<td>1.04</td>
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<tr>
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<td>12/29/97</td>
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<td>1/5/98</td>
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<td>1.36</td>
<td>0.97</td>
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<td>12</td>
<td>1/12/98</td>
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Table 1 and the graphical representation of the data are important in that chloride trends are clearly shown. The data also show that water quality improved from 994 mg/l to 888 mg/l over the first six weeks of use. From week no. 7 on, the chloride concentration seems to be directly
related pumpage. Average weekly water levels at EP-27 generally mimics the ocean tide measured at Barbers Point Harbor.

In summary, weekly water level, chloride, and pumpage data collected from EP-27 provide good baseline data prior to any construction of a marina. The data also show changes within the caprock aquifer that cannot be picked up by monthly sampling.
Weekly Chloride, Head, Pumpage, & Ocean Level @ EP-27 (Well No. 1902-01)

Week No. from 11/27/97-1/28/98

- Chloride
- Average Water Level
- Average Pumpage
- Average Ocean Level
February 17, 1998

Michael Wilson, Chairman,
and Members of the Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Re: Ocean Pointe: WUP No. 192 and WUP No. 347

Dear Chair Wilson and Commissioners:

On May 14, 1997, the Commission on Water Resource Management (Commission) granted Water Use Permit No. 347 which authorizes HASEKO (Ewa), Inc. to withdraw 1.5 mgd of nonpotable water from the Ewa Caprock Aquifer for golf course and landscape irrigation and construction dust control. At the same time, an existing water use permit (WUP No. 192) was modified to authorize withdrawal of 1.8 mgd from the Ewa Caprock for agricultural uses.

The purpose of this letter is severalfold: (1) To provide an update on the status of the project. (2) To correct errors in monthly usage reports that had been submitted for the months of November and December, 1997, and for January, 1998. (3) To provide a status report on the use of reclaimed wastewater as an alternative nonpotable water resource. (4) To report a transfer of land from HASEKO (Ewa), Inc. to HASEKO Homes, Inc.

Project Status. Ocean Pointe was formerly known as the Ewa Marina Community Development. Since the above-referenced water use permits were issued last May, there has been significant visible progress on the project. Following a groundbreaking ceremony in October, 1997, construction commenced in November on the first residential “cluster” component.

As we had reported in an October 24, 1997 letter to the Commission’s Deputy Director, the elevation of the Cluster site must be raised, approximately 10 feet in some areas, in accordance with mass grading plans approved by the City Department of Public Works. The approximately 1.2 million cubic yards of fill material needed for this purpose is being excavated from the marina footprint.
Thus, while the Cluster development is limited to 92.66 acres on the northeastern section of the property, construction activity is occurring over a much larger area.

Because there is yet no decision on HASEKO’s water use permit application for the marina, excavation for fill material has been confined to elevations above the water table. This limitation on depth of excavation has meant a greater expanse of excavated area. In turn, this has resulted in higher water requirements for dust control. Water for dust control is used on approximately 90 acres of the Cluster development site, approximately 40 acres of the excavation site, and another approximately 40 acres of roadways to and from the construction sites.

The dry windy weather has made constant watering a necessity. To date, HASEKO has not received any complaints from its neighbors about fugitive dust.

In applying for WUP No. 347, we had provided the Commission with a schedule of the project’s nonpotable water needs for the period October 1997 to July 1998. Attached as Exhibit A is an updated schedule. The significant changes are: 1) Construction activity began a month later than originally anticipated, thus, most of the remainder of the schedule is set back by one month. 2) As noted above, water requirements for dust control have been higher than originally anticipated. 3) At this point it does not appear that HASEKO will obtain the necessary permits to begin golf course construction prior to July 1998.

**Water Usage Reports.** Using water for dust control began with the onset of construction in November, 1997. Our water usage reports, however, continued to report all water usage from EP-27 as being for agricultural purposes. This is erroneous, and we have enclosed corrected reports for the months of November and December, 1997 and for January, 1998.

Please note that the amounts reported for agricultural and urban uses are estimates. The uses are not separately metered; thus we are unable to report on the precise amounts withdrawn for each type of use. Given the vast acreages that are involved and the fact that the locations of use for both agricultural and construction activities shift from time to time, it is impractical to install separate meters. In fact, both agricultural and construction uses currently utilize the same transmission lines and spigots.

We have estimated water usage for construction activity by calculations based on pipe size and hours of use for areas watered directly off EP-27 transmission lines and by the average number of water truck trips per week. The remainder is assumed to be agricultural use. The amount attributed to agricultural use coincides with amounts being pumped from EP-27 prior to
the commencement of construction, taking into account the increase in agricultural acreage that is being irrigated.

We apologize for not having done these calculations for the water usage reports for the past three months. We have instructed our consultant, Gary Howard, who submits these reports to the Commission, to hereafter provide separate estimates for each of the permits.

**Reclaimed Water.** A special condition to WUP No. 347 requires HASEKO "to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347)."

Long before this special condition was imposed HASEKO had been working with the City and others for the development and use of reclaimed effluent from the Hounouliuli Wastewater Treatment Plant. Last year, HASEKO successfully supported an amendment to the Ewa Development Plan public facilities map to include a pipeline for reclaimed water extending from the wastewater treatment plant to the Ocean Pointe property.

Since the condition was imposed, HASEKO has continued to meet with DWM, both as part of a larger group and individually. To date, however, DWM has not been ready to enter into any agreements with private users of reclaimed water. Complicating matters even further, we understand that very recently DWM has contracted with US Filters to operate the reclamation facility and to be the purveyor of the reclaimed water. Our brief discussion with US Filters personnel in late January indicated that US Filters is still finalizing their contract with the DWM. We will be in contact with US Filters to begin negotiations for the use of reclaimed water when US Filters' contract with DWM is finalized.

Although HASEKO will continue to use its best efforts to fulfill the special condition, in light of the current circumstances, it appears unlikely that a signed agreement with DWM, or its assigned purveyor, can be consummated by May of this year. We will continue to keep you apprised of our progress in this area.

**Property Transfer.** HASEKO (Ewa), Inc. is a wholly owned subsidiary of HASEKO (Hawaii), Inc. To develop the Cluster residential component of the Ocean Pointe project, HASEKO (Hawaii), Inc. created another wholly owned subsidiary, HASEKO Homes, Inc. HASEKO (Ewa), Inc. transferred to HASEKO Homes, Inc. less than 100 acres of the Ocean Pointe property for this first increment of residential development. The remainder of the 1100 acres of the Ocean Pointe property is retained by HASEKO (Ewa), Inc.
Michael Wilson, Chairman,
and Members of the Commission on Water Resource Management
February 17, 1998
Page 4

The property transfer did not include a transfer of the water use permit. Instead, HASEKO (Ewa), Inc. has agreed to provide water to HASEKO Homes, Inc. We understand that under these circumstances the provisions of HRS §174C-59 are not applicable.

Please feel free to call Raymond Kanna or me if you have any questions or comments.

Very truly yours,

Nelson W.G. Lee
Executive Vice President

cc: Lenore Nakama
    Oshima Chun Fong & Chung
### EWA MARINA COMMUNITY DEVELOPMENT

**Nonpotable Water Needs for Urban Uses**

**To July 1998**

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Cumulative Water Need</th>
</tr>
</thead>
</table>
| November 1997 | Begin on-site excavation for fill material  
                  Begin on-site grading for residential project | 500,000 gpd           |
| December 1997 | Continue on-site excavation for fill material  
                  Continue on-site grading for residential project  
                  Begin subdivision and infrastructure development | 500,000 gpd           |
| January 1998  | Continue on-site excavation for fill material  
                  Continue on-site grading for residential project  
                  Continue subdivision and infrastructure development | 500,000 gpd           |
| February 1998 | Continue on-site excavation for fill material  
                  Continue on-site grading for residential project  
                  Continue subdivision and infrastructure development, including landscaping roadways  
                  Begin model unit construction | 500,000 gpd           |
| March 1998    | Continue on-site excavation for fill material  
                  Continue on-site grading for residential project  
                  Continue subdivision and infrastructure development, including landscaping roadways  
                  Continue model unit construction | 500,000 gpd           |
| April 1998    | Continue subdivision and infrastructure development, including landscaping roadways  
                  Begin housing construction | 500,000 gpd           |
| May 1998      | Maintain landscaping  
                  Continue housing construction | 600,000 gpd           |
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<th>Month</th>
<th>Tasks</th>
<th>Capacity</th>
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<td>Maintain landscaping</td>
<td>600,000 gpd</td>
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<td></td>
<td>Continue housing construction</td>
<td></td>
</tr>
<tr>
<td>July 1998</td>
<td>Maintain landscaping</td>
<td>600,000 gpd</td>
</tr>
<tr>
<td></td>
<td>Continue housing construction</td>
<td></td>
</tr>
</tbody>
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**STATE OF HAWAII**
COMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES

MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Millili St., Ste. 820
Honolulu, HI 96813

REVISED

Month of **November, 1997** Week 1

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<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yyyy)</th>
<th>Period End Date (mm/dd/yyyy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DTW)*</th>
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<td>1902-01</td>
<td>EP-27 (agriculture use)</td>
<td>10/27/97</td>
<td>11/2/97</td>
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<td>Flowmeter</td>
<td>994</td>
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<td>2.90'</td>
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<tr>
<td>1902-01</td>
<td>EP-27 (urban use)</td>
<td>10/27/97</td>
<td>11/2/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>994</td>
<td>75.4</td>
<td>2.90'</td>
</tr>
</tbody>
</table>

**Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print) **Gary D. Howard**
Title **Consultant**
Signature **[Signature]**
Date **2/17/97**

---

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 98809. For assistance, please call (808) 587-0264.

\[ * \]
- Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

---

Form mgwurf.frm (10/96)
## MONTHLY GROUND WATER USE REPORT

### Haseko (Ewa) Inc.
820 Millani St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of **November, 1997** Week 2

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yyyy)</th>
<th>Period End Date (mm/dd/yyyy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method* of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (ftMV)</th>
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<td>EP-27 (agriculture use)</td>
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<td>75.9</td>
<td>3.12'</td>
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**Note:**
- Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc.):

**Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print): **Gary D. Howard**

Title: **Consultant**

Signature: [Signature]

Date: **2/17/97**
MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of November, 1997 Week 3

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
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<th>State Well No</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (ft)</th>
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<td>11/16/97</td>
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<td>2.94'</td>
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<td>3,500,000</td>
<td>Flowmeter</td>
<td>928</td>
<td>74.8</td>
<td>2.94'</td>
</tr>
</tbody>
</table>

* - Flow meter, electrical consumption, weir of flume, not metered (estimated)
** - Measurement should be taken while pump is NOT running just prior to a pumping cycle;
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Submitted by (print) Gary D. Howard
Title Consultant
Signature
Date 2/17/97
**STATE OF HAWAI'I**

**COMMISSION ON WATER RESOURCE MANAGEMENT**

**DEPARTMENT OF LAND AND NATURAL RESOURCES**

**MONTHLY GROUND WATER USE REPORT**

Haseko (Ewa) Inc.
820 Millili St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of **November, 1997 Week 4**

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 921, Honolulu, HI 96809. For assistance, please call (808) 587-0264.

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<th>Temp. (°F)</th>
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**Date** 2/17/97
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<tr>
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<td>73.8</td>
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Submitted by (print): Gary D. Howard
Title: Consultant
Date: 2/15/97

Form: mgwurl.frm (10/96)
## MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.  
820 Mililani St., Ste. 820  
Honolulu, HI 96813

**REVISED**  
Month of December, 1997 Week 1

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Title: Consultant  
Date: 2/17/98
### MONTHLY GROUND WATER USE REPORT

**Haseko (Ewa) Inc.**  
820 Mililani St., Ste. 820  
Honolulu, HI 96813

**REVISED**  
Month of December, 1997 Week 2

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**Title:** Consultant  
Signature:  
Date: 2/17/98
MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of December, 1997 Week 3

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Form mgwurfrmn (10/96)
MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of December, 1997 Week 4

INSTRUCTIONS: Please type or print clearly. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0264.

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## MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Milliani St., Ste. 820
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**REVISED**

Month of **January, 1998**  **Week 1**

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<th>Temp. (°F)</th>
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Title: **Consultant**
Signature: [Signature]
Date: **2/17/98**

Form mgwurf.frm (10.96)
MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
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Honolulu, HI 96813

REVISED

Month of January, 1998 Week 2

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Title Consultant
Signature [Signature]
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Form mgwurt.frm (10/96)
STATE OF HAWAII
COMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES

MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Millilani St., Ste. 820
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Honolulu, HI 96813

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Submitted by (print): Gary D. Howard

Title: Consultant

Signature: [Signature]

Date: 2/17/98
October 24, 1997

Ms. Rae Loui  
Deputy Director  
Commission on Water Resource Management  
Kalanikou Building  
1151 Punchbowl Street  
Honolulu, Hawaii 96813

RE: Ewa Marina Community Development: Cut and Fill Activity

Dear Ms. Loui:

Components of the Ewa Marina Community project other than the marina have progressed to a point where physical construction activity at the site will commence before the end of this year. Because the on-site activity will be significant, we would like to apprise you of the current status of the Ewa Marina Community Development project and the construction activities that will be taking place over the next several months.

Initial Residential Phase

Construction of the Ewa Marina Community Development will commence with a residential “cluster” component located on 92.66 acres on the northeastern section of the Ewa Marina property. The attached Exhibit A depicts the location of the Cluster project identified as Area 1.

Initially, the elevation of the Cluster site must be raised, approximately 10 feet in some areas, in accordance with mass grading plans approved by the City Department of Public Works. Approximately 1.2 million cubic yards (CY) of fill material is needed for this purpose.
Cut and Fill

To obtain the fill material needed to raise the elevation of the Cluster site, approximately 1.5 million CY of material will be excavated from other areas within the Ewa Marina site. As noted in the Environmental Impact Statement for the project, prepared in April 1992 by Wilson Okamoto & Associates, Inc. (EIS), obtaining fill material onsite will minimize construction traffic and, thereby, vehicle exhaust and emissions.

Initially, fill material will be obtained from grading portions of the marina footprint. The "borrow" locations designated on Exhibit A are the locations to be graded and from which fill material will be obtained. Assuming the marina is eventually constructed, this area will ultimately be excavated. Even if the marina is not constructed, a portion of the area will have to be graded and the elevation lowered to accommodate regional drainage needs.

Excavations may be as deep as 9 feet. Inasmuch as the current elevation of the marina footprint averages approximately +12.0 feet, elevations may be lowered to +3.0 feet. All of the excavation, however, will be confined to elevations above the water table.

The portions of the marina footprint that will be graded in this initial phase all lie more than 60 feet inland of the shoreline. No construction activity will take place at the shoreline or seaward of the shoreline.

Grading and excavating fill material will be timed to coincide with filling, grading, and construction of the Cluster project to minimize stockpiling of fill material, and, thereby, minimize fugitive dust impacts of construction. (See EIS, Page VI-2).

Water Use

Upon commencement of the cut and fill activity, nonpotable caprock water will be used for dust control and other construction purposes in accordance with the interim water use permit granted by the Water Commission earlier this year.

---

1 As the water use permit application for the construction of the marina is still pending before the Commission on Water Resource Management, it is still unknown whether or not the marina will be constructed. HASEKO, therefore, has developed alternative (with and without marina scenarios) infrastructure plans in order to keep the development processing active.
In hearings before the Water Commission on the allocation of caprock water for Ewa Marina’s urban irrigation needs, HASEKO had represented that construction on the initial residential phase would begin in October, 1997. Construction is now scheduled to begin in November.

Pursuant to conditions attached to the interim water use permit, HASEKO will submit to the Commission the required pumping and chloride data. Additionally, we will continue to keep the Commission apprised of the Project’s significant activities.

Please feel free to call me if you have any questions or comments.

Very truly yours,

Vicki Gaynor
Manager of Community and Government Affairs

Attachment
Exhibit A, Map Showing Approximate Location of Activities
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<th>TO:</th>
<th>INIT.</th>
<th>TO:</th>
<th>INIT.</th>
<th>FOR:</th>
<th>PLEASE:</th>
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**Commission on Water Resource Management**

**FROM:**

**DATE:** 8/18

**SUSPENSE DATE:**

**TO:**

<table>
<thead>
<tr>
<th><strong>PLEASE:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>See Me</td>
</tr>
<tr>
<td>Review &amp; Comment</td>
</tr>
<tr>
<td>Take Action</td>
</tr>
<tr>
<td>Type Draft</td>
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<td>Type Final</td>
</tr>
<tr>
<td>File</td>
</tr>
<tr>
<td>Xerox ___ copies</td>
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</table>

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6pm comments on text?

1. CH approved to stabilize.
2. To determine T in 5027.125 well database.
3. We attempt to pull out tidal influence in 0606. wells. Not planning to/not required.

Pumped at ~3,5 mgd for 96 hours. Chlorides stabilised @ 300 ppm.
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani Street, Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Thank you for submitting the EP-27 Pumping Test Data Report, dated August, 1997, in compliance with the May 14, 1997 action by Commission on Water Resource Management. The results of the pumping test show that the chlorides in the well stabilized at 900 ppm after being pumped at 3.5 million gallons per day for 96 hours.

As was discussed during an August 25, 1997 telephone conversation with Mr. Raymond Kanna, we will look forward to receiving the datafile on diskette that was used to construct Figure 9 in the report (Quattro Pro or Lotus format). This information will be used to determine the transmissivity of the caprock in the vicinity of your well.

If you have any questions, please contact Glenn Bauer at 587-0263.

Sincerely,

RAE M. LOUI
Deputy Director

LN:ss
Mr. Kenneth E. Sprague, Director  
Department of Wastewater Management  
City & County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Sprague:

Ground Water Use Permit No. 347  
for Haseko Well No. 1 (Well No. 1902-01)  
Puuloa Ground Water Management Area, Oahu

Haseko recently received an interim Water Use Permit for Well No. 1902-01 for Puuloa Ground Water Management Area for use of 1,500 mgd. A condition to this permit requires Haseko to use reclaim water when available.

We would like to initiate discussions with your Department to explore the current status of your reclaim water program. Haseko has been an advocate and supporter of reclaimed water and we look forward to the opportunity to discuss this matter in detail with your staff.

Could you please let us know who is coordinating your reclaim water program? I will have Mr. Raymond Kanna of my office arrange for a mutually convenient meeting date.

Sincerely,

Nelson W.G. Lee  
Executive Vice President

NWGL: dsl  
Enclosure: Letter/Permit dated 5/30/97 from CWRM-SS

cc: Mr. Michael D. Wilson, Chairperson  
State Department of Land and Natural Resources  
Commission on Water Resource Management
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Millilani St., Suite 810
Honolulu, HI  96813

Dear Mr. Lee:

Approval of Water Use Permit for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu

This letter transmits your water use permit for Haseko Well No. 1 (Well No. 1902-01) for use of 1,500 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. The duration of the interim permit shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use of water supply or water quality occurs.

b. Require adherence to the chloride sampling protocol (attached) and the submittal of weekly chloride data, as may be amended by the Commission staff.

c. Require adherence to the Conservation Conditions (attached).

d. Require the permittee to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

Michael D. Wilson
Chairperson

Attachments
## GROUND WATER USE PERMIT

**WUP NO. 347**

### PERMITTEE

<table>
<thead>
<tr>
<th>Applicant/Water User</th>
<th>Address</th>
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<tbody>
<tr>
<td>HASEKO (EWA), INC.</td>
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<tr>
<td></td>
<td>HONOLULU, HI 96813</td>
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<tr>
<th>Island</th>
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<tr>
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<tr>
<td>State Well No.</td>
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### PERMITTED USE INFORMATION

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<tr>
<th>Reasonable beneficial use</th>
<th>GOLF COURSE, ROADWAY, &amp; MAINTENANCE IRRIGATION; DUST CONTROL</th>
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<tr>
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</tr>
<tr>
<td>Location of water use</td>
<td>9-1-12:5-7</td>
</tr>
<tr>
<td>TMK #</td>
<td>EWA MARINA PROJECT</td>
</tr>
<tr>
<td>Address</td>
<td>URBAN</td>
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Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest" (HRS § 174C-3).

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-52 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUUOLA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

---

i have read the conditions and terms of this permit and understand them. i accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: Exec. V.P.
Date: 7/17/97

Printed Name: Haseko (Ewa) Inc.
Firm or Title: Haseko (Ewa) Inc.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
July 7, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Approval of Water Permit Well No. 1902-01 (WUP #347)
Puuloa Ground Water Management Area, Oahu

Dear Sir:

Haseko encloses for your records, an executed copy of our Ground Water Use Permit WUP No. 347. A copy will be forwarded to you under a separate cover.

If you have any questions with regards to these matters, please contact me at 536-3771 ext. 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President

Enclosure
GROUND WATER USE PERMIT
WUP NO. 347

PERMITTEE

Applicant/Water User
Address
HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

Landowner of Source
Address
HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

PERMITTED SOURCE INFORMATION

Island
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Aquifer Sector
EWA CAPROCK
Aquifer System
PUULOA
System Sustainable Yield
NA
Well Name
HASEKO WELL NO. 1
State Well No.
1902-01

PERMITTED USE INFORMATION

Reasonable beneficial use
GOLF COURSE, ROADWAY, & MAINTENANCE IRRIGATION; DUST CONTROL
Withdrawal (12 month moving ave.)
1,500 mgd
Chloride Cap
1,000 mg/l
Location of water use

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6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
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   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission’s periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
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   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
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17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

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21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: [Signature]
Date: 7/7/97

Printed Name: Nelson W Abee
Firm or Title: Haseko (Ewa), Inc.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.
July 7, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii  96809

Approval of Water Permit Well No. 1902-01 (WUP #192)
Puuloa Ground Water Management Area, Oahu

Gentlemen:

Haseko encloses for your records, an executed copy of our Ground Water Use Permit WUP No. 192. A report of a pump test completed on June 2, 1997 is currently being prepared by our consultant, Camp Dresser and McKee. A copy will be forwarded to you under a separate cover.

If you have any questions with regards to these matters, please contact me at 536-3771 ext 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President

Enclosure
GROUND WATER USE PERMIT
WUP NO. 192

PERMITTEE

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<td>PUULOA</td>
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<tr>
<td>TMK #</td>
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   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: [Signature]
Date: 7/1/97

Printed Name: Nelson W.G. Lee Firm or Title: Haseko (Ewa), Inc.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 821
HONOLULU, HAWAII 96809
MAY 30 1997

Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Millilani St., Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Approval of Water Use Permit for Well No. 1902-01
Punalu’a Ground Water Management Area, Oahu

This letter transmits your water use permit for Haseko Well No. 1 (Well No. 1902-01) for use of 1,500 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission’s approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. The duration of the interim permit shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use of water supply or water quality occurs.

b. Require adherence to the chloride sampling protocol (attached) and the submittal of weekly chloride data, as may be amended by the Commission staff.

c. Require adherence to the Conservation Conditions (attached).

d. Require the permittee to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).

Enclosed with this letter of approval are the following:

1. Your water use permit

2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

MICHAEL D. WILSON
Chairperson

Attachments
## GROUND WATER USE PERMIT

**WUP NO. 347**

### PERMITTEE

<table>
<thead>
<tr>
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<th>Landowner of Source</th>
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<tbody>
<tr>
<td>HASEKO (EWA), INC.</td>
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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
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<td>PUUOAO</td>
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<tr>
<td>Aquifer Sector</td>
<td>EWA CAPROCK</td>
</tr>
<tr>
<td>Aquifer System</td>
<td>PUUOAO</td>
</tr>
<tr>
<td>System Sustainable Yield</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Well Name</th>
<th>HASEKO WELL NO. 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Well No.</td>
<td>1902-01</td>
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### PERMITTED USE INFORMATION

<table>
<thead>
<tr>
<th>Reasonable beneficial use</th>
<th>GOLF COURSE, ROADWAY, &amp; MAINTENANCE IRRIGATION, DUST CONTROL</th>
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</thead>
<tbody>
<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>1,500 mgd</td>
</tr>
<tr>
<td>Chloride Cap</td>
<td>1,000 mg/l</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location of water use</th>
<th>TMK #</th>
<th>Address</th>
<th>State land use classification</th>
<th>County zoning classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9-1-12:5-7</td>
<td>EWA MARINA PROJECT</td>
<td>URBAN</td>
<td>P-2, A-1, R-5</td>
</tr>
</tbody>
</table>

Pursuant to Hawaii’s State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ____________________________ Date: ____________________________

Printed Name: ____________________________ Firm or Title: ____________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani St., Suite 810  
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well No. 1902-01  
Puuloa Ground Water Management Area, Oahu

This letter transmits your modified water use permit for EP 27 (Well No. 1902-01) for use of 1,800 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. Standard Condition 18 for interim water use permits shall not apply.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

In addition, the Commission is requiring you to conduct a pump test by June 14, 1997 to confirm that the source can sustain withdrawals at the modified permitted amount without exceeding 1,000 mg/l of chloride. The Commission has delegated the authority to approve or modify the proposed pump test procedure to the Commission staff.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

Michael D. Wilson  
Chairperson

Attachments
GROUND WATER USE PERMIT
WUP NO. 192

PERMITTEE

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<tr>
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</tr>
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<td>State Well No.</td>
<td>1902-01</td>
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PERMITTED USE INFORMATION

| Reasonable beneficial use      | AGRICULTURE |
| Withdrawal (12 month moving ave.) | 1.800 mgd |
| Chloride Cap                  | 1,000 mg/l |
| Location of water use          |             |
| TMK #                        | OSCO FIELDS 71,84,86,88,(POR)91 |
| Address                      | EWA, OAHU    |
| State land use classification | URBAN       |
| County zoning classification  | P-2, RESORT, R-5, B-2, A-1, A-2 |

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

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   d. Is consistent with the public interest;
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   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
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Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
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19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ______________________________ Date: ________________

Printed Name: ______________________________ Firm or Title: __________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
TO: Mr. Dean Uchida, Administrator
Land Division
FROM: Rae M. Loui, Deputy Director
Commission on Water Resource Management (CWRM)
SUBJECT: Review Comments - Proposed Cluster Housing Application No. 96/CL-1 - Ewa Marina (Area I), Ewa, Oahu, Tax Map Key: 9-1-11:7 and 9-1-12:5

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

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas which are important for the maintenance of streams and the replenishment of aquifers.

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

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

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

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

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

[ ] We recommend that no development take place affecting highly erodible slopes which drain into streams within or adjacent to the project.

[ ] If the proposed project diverts additional water from streams or if new or modified stream diversions are planned, the project may need to obtain a stream diversion works permit and petition to amend the interim instream flow standard for the affected stream(s).

[ ] Based on the information provided, it appears that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

[ ] Based on the information provided, it does not appear that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

[ ] An amendment to the instream flow standard from the CWRM would be required before any streamwater is diverted.

[ ] Any new development that is permitted along a stream that is not yet channelized should be based on the express condition that no streams will be channelized to prevent flooding of the development. Development in the open floodplain should not be allowed; other economic uses of the floodplain should be encouraged.

[X] OTHER:

We understand that the City is requiring dual water lines to service new developments in the Ewa area. The application does not describe non-potable water service to the project area. Haseko (Ewa), Inc. (Haseko) has applied and received interim approval for nonpotable ground water from the Ewa Caprock Aquifer for golf course, landscape, and maintenance irrigation and for dust control on fallow areas formerly in sugarcane. This interim water use permit expired on July 12, 1995. The Commission extended the duration of the permit pending a decision on Haseko's request for a new water use permit.

Ground water in the Ewa Caprock Aquifer is expected to become more saline as the return irrigation recharge from Oahu Sugar Co.'s irrigation practices has ceased. We are encouraging the use of reclaimed water to serve nonpotable needs in Ewa when that resource becomes available in 1998.

With regard to the Ewa Marina project, the water use permit application to excavate the marina is in a contested case hearing. Closing arguments will be heard on February 25, 1997. A decision on the application is expected soon thereafter.

If there are any questions, please contact Lenore Nakama at 587-0218.
MEMORANDUM

TO: Division of Aquatic Resources
    Historic Preservation Division
    Division of State Parks
    Commission on Water Resource Management
    Division of Forestry and Wildlife
    Division of Conservation and Resources Enforcement
    Division of Boating and Ocean Recreation
    Land Division - Planning & Technical Services, Oahu District Land Office,
    Engineering Branch

FROM: Dean Y. Uchida, Administrator

SUBJECT: Request for Comments - Proposed Cluster Housing Application No. 96/CL-1 - Ewa
        Marina (Area 1), Ewa, Oahu, Tax Map Key: 9-1-11:7 and 9-1-12:5

Please review the attached:

( ) DRAFT SUPPLEMENTAL EIS
( ) DRAFT EIS PREPARATION NOTICE
( ) ENVIRONMENT ASSESSMENT
( ) SMA APPLICATION
( ) STATE CLEARINGHOUSE REVIEW
( ) PROPOSED CLUSTER HOUSING APPLICATION

and submit your comments within the time requested above. If you wish to review the original
application and attachments, please contact Patti Miyashiro at 587-0430.

If no response is received by the suspense date, we will assume there are not comments.

Attachment(s)

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

Signed ________________________
Date: _________________________
APPLICATION FOR CLUSTER DEVELOPMENT
OF THE
CLUSTER-HOUSING DEVELOPMENT,
EW A MARINA - AREA I

APPLICANT:
HASEKO (EWA), INC.

DECEMBER 16, 1996
CITY AND COUNTY OF HONOLULU
DEPARTMENT OF LAND UTILIZATION
660 South King Street, 7th Floor
Honolulu, Hawaii 96813

DLU MASTER APPLICATION FORM

Additional data, drawing/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing."

Please ask for these instructions.

All specified materials and fees must accompany this form; incomplete applications could delay processing. You are encouraged to consult with department staff in completing the application. Please call the appropriate phone number given in the "Instructions for Filling" sheet.

Please print legibly or type the required information.

PERMIT REQUESTED (Check one or more as appropriate):

Clusters:
☐ Agricultural Cluster
☐ Cluster Housing
☐ Country Cluster

Conditional Use Permits:
☐ Type 1
☐ Type 2

☐ Site Development Plan
☐ Special District:

☐ Waiver (public use/utilities)
☐ Zero Lot Line
☐ Zone Change, From _____ to _____
☐ Zoning Adjustment, LUC Sec. 119

TAX MAP KEY(ES):
Portion of 9-1-012:7 and portion of 9-1-012:5
LOT AREA: 92.66 Acres
ZONING DISTRICT: R-5/P-2
STATE LAND USE DISTRICT: Urban

STREET ADDRESS/LOCATION OF PROPERTY: Ewa Beach

RECORDED FEE OWNER:
Name: HASEKO (Ewa), Inc.
Mailing Address: 820 Millani Street Suite 820
Honolulu, HI 96813
Phone Number: (808) 536-3771
Signature

APPLICANT: HASEKO (Ewa), Inc.
Name: 
Mailing Address: 820 Millani Street Suite 820
Honolulu, HI 96813
Phone Number: (808) 536-3771
Signature

PRESENT USE OF PROPERTY/BUILDING: Vacant

AUTHORIZED AGENT/CONTACT PERSON:
Name: Paul Jordan
Mailing Address: 820 Millani Street Suite 820
Honolulu, HI 96813
Phone Number: (808) 536-3771
Signature

PROJECT NAME OF any: Ewa Marina-Area 1

PROJECT PROPOSAL (Briefly describe the proposed activity or project):

Application for cluster housing development - Ewa Marina-Area 1

FOR DEPARTMENT USE ONLY
Submitted Fee Amount: 9
Date Application Accepted: Accepted By:
Date of Public Hearing:
☐ Approved
☐ Approved with conditions indicated below.
☐ Denied for reason(s) given below.
☐ Exempt project.

FILE NO. ____________

THIS COPY, WHEN SIGNED BELOW, IS NOTIFICATION OF THE ACTION TAKEN.

Signature Title Date

The above approval does not constitute approval of any other required permits, such as building permits.
II. INTRODUCTION

HASEKO (Ewa), Inc. (HASEKO or Applicant) is the owner and developer of the Ewa Marina Community Development (Ewa Marina) located in Ewa Beach, Oahu, Hawaii.

This application for a cluster housing development is submitted pursuant to Article 6, Chapter 21, Revised Ordinances of Honolulu, 1978, as amended (ROH). It is prepared in conformance with the City and County of Honolulu (City) Department of Land Utilization's (DLU) Instructions for Filing a Cluster - Housing Development and the City's Cluster/PD-H Guidebook.

By this application, Applicant seeks to develop the initial residential phase of Ewa Marina as a cluster housing project, consisting of both single and multi-family dwellings. The cluster housing project will be called the "Cluster-Housing Development, Ewa Marina - Area I" and will provide 835 housing units on approximately 92.66 acres. (See Exhibit A). The cluster housing project consist of four (4) sub-areas, which are identified as Areas IA through ID. (See Exhibit B). The overall cluster housing project is referred to in this application as the "Cluster Project".

The Cluster Project incorporates certain "neo-traditional" town planning principles. Because cluster development allows development of sites which would otherwise be difficult to develop under current LUO provisions and subdivision standards, the Cluster Project will include neo-traditional features such as a mix of housing types, alleyways, and a pedestrian friendly network of gridded streets and walkways. Moreover, notwithstanding the zoning restrictions which prohibit retail uses within the Cluster Project, some of the desired commercial uses under neo-traditional principles, i.e., a town center, could be provided on the B-2 zoned parcel located immediately adjacent to the Cluster Project.

Applicant will also be filing an application for the bulk subdivision of the Cluster Project property and the subdivision of the single family dwelling lots within the Cluster Project to be processed concurrently with this cluster application.
III. DESCRIPTION OF EWA MARINA COMMUNITY DEVELOPMENT

A. Brief Overview of Ewa Marina Community Development

Ewa Marina is a master-planned mixed-use development project, which will be developed on approximately 1,110 acres of land and will be a part of the secondary urban center of Kapolei.

Consistent with the concept of Oahu's secondary urban center, Ewa Marina will be a harmoniously integrated residential, recreational and commercial community where residents can live, work and play.

The residential component of Ewa Marina will consist of several residential neighborhoods and will include single-family homes, mid-rise apartments, and townhouses providing a total of approximately 4,850 housing units.

The focal point of Ewa Marina will be a full service man-made marina approved for up to 1,400 boat slips and various marina-support facilities. Also serving the recreational needs of the region will be the Ewa Marina golf course and a district park located at the northeast entrance to Ewa Marina.

Adjoining the western section of the marina will be a retail/commercial center, visitor accommodations, and various recreational facilities and opportunities. The mixed-used commercial area will serve as a major employment and recreation center for residents of Oahu, particularly residents of the Ewa region.

B. Brief Overview of Residential Component of Ewa Marina

As previously indicated, the residential component of Ewa Marina will provide a total of approximately 4,850 housing units, including single-family homes, mid-rise apartments, and townhouses. The residential component will be developed in phases, with each phase being identified as a separate "area".

As an alternative to the "suburban sprawl" created under modern suburban designs and landscapes, urban planning has seen a resurgence of interest in developing old-style "communities" which incorporate features of the traditional neighborhood or village. These "neo-traditional" neighborhoods incorporate planning principles and concepts that seek to integrate various age and economic classes within the same neighborhood, reduce the importance of the automobile, encourage walking and interaction among its residents, and generally provide a sense of community.

Applicant has prepared a conceptual plan for the residential component of Ewa Marina, which incorporates various neo-traditional features. However, several of
the neo-traditional features envisioned under the conceptual plan are not permitted under the existing City Land Use Ordinance (LUO).

The Cluster Project, which is the subject of this application, is the initial residential phase of Ewa Marina and incorporates certain neo-traditional features that are permitted under the current LUO such as: providing a mixture of housing sizes and types within the same neighborhood to (e.g., a mixing of single family dwellings with townhouses and other multi-family dwellings); clustering of dwellings on smaller lots to allow for more efficient and useable open space; providing a pedestrian oriented network of gridded streets, sidewalks and pedestrian pathways to encourage walking and socializing and reduce dependence on the automobile; placing garages at the rear of the lots accessible by private service alleys, and increasing streetscaping in the front of the dwellings.

Because of limitations under the LUO, the Cluster Project does not include commercial uses, which is a primary feature of neo-traditional neighborhoods. This neo-traditional concept of mixing uses within the same neighborhood seeks to provide a community in which residents of all ages can live, work and play. Therefore, neo-traditional principles call for residences, shops, workplaces and civic buildings or town centers to all be located within close proximity. For example, neighborhood grocery stores, post offices, and eating establishments are commonly found strategically located among residences in neo-traditional neighborhoods. This mixing of uses not only further encourages walking and interaction among the residents, but by reducing the importance of the automobile, all residents, even those that are unable to drive such as children and the elderly, are able to live, work and play -- all within the boundaries of the neighborhood.

Notwithstanding the zoning restrictions which prohibit commercial uses within the Cluster Project, Applicant plans to provide some of the desired commercial uses on a commercially zoned parcel located within the Ewa Marina project immediately adjacent to the southeastern corner of the Cluster Project. Such commercial uses will be developed as part of a subsequent phase of the Ewa Marina project.

Applicant does not foresee developing all of its proposed 4,850 housing units for Ewa Marina under the neo-traditional concept. However, subject to market conditions, limitations under the current LUO, and future opportunities created by amendments to the LUO, Applicant envisions that subsequent residential phases/areas will include certain other neo-traditional features, such as: the mixing of uses discussed above; making public transportation a viable alternative to the automobile, and providing town centers or civic buildings that reinforce the identity of the neighborhood and provide gathering places for the entire community to engage in social, cultural and other activities.
B. Objectives Of The Design Concept

1. Ewa Marina Design Concept: The objective of the design concept for the overall Ewa Marina project is to create a mixed-use "community" utilizing neo-traditional neighborhood land use planning concepts and principles. The overall design concept for the Ewa Marina and the Cluster Project can be realized by taking advantage of the flexibility offered under the LUO for cluster housing developments.

   The design concept for the overall Ewa Marina project incorporates neo-traditional concepts which seek to: encourage social interaction within the neighborhood by mixing uses and housing types and providing town centers and/or civic centers; encourage walking and public transportation and reduce dependence on the automobile; provide for more efficient and usable open space areas by cluster housing on smaller lots; provide a choice of routes through a network of gridded streets.

   Ewa Marina will be developed in phases, with the Cluster Project serving as the initial residential phase. The Cluster Project will incorporate certain neo-traditional features to the extent permitted under the LUO and as dictated by the current housing market. Subject to market conditions and limitations of the LUO, subsequent phases will incorporate additional neo-traditional features.

2. Cluster Project Planning Concept: The objective of the planning for the Cluster Project is to meet the following criteria:

   a. Create a viable and marketable "first phase" of development that will enable the Cluster Project to successfully lead itself into the future phases of Ewa Marina.

   b. Create a site plan that meets the City’s current cluster development zoning and engineering ordinances that govern the property and the planned roadways, and that will support the community’s long term infrastructure needs.

   c. Create a mixed-housing development of single-family and multi-family building types that creates a community which integrates residents of various age and economic classes.

   d. Create a pedestrian oriented network of sidewalks and pedestrian pathways throughout the community, which encourages walking and reduces dependence on automobiles.
Cluster-Housing Development, Ewa Marina - Area 1: Application for Cluster Development

3. Housing Design Concept: The objective of the housing design for the Cluster Project is to meet the following criteria:

a. Create a design that takes advantage of the neo-traditional neighborhood planning approach, the natural attributes of the site, allows for flow-through natural ventilation, provides exterior living spaces, and affords an acceptable level of privacy and security to each unit.

b. Create a mixture of housing sizes and types, including both detached and attached dwelling units, that meets the community's needs and that range in price from affordable to market rate.

4. Site Development and Infrastructure Concept: The objective of the site development concept is to reduce grading requirements, to allow for efficient design of utility infrastructure and to provide a pedestrian friendly layout through the use of a gridded network of streets and pedestrian walkways. The use of through streets, secondary alleys and pedestrian walkways provide for greater options in utility locations such as trash pickup and drainage infrastructure, in addition to improving the pedestrian environment.

5. Landscape Design Concept: The objective of the landscape design concept is to create a blending of a tropical oasis theme and the dry outer fringes. Coconut and kiawe trees, or species with similar characteristics, will be planted as accents and theme trees to carry the character indicative of the arid landscape in Ewa Beach. A hierarchy of trees species will be used with zones based on underlying street right of way dimensions. Narrower pavement widths within standard right-of-ways are proposed to further enhance the pedestrian environment by allowing for wider planting strips and street trees.
C. Existing Conditions

1. Abutting Land Uses

The Cluster Project is bounded by Fort Weaver Road along its eastern boundary. The southeastern corner of the Cluster Project is abutted by commercial zoning, including the Ewa Beach Shopping Center and an undeveloped B-2 zoned parcel which is also part of the Ewa Marina project. Abutting the southern portion of the Cluster Project is the Ewa Beach Elementary School, which is zoned R-5. The remainder of the Cluster Project is surrounded by the overall Ewa Marina project, which is currently undeveloped.

2. Hazardous Areas

There are no known hazardous areas adjacent to or on the Cluster Project site.

The Federal Emergency Management Agency's Flood Insurance Rate Map (FIRM) indicates that the lower portion of the overall Ewa Marina (makai of the Cluster Project) is located in Zones A and AE which are designated as special flood hazard areas inundated by the 100-year flood. Base flood elevations have been determined in Zone AE, but not in Zone A. As indicated on the FIRM maps, the flood elevation ranges from elevation 6 to elevation 8.

The Cluster Project is located within Zone D on the FIRM maps. Zone D is designated for areas in which the flood elevations are undetermined.

3. Slope and Topographic Analysis

The Cluster Project site is located within the Ewa Coastal Plain. The property is relatively flat with elevations ranging from 21 feet above mean sea level at the mauka end adjacent to Fort Weaver Road to 12 feet above mean sea level at the makai end adjacent to Ewa Beach Elementary School.

The surface of the site is fairly uniform and slopes at a rate of 0.2% to 1.0%.
4. **Soil and Drainage Analysis**

**Surface Soils**

The overall development area for Ewa consists of five soils types as classified by the Soil Conservation Service. The soil type within the Cluster Project is Fill land (Fd), which consists of fill material from dredging, excavation from adjacent uplands, garbage and bagasse and slurry from sugar mills.

**Subsurface Condition**

The *Soils Investigation, Ewa Marina Total Project*, dated November 13, 1984, prepared by Dames & Moore, describes the subsurface soils of the Ewa Marina Project, including the Cluster Project, as follows:

In general, the site is underlain by a thin mantle of soil over coral. The coral is exposed in some areas. The upper portion of the mantle, which averages less than 2 feet in thickness, is composed mainly of sandy and clayey silt. In a few cases, sieve analyses indicate that the upper soils are classified as silty sands. A thin layer of silty coralline gravel underlies the upper silt and extends as deep as 4-1/2 feet below the ground surface.

The coral consists principally of in situ reef rock and conglomerate which is hard and strong. Locally, softer and weaker shell rock and dune rock were encountered. However, the areas of softer rock do not appear extensive. Coral consistency is typically erratic and hard rock is often encountered overlying zone of softer materials.

**Existing Drainage**

Storm runoff generated on-site of the Cluster Project percolates into the soil and eventually reaches the ocean as groundwater. During heavier storms, runoff generally flows toward the ocean.

There is an existing underground drainage system within Fort Weaver Road which is presently accepting a small portion of runoff from the Cluster Project site.

Papipi Road and the adjoining existing residential areas have a limited underground drainage system which is presently accepting a small portion of runoff from the Cluster Project site.
Drainage Studies

The Drainage Master Plan for HASEKO (Ewa), Inc. Cluster-Housing Development Ewa Marina - Area I, dated August 1996, prepared by Gray, Hong, Bills & Associates, Inc., has been prepared in conjunction with the proposed Cluster Project and is consistent and compatible with the Site Drainage Master Plan, dated August 1996, prepared by GMP Associates, Inc.

5. Existing Structures and Uses

There are no existing structures located on the property encompassing the Cluster Project. The property was previously used for sugar cane cultivation. However, it is currently fallow.

6. Desirable Views

The property is generally flat with minor gradient changes and is located approximately 20 feet above sea level. Because of this there are no discernible views with the exception of the Waianae Mountain ranges to the north of the property.

7. Easements

The Cluster Project site is subject to the easements described below. Copies of the easement documents will provided upon request.

a. There are five (5) water pipeline easements located within the Cluster Project along Fort Weaver Road. These easements have all been dedicated to the City, and are described in further detail as follows (Land Court Document No. 2237810):

   Easement 1987 for water pipeline and road purposes, as described in Land Court Order No. 92211 and shown on Land Court Map 452.

   Easement 1988 for water pipeline purposes, as described in Land Court Order No. 92211 and shown on Land Court Map 452.

   Easement 2307 for water pipeline purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.
Easement 2308 for water pipeline and road purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.

Easement 2309 for water pipeline purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.

b. A drainage/flowage easement (Easement 2310), is part of the water pipeline easement system described above, and is described in Land Court Order No. 96916 and shown on Land Court Map 503. This easement was dedicated to the City together with the water pipeline easements described above (See Land Court Document No. 2237810). Applicant is considering an alternate drain connection for the water pipelines, which if provided, will allow this easement to be canceled.

c. A temporary utility easement has been granted to Hawaiian Electric Company, Inc. to run power lines across the Ewa Marina project and provide electricity during development of the project. (See Land Court Document Nos. 2284736 and 2284737). The easement and power lines will be relocated to a permanent utility easement to be designated at a later date.

8. Existing Road Widths, Conditions and Ownership of All Access Roads

The Cluster Project site is bounded on the east side by Fort Weaver Road, which is a public 100-foot right-of-way. Fort Weaver Road is fully improved fronting the Cluster Project site and the pavement is in good condition.

9. Existing Public Facilities

Potable Water

Various water facilities, including source, storage and transmission, have been constructed by the Ewa Plain Water Development Corporation (EPWDC). Applicant has contributed its proportionate share of the cost for the improvements. Therefore, water service can be provided to the Cluster Project by connection to the 20-inch line which has been provided off the 36-inch transmission line within Fort Weaver Road. This 20-inch connection line is located at the northeast portion of the Cluster Project site.
Sanitary Sewer

As part of the Ewa Beach Sewers Section I, Improvement District 259, the sizes of various sewer lines in the existing Ewa Beach area were increased to provide sufficient capacity for portions of the Ewa Marina project. The cost for the larger size lines were paid for by the previous developer.

A maximum of 2.4 mgd of sewer flow can be accommodated by the existing 24-inch Ewa Interceptor Sewer at Papipi Road located on the southeast side of the Cluster Project site. This is adequate to handle the entire sewer flow from the Cluster Project site.

The Honouliuli Wastewater Treatment Plant presently has a capacity of 38 million gallons a day (mgd), of which 13 mgd is being upgraded to secondary treatment. According to the Department of Wastewater Management, this should provide enough capacity to cover the overall Ewa Marina project, including the Cluster Project. The improvements for secondary treatment were recently completed.

The Honouliuli Wastewater Treatment Plant is planned for further upgrading to 51 mgd. Construction is scheduled to commence in 1997, with completion in July 1999.

10. Unique Site Conditions

The entire Cluster Project site is extremely flat with little or no gradient changes. This provides the ideal topographic conditions for a neo-traditional development, which seeks to provide a pedestrian friendly project through a network of gridded streets and pedestrian walkways. In contrast, hilly or mountainous sites typically require curvilinear, non-gridded streets to allow reasonable road inclines, but which limit usage by pedestrians.

D. Proposal

1. Dwelling Units

   a. Number, Type and Size.

   The Cluster Project will provide a total of 835 dwelling units, consisting of 379 single family units, 320 townhouse units, and 136 apartment units. The Cluster Project will also provide a variety of building and unit types, as well as dwellings of various sizes. For example, the Cluster Project will provide three (3) different building
Cluster-Housing Development, Ewa Marina - Area 1 - Application for Cluster Development

types for the single family units, which will include 3 and 4-bedroom units. The project will also provide five (5) different building types of townhouses, with 2 and 3-bedroom units, and apartments consisting of 2-bedroom units. (See Table D1 on page 15).

The buildings and units within each sub-area of the Cluster Project are described in Table D2. (see pages 16-19)

b. Sale or Rental Price

The projected sales prices, which are projected 1997 sales prices and are subject to change depending on market conditions, are as follows:

- Single Family Dwellings: Approx. $250,000 to $350,000
- Townhouses: Approx. $150,000 to $250,000
- Apartments: Based on 80% of median income, adjusted by the U.S. Department of Housing and Urban Development rates and per agreement with the City Department of Housing and Community Development regarding “affordable units”

c. Form of Ultimate Ownership

- Single Family Dwellings: Fee Simple
- Townhouses: Fee Simple Condominium
- Apartments: Fee Simple or Rental

d. Development Schedule

The projected development schedule for the dwelling units, which is subject to change depending on market conditions, is as follows:

- Year 1: Area IA
- Year 2: Area IB
- Year 3 and beyond: Areas IC and ID

e. Other Features

Applicant originally contemplated developing the project as a zero lot line development. However, Applicant subsequently opted to develop the project as a cluster development to provide for “walk around” single family units with 5-foot side and rear setbacks from
the property line. The side yards and building setbacks and heights for the Cluster Project are based on the 10-foot separation of buildings originally proposed for the zero lot line project. The decision to not develop a zero lot line project was also in part due to Applicant's desire to eliminate or minimize potential ownership and property line encroachment disputes.

Concurrent with this cluster application, Applicant will be submitting an application for a bulk lot subdivision of the Cluster Project, and for subdivision of the single family dwelling lots.

* * * * *
2. **Building Design**

The proposed buildings have been designed to be compatible with the overall design concept for Ewa Marina. Exterior colors and materials will be harmonious with the existing neighborhood. (See "Ewa Marina Cluster Development Color Scheme" submitted herewith). The orientation of the buildings will take advantage of the views and natural ventilation. The placement of the buildings relative to vehicular lanes and sidewalks will reflect neo-traditional planning concepts and principles and enhance the sense of community.

3. **Open Space/Recreation/Landscaping**

By incorporating the neo-traditional concept of clustering the dwellings together, the Cluster Project will provide a network of usable open space, parks, and landscape areas, including five (5) park areas, and will be connected by a network of pedestrian sidewalks and pathways. The interconnected street system, another neo-traditional feature, is designed to encourage pedestrian use instead of being a series of high volume one way in and one way out collector streets. As a result, it is expected that greater use will be made of the streets as an open space amenity for the Cluster Project, as opposed to the vehicular dominated corridors found in conventional subdivisions, in which landscaping serves only an aesthetic purpose for drivers and passengers.

Planting strips along the streets will include canopy trees that provide character and shade. These canopy trees are made possible by the Cluster Project' neo-traditional street layout, which provide for wider planting strips and narrower pavement widths than that which are permitted in conventional subdivisions.

Where possible, the Cluster Project will also incorporate the neo-traditional concept of using different species of street trees as a design element to indicate a street hierarchy based on street widths. In addition, if transplanting proves successful and depending on availability of potable water sources, kiawe trees may be moved from adjacent parcels and utilized. Coconut trees will also be planted as accents and theme trees to emphasize the tropical seaside character of the Ewa Marina project. Large areas of grasses will be planted to provide play fields and picnic areas throughout the open space/parks.

Landscape quantities and area calculations are set forth in detail in Table D3 (see pages 21-23).
The sanitary sewer system for the Cluster Project will be in accordance with the standards of the City Department of Wastewater Management (DWM) and will be dedicated to the City upon completion.

The sewer improvements for the Cluster Project will also be developed in accordance with the sewer master plan for the Ewa Marina project, as approved by DWM.

Electrical, Telephone, CATV & Street Lighting Systems

Underground electrical, telephone, CATV and street lighting systems will be in accordance with the standards of the various utility companies and the City.

Upon completion, the improvements will be dedicated to the applicable public utility commissions.

7. Grading and Drainage

Drainage

Drainage of the Cluster Project can be accomplished with storm runoff flowing to the future marina except for small areas where it is not possible to contain the runoff on-site. These areas include the areas adjacent to Fort Weaver Road, Papipi Road, the Ewa Beach Shopping Center and the Ewa Beach Elementary School.

The on-site drainage system for the Cluster Project will consist of underground storm drains that will ultimately discharge into the future marina. On-site drainage improvements will be designed to City standards. Drainage systems within public roads and applicable easements will be dedicated to the City. Small inlets and drain pipes within the privately owned alleys will remain private and will connect to the dedicated City storm drainage system.

Until such time that the marina is constructed, the on-site drainage system for the Cluster Project will discharge into a temporary detention/retention basin located makai of the Cluster Project site. The basin will be provided to meet City and NPDES requirements during the interim period until the marina is completed. The basin will be designed per the U.S. Soil Conservation Services method outlined in their Erosion and Sediment Control Guide for Hawaii Manual.
The on-site drainage system for the Cluster Project will be designed in accordance with the drainage master plan for the Cluster Project, as approved by the City Department of Public Works.

**Grading**

Applicant envisions that fill for the Cluster Project site will consist of materials excavated from proposed cut areas located outside of the Cluster Project site, but within the overall Ewa Marina project site.

The Cluster Project site will be graded to minimize storm runoff from flowing outside of the project limits. Generally, the surrounding areas will be graded to drain towards the future marina, with slopes ranging from 0.5% to 1.0%.

All grading will be done in accordance with the City's grading ordinance.

**Erosion Control**

A temporary sediment and retention basin located outside of the Cluster Project site will serve as the sediment and retention basin for the Cluster Project during the interim period until the marina is completed.

An erosion control plan will be developed in conjunction with the design phase of the Cluster Project and shall be in accordance with the Soil Erosion Standards and Guidelines of the City Department of Public Works.

**Relationship of the Cluster Project to the Neighborhood**

The residential character of the Cluster Project is compatible with the existing zoning and character of the existing neighborhood. Clustered units have been located adjacent to the highest intensity use surrounding the site of the commercial and school district.

The neo-traditional neighborhood concept envisioned for the Cluster Project is very compatible with the existing planning for Ewa Beach. Consistent with neo-traditional principles, residents of the Cluster Project would be encouraged to interact with the existing neighborhoods through the pedestrian friendly network of gridded streets and pedestrian pathways, which would connect to the existing commercial areas.

In addition, although commercial uses are not included within the Cluster Project due to LUO restrictions, the overall development concept for Ewa Marina envisions that some of the commercial uses desired under
LEGEND

- EWA MARINA BOUNDARY
- PHASE I, INCREMENT 1 BOUNDARY
- EWA MARINA - AREA I PROJECT SITE
August 8, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

EP-27 (Well #1902-01)
Water Use Permit #192

Gentlemen:


If you have any questions, please contact Mr. Raymond S. Kanna at 536-3771 ext. 242.

Sincerely,

Nelson W.G. Lee
Executive Vice President

NWGL:dsl
Enclosure
EP-27 Pumping Test
Data Report

August, 1997

Prepared for HASEKO (Ewa) Inc.
by
Camp Dresser & McKee Inc.
10 Cambridge Center
Cambridge, MA 02142
**EP-27 Data Form**

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Sampled No Back Flow
Sampled C=3470 T=27.5
Sampled C=3420 T=27.8
EP-27 Pumping Test
Data Report

August, 1997

Prepared for HASEKO (Ewa) Inc.
by
Camp Dresser & McKee Inc.
10 Cambridge Center
Cambridge, MA 02142
Section 1  Introduction

In response to the Commission on Water Resource Management’s request of February 21, 1997 a 96-hour pumping test was conducted at well EP-27. This test was conducted to determine the specific capacity and any trend in salinity at EP-27.

EP-27 is a coral/borrow pit with an areal extent of approximately 1000 ft^2, and a water depth of 5 to 7 feet. Three wells, GC-1, GC-2 and GC-3, were monitored during the pumping test. GC-1 is located approximately 1,900 feet west of EP-27, GC-2 is located 2,500 feet southwest of EP-27, and GC-3 is located 2,900 feet northeast of EP-27. Figure 1 presents the locations of the pumping test well EP-27, and of the three monitoring wells GC-1, GC-2, and GC-3.

Transducers (In-Situ Troll Dataloggers) recorded the water level in EP-27 and three monitoring wells, GC-1, GC-2 and GC-3. Water levels were monitored for 72 hours prior to the pumping test, during the 96 hour pumping test, and for 75 hours following the cessation of pumping. Enclosed with this report is a diskette containing the water level data in spreadsheet format. The water level data refer to the static water level above the pressure transducer at the beginning of each test phase. At the beginning of each phase the static water level is zero, and subsequent water levels are measured above or below this reference. A Stevens Water Level Recorder - Type F was also installed in the EP-27 pool.

The pumping test began at 11:27 AM on Monday, May 26, 1997 and concluded at 12:00 noon on Friday, May 30, 1997. The pumping rate was maintained at approximately 2,400 gallons per minute (gpm). During the pumping test discharge water samples were taken and conductivity and pumpage records were recorded every 4 hours. The conductivity and water temperature in the EP-27 pool were also measured every 4 hours. The measurements in the EP-27 pool were taken at depths of 1 foot (top), 3 feet (mid), and 6 feet (bottom), and at approximately 6 feet laterally from the intake to the pump. The discharge water from the pumping test was pumped through the irrigation system and applied to Haseko property to the east of EP-27.

Section 2  Pre-Test Monitoring

Water levels in the aquifer were monitored for a period of 72 hours prior to the pumping test. This monitoring was designed to evaluate tidal influences in the aquifer, and to evaluate the responses at each of the monitoring wells to the tide cycle. Measurements were made at 6 minute intervals throughout the monitoring period.

Water level measurements taken during the Pre-Test monitoring at pumping well EP-27 and at the three monitoring wells are plotted in Figures 2 through 5. This data can be found in spreadsheet PTEST.XLS on the accompanying diskette. Very similar tidal signals are evident at well EP-27 and monitoring well GC-1. A slightly different tidal signal with greater amplitude is apparent at monitoring well GC-2. This is expected since GC-2 is located closer to the shoreline than is GC-1.
The Pre-Test water level record at monitoring well GC-3, which is located further inland than the other three wells, was influenced by external factors (the transducer cable was apparently disturbed) during the Pre-Test period and appears to contain some anomalous readings. Since the water level readings at GC-3 are relatively unimportant to the analysis of the pumping test results, these anomalous readings are not considered a problem in the pumping test.

Since EP-27 and GC-1 appear to have very similar tidal signals, and these wells are located approximately the same distance from the shoreline, it was decided to use the GC-1 water level readings to remove the tidal signal from the EP-27 readings during the pumping test. Figure 6 presents the water level readings at EP-27 minus the water level readings at GC-1, during the Pre-Test monitoring. The resultant readings display a very small remaining tidal cycle with an amplitude of approximately 0.015 feet, which is a result of the slightly stronger tidal signal at EP-27.

During the pre-test period the temperature and conductivity in the EP-27 pool were monitored. Conductivity levels during the pre-test period were relatively constant, ranging from 3300 to 3350 microsiemens (μS).

Section 3 Pumping Test

The 96-hour pumping test began at 12:00 noon on May 26th, and the response at EP-27 and the 3 GC wells was recorded. Water level measurements were recorded on a logarithmically increasing time frequency until the interval between readings was 6 minutes, at which time measurements continued at 6 minute intervals until the end of the test. The water level data are presented in the spreadsheet PTEST.XLS on the accompanying diskette, and the pumping rate data are presented in Table 1.

Figures 7 and 8 present the water level at well EP-27 during the 96-hour pump test versus a linear time scale. Figure 7 displays the raw water level data which still include the tidal signal. Figure 8 presents the water level at EP-27 minus the water level at GC-1 during the pumping test. From this figure it is apparent that the pumping test created a drawdown of approximately 0.15 feet at well EP-27. In Figure 9 the adjusted water level at EP-27, during the pumping test is plotted versus a logarithmic time scale. The majority of the drawdown occurs within the first 100 minutes of the pumping test. The specific capacity at EP-27 is calculated to be approximately 15,700 gpm/ft.

Plots of the unadjusted water level at the monitoring wells GC-1, GC-2, and GC-3 during the pumping test are presented in Figures 10, 11 and 12. There is no obvious impact of the pumping at any of these wells, only a continuing tidal signal. As in the pre-test period, the aquifer response to the tide cycle at GC-3 is quite different from that observed at GC-1 and GC-2.
Section 4  Recovery Period

The pumping was terminated at 12:00 noon on May 30th and the recovery was monitored for 75 hours. The dataloggers were again set to record on a logarithmic scale at the beginning of the recovery period, and then at 6 minute intervals for the remainder of the period. The water level data are contained in spreadsheet PTEST.XLS on the enclosed diskette.

Figures 13 through 16 present water levels at all 4 wells during the recovery period immediately following the conclusion of the pumping test. Again, the only obvious evidence of a recovery from the pumping test is observed at EP-27. Figures 17 and 18 present the water level at EP-27 minus the water level at GC-1, during the recovery period. Figure 17 presents this data versus a linear time scale, and Figure 18 presents the data versus a logarithmic time scale. The majority of the recovery occurs within the first 200 minutes following the conclusion of pumping. After 200 minutes the residual influence of the tidal cycle is observed. Figures 17 and 18 indicate that the water level at EP-27 recovers between 0.12 and 0.15 feet, an amount comparable to the earlier recorded drawdown.

Section 5  Water Quality Data

Water quality samples were collected from the discharge water every 4 hours during the pumping test, and from the EP-27 pool daily during the recovery period. In Figures 19 and 20, conductivity and chloride concentration are plotted versus time. The conductivity data display a smooth increase during time, appearing to stabilize after approximately 3 days of pumping. Conductivity levels declined once the pumping stopped and returned to pre-test levels. Figure 20 presents the measured chloride concentration vs time. During the pumping test chloride values increase from approximately 860 to 900 mg/l. The chloride concentration also appears to stabilize at a value of approximately 900 mg/l. Once pumping stopped the chloride concentration returned to its pre-test value of approximately 860 mg/l. The conductivity data are presented in Table 2, and the chloride data are presented in Table 3.

Conductivity and temperature measurements were also made at three depths in the pool every 4 hours during the pumping test, and daily during the recovery period. Figure 21 presents the conductivity measurements versus time at all three depths in the EP-27 pool. The behavior observed is consistent across the three depths, with the highest levels being noted at the bottom of the pit. The tidal cycle appears to slightly influence the conductivity levels. Such influences are not noted in the pump discharge samples. During the pumping test the conductivity values rise, and appear to stabilize at a value between 3550 and 3600 $\mu$S. Once the pumping test stopped the conductivity values declined to pre-test conditions. The data collected from the EP-27 pool is included in the file EP27WQ.XLS which accompanies this report.
Section 6  Summary

A 96-hour pumping test was conducted at EP-27. This pumping test indicated that an extraction rate of 2,400 gpm can be maintained at EP-27 with approximately 0.15 feet of drawdown. During the pumping test the drawdown at EP-27 occurred over approximately the first 3 hours of the test, with a drawdown of approximately 0.15 feet. The chloride levels measured in the discharge water increased from 860 to 900 mg/l, and stabilized at that level after 3 days of pumping. Water levels and chlorides recovered to pre-test conditions following the test.
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Note: Samples 1 - 25 from Discharge Water  
Samples 26 - 29 from EP-27 Pool

Table 2
Conductivity Measurements During Pumping Test and Recovery Period
<table>
<thead>
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<th>Sample Number</th>
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<tr>
<td>29</td>
<td>6/2/97</td>
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<td>860</td>
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Note: Samples 1 - 25 from Discharge Water
      Samples 26 -29 from EP-27 Pool

Table 3
Chloride Measurements During Pumping Test and Recovery Period
Location of Pumping Well EP-27 and Monitoring Wells

96-Hour Pumping Test at EP-27
Figure 2
Water Level at EP-27 During Pre-Test
Figure 3
Water Level at GC-1 During Pre-Test
Figure 4
Water Level at GC-2 During Pre-Test
Figure 5
Water Level at GC-3 During Pre-Test
Figure 6

Adjusted Water Level at EP-27 During Pre-Test
Figure 7
Water Level at EP-27 During Pre-Test
Figure 8

Adjusted Water Level at EP-27 During Pumping Test
Figure 9

Adjusted Water Level at EP-27 During Pumping Test
Figure 10
Water Level at GC-1 During Pumping Test
Figure 11
Water Level at GC-2 During Pumping Test
Figure 12

Water Level at GC-3 During Pumping Test
Figure 13
Water Level at EP-27 During Recovery Period
Figure 14
Water Level at GC-1 During Recovery Period
Figure 15
Water Level at GC-2 During Recovery Period
Figure 17

Adjusted Water Level at EP-27 During Recovery Period
Figure 18

Adjusted Water Level at EP-27 During Recovery Period
Chloride Concentration vs Time

Figure 20

CDM Camp Dresser & McKee

CHLORIDE.XLS

Chloride Concentration vs Time
Figure 21
Conductivity Measurements in the EP-27 Pool
<table>
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<th>TO:</th>
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<th>TO:</th>
<th>INIT.</th>
<th>FOR:</th>
<th>PLEASE:</th>
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<td>LOUI, R.</td>
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<td>See Me</td>
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<td>NAKAMA, L.</td>
<td>W</td>
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<td>Review &amp; Comment</td>
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<td>UWANE, J.</td>
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<td>JINNAI, R.</td>
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<td>YODA, K.</td>
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Note: The handwritten text at the bottom of the page seems to be a question or comment: "This from the Iwado group test. Do you file?"
FILE CLOSED

SEE 1902-01 FOLDER #2
SEE EWA CAPROCK WMA
FOLDER #2
TESTIMONIES:

Mr. Jim Anthony, a party in the Hawaii Reserves, Inc. contested case hearing, testified against the staff's recommendation to delete Well No. 3554-02 and to reinstate Well No. 3654-03.

MOTION: (COX/MIIKE)

To approve staff's recommendation.

UNANIMOUSLY APPROVED.

ITEM 2.

APPLICATIONS FOR WATER USE PERMITS, REQUESTS FOR NEW AND CONTINUED NONPOTABLE URBAN USES, ALLOCATION PLAN FOR WATER USE PERMITS IN RESPONSE TO LOWER SUSTAINABLE YIELD ESTIMATE FOR THE PUUOLA AREA, EWA CAPROCK GROUND WATER MANAGEMENT AREA, OAHU

The Estate of James Campbell, (Well Nos. 1905-08,10)
State of Hawaii, Housing Finance & Development Corp. (Well Nos. 2003-04,07)
Kapolei People's Inc., (Well Nos. 2003-01,02,05)
Hawaii Prince Golf Club, (Well Nos. 1900-02-17 to 20 & 1901-03)
Gentry Development Co., (Well Nos. 2001-03,04,05,09,10,11 & 2002-15)
The Arbors Association, (Well No. 2001-07)
Palm Villas II Association, (Well No. 2001-08)
Palm Court Association, (Well No. 2002-12)
Haseko (Ewa), Inc., (Well No. 1902-01)

PRESENTATION OF SUBMITTAL: Deputy Director Rae Loui

Correction on Page 4, Section B:

The current schedule for the demonstration recharge trench (5 mgd) and full application (10 mgd) is:

<table>
<thead>
<tr>
<th>Phase</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
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<td>9/1996</td>
</tr>
<tr>
<td>Demonstration Recharge Trench Operational (5 mgd)</td>
<td>12/1998</td>
</tr>
<tr>
<td>Testing Complete</td>
<td>12/1999</td>
</tr>
<tr>
<td>Complete Trench Operational (10 mgd)</td>
<td>12/2001</td>
</tr>
</tbody>
</table>

STAFF RECOMMENDATION:

The staff requested that the recommendation be amended as follows:

1. Defer action on the sustainable yield for the Ewa Caprock Aquifer to the December 18, 1996 Commission meeting in order to consider the Puuola Caprock Users Group's draft nonpotable master plan for the Puuola area.

2. Require that the draft nonpotable master plan include each of the elements outlined in the Group's proposal, be as specific as possible (e.g. annual
projections of all nonpotable supply requirements detailed by project and TMK area), encompass the entire Puuloa area and all users in Puuloa, and include a scenario complying with the proposed 5 mgd sustainable yield. The Plan shall also address the current overpumpage at Well Nos. 1902-03 & 04 and Well Nos. 2001-05 & 2001-08.

3. Extend the deadline to September 30, 1996 for the submittal of any additional data or evidence (related to ground water modelling, hydrologic data, or other) which a party wishes to have considered in setting the sustainable yield of the Ewa Caprock Aquifer.

TESTIMONY BY APPLICANT:

Mr. Jeff Dinsmore, Vice President of Gentry Homes, Ltd., submitted a written and oral testimony on behalf of the Puuloa Caprock Users Group. He stated that they were in agreement with the staff submittal, however, requested that the deadline for the submittal of any additional data for consideration of the sustainable yield be extended from September 30, 1996 until December 18, 1996.

Mr. Douglas Ing, attorney for Hawaii Prince Golf Club, stated his objections to the staff’s recommendation of a 5 mgd ceiling. (Note: Subsequent to Mr. Ing’s testimony, the staff’s submittal was amended to specify that the draft plan shall include a scenario complying with the 5 mgd sustainable yield estimate.)

TESTIMONIES:

Mr. Tim Steinberger, of the City and County Department of Wastewater Management was available for questions from the Commission.

MOTION: (MIKE/NOBRIGA)

To approve staff’s recommendation as amended.

UNANIMOUSLY APPROVED AS AMENDED.

The Chairperson adjourned the meeting at 3:32 p.m.

Respectfully submitted,

[Signature]

JANIS F. UWAIN
Secretary

APPROVED AS SUBMITTED:

[Signature]

RAE M. LOUI
Deputy Director
APPENDIX A

AGENDA 2
Item 2

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 821
HONOLULU, HAWAII 96809

STAFF SUBMITTAL
for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT
September 11, 1996
Honolulu, Oahu

APPLICATIONS FOR WATER USE PERMITS
Requests for New and Continued Nonpotable Urban Uses

ALLOCATION PLAN FOR WATER USE PERMITS
In Response to Lower Sustainable Yield Estimate for the Puuloa Area
Ewa Caprock Ground Water Management Area, Oahu

APPLICANT(S):

(Well Nos. 1905-08,10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-04,07)
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 2003-01,02,05)
Kapolei People's Inc.
91-701 Farrington Hwy.
Kapolei, HI 96707

(Well Nos. 1900-02,17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10,11 & 2002-15)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

LANDOWNER(S):

Same

AGENDA 2
Item 2
BACKGROUND:

On September 28, 1979, the Board of Land and Natural Resources (BLNR) designated the Pearl Harbor Ground Water Control Area (Pearl Harbor GWCA; Judicial Boundaries of Ewa and Wahiawa Districts) pursuant to Chapter 177, HRS, Ground Water Use Act.

On March 22, 1985, the BLNR established subareas for the Pearl Harbor GWCA, including the Coastal Caprock Subarea.

In 1990, the Commission on Water Resource Management (Commission) adopted the Water Resources and Protection Plan (Plan). The Plan included, as required by HRS 174C-31(c), "hydrologic units and their characteristics, including the quantity and quality of available resource...". The Plan did not include the brackish Ewa Caprock Aquifer as a hydrologic unit.

In the 1988-1992 timeframe, water use permits totalling 19.524 million gallons per day (mgd) were awarded in the Ewa Caprock Aquifer mainly to existing irrigation uses (eg. Oahu Sugar Co.). Other existing water use permits totaled 39.608 mgd for various salt water and brackish to saline water uses (chlorides > 1,000 MG/L).

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer within the existing designated ground water management area. Due to uncertainties regarding the aquifer’s sustainable yield, the Commission did not adopt a sustainable yield estimate for the aquifer.

Since March 1993, the Commission has been awarding one-year interim permits for new uses for the Ewa Caprock Aquifer.

In May 1996, the staff completed a re-evaluation of the Ewa Caprock Aquifer sustainable yield. Based on the staff’s analysis of historic data, the staff proposed the establishment of three (3) aquifer systems within the Ewa Caprock Aquifer: Puuloa, Kapolei, and Malakole (see Exhibit
1), with sustainable yields of 5 mgd, 3 mgd, and 1 mgd, respectively, for chloride concentrations less than 1,000 MG/L.

On August 14, 1996, a public hearing was held on the proposed establishment of aquifer systems and sustainable yields for the caprock aquifer. Before the close of the public hearing, Hawaii Prince Golf Club (HPGC) submitted a written request for a contested case hearing on the proposed establishment of a 5 mgd sustainable yield for the Puuloa area. The written petition was received on August 23, 1996.

ANALYSIS/ISSUES:

Normally, the staff lists and analyzes the criteria set forth in §13-171-13 HAR which must be established by the applicant. However, there are larger issues which must be addressed before this analysis can occur. These are discussed as follows:

A. Nonpotable Water Demand Expected to Increase

The Planning Department, City and County of Honolulu, is in the process of revising the Development Plans for Ewa and Central Oahu. The draft plan shows a projected population increase from 130,526 in 1990 to 185,091 in 2020. This corresponds to a 42% increase in population for the area. A 60% increase in housing units over the same time period is projected: from 36,262 units in 1990 to 58,118 units in 2020 (for Ewa Employment and Dispersed Residential; Exhibit 2). This growth will result in an increase in water needs, both potable and nonpotable.

Although the water demand for Ewa was not available, City and County planners have testified that the 2020 demand for water for the projected growth of the Ewa, Central, Waianae, and Honolulu districts will be about another 90 mgd. This increased demand consists of 56.5 mgd for potable water needs and 33.5 mgd for nonpotable water needs. This is exclusive of agricultural water demand, which is specified in the City's plans to provide an open space buffer for the proposed urban growth in Central Oahu. Thus, the 90 mgd water demand exceeds the remaining water resources on the island (75 mgd). It is critical that alternative nonpotable sources of water be a part of Oahu's water planning in order to reduce the competition for potable water as an irrigation source. Further, these figures underscore the important role of the brackish Ewa Caprock Aquifer and of the reclaimed sewage effluent in future growth plans.

To address the expected increase in nonpotable water demand for urban uses, the Commission and the City Department of Wastewater Management retained a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. The February, 1996 plan recommends construction of a demonstration recharge trench in the Ewa Caprock using reclaimed water. The staff has participated in a group consisting of representatives from the Department of Health, City Department of Wastewater Management, City Planning Department, and the Board of Water Supply to champion the use of reclaimed water and a water reclamation project for the Ewa Plain. The major issues include identification of a purveyor for the reclaimed water resource and rates/cost of the resource.

In further support of the plan for reuse on the Ewa Plain, the Commission adopted the following reclaimed water policy on March 13, 1996:

It is the policy of the Commission on Water Resource Management (Commission)
to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

B. Current Allocations Exceed Sustainable Yield in Puuloa

The staff's recommendation of a sustainable yield for the Ewa Caprock Aquifer is based on historical data reflecting the aquifer's response to natural sugarcane irrigation and current urban conditions. The lack of imported basal water by Oahu Sugar Company (OSCo) augmenting the natural sustainable yield of the caprock will affect water availability.

If the Commission were to approve the staff's recommendation to establish three aquifer systems within the Ewa Caprock Aquifer with sustainable yields of 5 mgd for Puuloa, 3 mgd for Kapolei, and 1 mgd for Malakole, only the Puuloa area would be over-allocated. Exhibit 3 (column 5) shows the current allocations in the Puuloa area of the caprock, totalling 15.177 mgd.

However, the over-allocation problem may be only temporary because the City Department of Wastewater Management is moving forward with their plans for a demonstration recharge trench that will recharge the Puuloa area of the Ewa Caprock Aquifer with 5 mgd of R-2 effluent from the Honouliuli Wastewater Treatment Plant. This would replace some of the lost imported basal irrigation recharge from OSCo. It is expected that the demonstration recharge trench will be online by 1999. If the pilot project is successful, additional trenches will be installed to recharge the Kapolei as well as Puuloa area.

The current schedule for the demonstration recharge trench (5 mgd) and full application (13 mgd) is:

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honouliuli Secondary Treatment Operational</td>
<td>12/1997</td>
</tr>
<tr>
<td>Demonstration Recharge Trench Operational (5 mgd)</td>
<td>12/1998</td>
</tr>
<tr>
<td>Testing Complete</td>
<td>12/1999</td>
</tr>
<tr>
<td>Complete Trench Operational (13 mgd)</td>
<td>12/2000</td>
</tr>
</tbody>
</table>

The current design also allows for direct use of the R-2 effluent in addition to recharging the aquifer. The City is evaluating the feasibility of constructing an R-1 treatment facility to enable less restricted uses.

C. New Water Use Permit Applications

Pending applications for the Puuloa area, shown in Exhibit 4, total 3.174 mgd. For the Kapolei area, requests total 1.796 mgd (Exhibit 5). All pending requests are for various nonpotable non-agricultural uses. On March 13, 1996, the Commission deferred action on all pending requests in the Ewa Caprock until a decision is made on the proposed establishment of a sustainable yield estimate in the Water Resources Protection Plan.
Also shown as a pending request shown in Exhibit 4 is an application for Haselco (Ewa), Inc.'s (Haselco) proposed Ewa Marina project in the Puuoloa area, which is the subject of a contested case hearing. The "quantity of the use" for the marina excavation has not been established. The State Department of Transportation also has a pending water use permit application for the Barbers Point Harbor expansion in the Malakole area; action on this application has been deferred pending written notification of the reclassification of the lands from the Agricultural to Urban designation. There are no other pending requests in Malakole.

One condition that new water use permit applications must meet is that the use: "can be accommodated with the available water source..." §174C-49(a) HRS. There has been a request for a contested case hearing on the proposed sustainable yield for Puuoloa. The staff does not believe that there is a right to a contested case hearing on this matter and is planning to submit the proposed Hawaii Water Plan update to the Commission for action at the Commission meeting of December 18, 1996.

D. Step-Down of Allocations to Match Sustainable Yield

The staff will submit for Commission action a proposal to step-down current allocations to match sustainable yield as well as a recommendation regarding pending new water use permit requests. We have discussed several alternatives with a self-elected Steering Committee of the users and with the Reclaimed Water Champions (Department of Health, City Department of Wastewater Management, City Planning Department, Honolulu Board of Water Supply, Commission on Water Resource Management). In response, on August 29, 1996, a written proposal (Exhibit 6) was received from the Puuoloa Caprock Users Group (Group), which includes HPGC, Sogo Hawaii, Inc., Haselco, Gentry Homes, Ltd., and the Navy. The Group does not include Honolulu Board of Water Supply, City Department of Wastewater Management (DWWM), Campbell Estate, and the U.S. Fish and Wildlife Service, the latter three of which are permitted water users in the Puuoloa area and are necessary partners in any usable plan.

The Group has requested 90 days to prepare and submit a draft nonpotable master plan (Plan) to the Commission, which will include a recommended plan to manage water use over a proposed two-year interim period. The proposal is very general and does not address issues important to this effort such as the current overpumpage by DWWM (Well Nos. 1902-03 & 04) and Gentry (Well No. 2001-05). Further, the Group implies that it is in possession of data not previously submitted that would be helpful to the Commission in setting the sustainable yield. Although the deadline for testimonies has passed, staff recommends allowing additional time for submittal of the information.

RECOMMENDATIONS:

The staff recommends that the Commission:

1. Defer action on the sustainable yield for the Ewa Caprock Aquifer to the December 18, 1996 Commission meeting in order to consider the Puuoloa Caprock Users Group's draft nonpotable master plan for the Puuoloa area.

2. Require that the draft nonpotable master plan include each of the elements outlined in the Group's proposal, be as specific as possible (eg. annual projections of all nonpotable supply requirements detailed by project and TMK area), and encompass the entire Puuoloa area and all users in Puuoloa. The Plan shall also address the current overpumpage at include a scenario complying with the proposed yield estimate.
Staff Submittal

Well Nos. 1902-03 & 04 and Well Nos. 2001-05.

3. Extend the deadline to September 30, 1996 for the submittal of any additional data or evidence (related to ground water modelling, hydrologic data, or other) which a party wishes to have considered in setting the sustainable yield of the Ewa Caprock Aquifer.

Respectfully submitted,

W. [Signature]
RAE M. LOUI
Deputy Director

Attachments
Exhibit 1 - Location Map
Exhibit 2 - Scenario Comparisons
Exhibit 3 - Ewa Caprock Permittees - Puuloa Area
Exhibit 4 - Puuloa Aquifer System
Exhibit 5 - Kapolei Aquifer System
Exhibit 6 - Puuloa Caprock Users Group Proposal

APPROVED FOR SUBMITTAL:

[Signature]
MICHAEL D. WILSON, Chairperson

Dinsmore: love raw data that has not previously been submitted.
Request add't time to present & analyze data, may have affect on SY estimate.
Campbell was cable, will be in again.

Dr. Prince: request that amendment to proposal be reconsidered (5 mgd compliance). Work in effect, be established.
SY is 5 mgd. Was hoping to manage aquifer w/out ceiling in performance standards.

Mike: do scenarios, 1 w/5 mgd, 1 w/another 5 mgd.

Steinberger. DWMN receive 13 decrease.

washdown, polymer, enhancement, injection
Long-range projection 2 mgd. (to come at 5 ve ve of Pt)
1 mgd for Barber's Pt. 13 decrease to 10 mgd,
EXHIBIT 1
### Scenario Comparisons

**Central Oahu Development Plan Area**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive Ewa</td>
<td>130,528</td>
<td>164,350</td>
<td>33,822</td>
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<tr>
<td>Dispersed Development</td>
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<td>184,444</td>
<td>53,916</td>
<td>41.4%</td>
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<tr>
<td>Ewa Employment</td>
<td>130,528</td>
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<tr>
<td>Ewa &amp; Central Oahu</td>
<td>130,528</td>
<td>213,802</td>
<td>83,274</td>
<td>64.3%</td>
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</table>

Current Trend: 130,528 to 177,758, an increase of 47,212, 36.9%

### Change in Resident Population

**Central Oahu Development Plan Sub-Areas (1990-2020)**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>1990</th>
<th>2020</th>
<th>Change</th>
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<tbody>
<tr>
<td>Baseline</td>
<td>130,528</td>
<td>177,758</td>
<td>47,212</td>
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<tr>
<td>Scenario 1</td>
<td>130,528</td>
<td>177,758</td>
<td>47,212</td>
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<tr>
<td>Scenario 2</td>
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<td>47,212</td>
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</table>

City and County of Honolulu Planning Department, August 1984

### Change in Non-Construction Jobs

**Central Oahu Development Plan Sub-Areas (1990-2020)**

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Intensive Ewa</td>
<td>22,029</td>
<td>52,369</td>
<td>30,340</td>
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<td>Dispersed Development</td>
<td>22,029</td>
<td>56,304</td>
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<tr>
<td>Ewa Employment</td>
<td>22,029</td>
<td>57,116</td>
<td>35,087</td>
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<tr>
<td>Ewa &amp; Central Oahu</td>
<td>22,029</td>
<td>60,295</td>
<td>38,266</td>
<td>178.3%</td>
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</table>

Current Trend: 22,029 to 60,295, an increase of 38,266, 178.3%

City and County of Honolulu Planning Department, August 1984
<table>
<thead>
<tr>
<th>(1) PERMITTEE</th>
<th>(2) WELL NAME (WELL NO.)</th>
<th>(3) DATE OF APPROVAL</th>
<th>(4) TYPE OF USE</th>
<th>(5) ALLOCATION</th>
<th>(6) LATEST 12-MAY</th>
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<tr>
<td>Haseko</td>
<td>EP 27A,27B,28,29 (1902-01)</td>
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<td>Irrigation (Agric.)</td>
<td>2.660</td>
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<td>EP 23 (2001-01)</td>
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<td>EP 22 (1900-02)</td>
<td>10/19/88</td>
<td>Irrigation (G. Course)</td>
<td>0.900</td>
<td>1.049</td>
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<td>EP 22 &amp; Wells 1 to 5 (1900-02, 1900-17 to 20, 1901-03)</td>
<td>7/13/94</td>
<td>Irrigation (G. Course)</td>
<td>0.129</td>
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<tr>
<td>Sogo Hawaii</td>
<td>Puulua G.C. Irr (1900-21)</td>
<td>2/13/91</td>
<td>Irrigation (G. Course)</td>
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<td>Puulua Wells A &amp; B (1900-22 &amp; 1929-06)</td>
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<td>Irrigation (G. Course)</td>
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<td>0.512</td>
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<td>Haseko</td>
<td>Haseko No. 1 (1902-01)</td>
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<td>Irrigation (G. Course, Landscape, Dust Control)</td>
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<td>C&amp;C DWM</td>
<td>Honouliu STP 1 &amp; 2 (1902-03 &amp; 04)</td>
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<td>Industrial</td>
<td>0.500</td>
<td>0.992</td>
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<td>Gentry</td>
<td>Ewa Gentry (2001-02)</td>
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<td>Gentry</td>
<td>Geiger Park (2001-03)</td>
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<td>Irrigation (Park)</td>
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<td>Gentry</td>
<td>Sunrise Apt (2001-04)</td>
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<td>0.064</td>
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<td>Palm Villa I Homeowners</td>
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<td>Irrigation (Landscape)</td>
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<td>Arbors Homeowners</td>
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<td>Palm Villa II Homeowners</td>
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<td>Gentry</td>
<td>Ft. Weaver Apt (2001-09)</td>
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<td>Gentry</td>
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<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
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<td>Palm Court Homeowners</td>
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<td>Irrigation (Landscape)</td>
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<td>0.026</td>
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<td>U.S. Fish &amp; Wildlife</td>
<td>Honouliu Unit (2101-14)</td>
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<td>Habitat Maintenance</td>
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<td><strong>TOTALS</strong></td>
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<td>2.836</td>
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## PUULOA AQUIFER SYSTEM

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<th>ITEM</th>
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<tr>
<td>Sustainable Yield Estimate</td>
<td>15.000</td>
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<td>Less: Other Existing Permits (shown in Exhibit 3)</td>
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<tr>
<td>Current Available Allocation</td>
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<td>Less: Requests for New Interim Permits</td>
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<td>Hawaii Prince Golf Club (1900-02, 17 to 20, 1901-03)</td>
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<tr>
<td>Gentry Co. (2001-03)</td>
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<tr>
<td>(2001-04)</td>
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<td>(2001-05)</td>
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<td>(2001-09)</td>
<td>0.023</td>
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<td>(2001-10)</td>
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<td>(2002-15)</td>
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<tr>
<td>Haseko (Ewa), Inc. (1902-01)</td>
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<tr>
<td>Arbors Assoc. (2001-07)</td>
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<td>Palm Villa II Assoc. (2001-08)</td>
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<tr>
<td>Palm Court Assoc. (2002-12)</td>
<td>0.066 -2.071</td>
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<td>Less: New Applications</td>
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<td>Hawaii Prince Golf Club (1900-02, 17 to 20, 1901-03)</td>
<td>0.371</td>
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<td>Gentry Development Co. (2001-11)</td>
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<td>Gentry Development Co. (2002-15)</td>
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<td>Haseko (Ewa), Inc. (Ewa Marina) *</td>
<td>-1.103</td>
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<td>Available Allocation</td>
<td>-5.344</td>
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* Proposed marina project will result in a permanent reduction in caprock storage capacity.
### KAPOLEI AQUIFER SYSTEM

<table>
<thead>
<tr>
<th>ITEM</th>
<th>KAPOLEI AQUIFER SYSTEM (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Yield Estimate</td>
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<tr>
<td>Less: Other Existing Permits</td>
<td></td>
</tr>
<tr>
<td>Pu‘u Makakilo (1904-02)</td>
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<tr>
<td>Current Available Allocation</td>
<td>3.850</td>
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<td>Less: Requests for New Interim Permits</td>
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<tr>
<td>Campbell Estate (1905-08,10)</td>
<td>0.302</td>
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<tr>
<td>State HFDC (2003-04,07)</td>
<td>0.494</td>
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<tr>
<td>Kapolei People’s Inc. (2003-01,02,05)</td>
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<td>Less: New Applications</td>
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<td>(none)</td>
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<tr>
<td>Available Allocation</td>
<td>2.054</td>
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</table>

---

**EXHIBIT 5**
The PCUG will prepare a non-potable master plan for the Puuloa Aquifer System which will include: a projection of all non-potable supply requirements; a management plan to optimize use of non-potable resources including treated wastewater effluent and the available supply of brackish groundwater; and a compilation of hydrologic data which will provide the basis for the proposed use of non-potable resources.

A draft of the non-potable master plan, as a work in progress, will be submitted in 90 days. In addition to a discussion of each of the master plan topics indicated above, this draft report will also include a recommended plan to manage water use over a proposed two-year interim period. The management plan at a minimum shall include the following:

(a) An agreement among PCUG members to keep actual water use of the Puuloa Aquifer System below an amount jointly agreed to by the PCUG members and the CWRM. Actual water use shall be evaluated on a 12-month moving average basis.

(b) An agreement among the PCUG members for the pro-rata participation in wastewater reuse by all PCUG members.

(c) An agreement to allow new interim water uses by PCUG members as long as they are consistent with conditions (a) and (b) above.

3. The PCUG requests that the CWRM enter into agreements confirming that the interim 2-year period shall not be counted as part of a 4-year "use it or lose it" assessment by the CWRM.

4. The PCUG will form a steering committee to work directly with the City's Department of Wastewater Management on wastewater effluent reuse. Based on a preliminary assessment of the quantity and location of required non-potable supply, an evaluation of pipeline delivery of effluent treated to R-1 quality will be given the highest priority.

5. The PCUG believes that a more complete set of data is necessary in order to make a confident assessment of the Puuloa aquifer system's sustainable yield. PCUG members will collect and provide to the CWRM hydrologic data over and above that which is being submitted to the CWRM on a monthly basis as a requirement of its water use permits.
Hawaii Prince Golf Course

HASEKO (Ewa), Inc.

Department of Navy
(The Department of the Navy's Participation is in connection with and in support of its agricultural outlease program.)

EXHIBIT 6
# OAHU DRINKING WATER PICTURE

**Groundwater Sources:**

<table>
<thead>
<tr>
<th>Source</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developable Yield</td>
<td>415 mgd</td>
</tr>
<tr>
<td>Utilized</td>
<td>340 mgd</td>
</tr>
<tr>
<td>Available</td>
<td>75 mgd</td>
</tr>
</tbody>
</table>
OAHU DEMAND VS. SUPPLY

2020 Projected Demand 90 mgd

(Ewa, Central Oahu, Waianae, Honolulu)

Available Supply 75 mgd

DEFICIT -15 mgd
OAHU 2020 DEMAND

Forecasted Demand:

Potable 56.5 mgd
Nonpotable 33.5 mgd
TOTAL 90 mgd

Alternative Sources:

Groundwater 75 mgd
Wastewater Effluent 110 mgd
Conservation ?
Commission on Water Resource Management  
Department of Land and Natural resources  
State of Hawaii  

September 11, 1996

Re: In the matter of the Allocation Plan For Water Use Permits  
In Response to Lower Sustainable Yield Estimate for the Puuloa Area  
Ewa Caprock Ground Water Management Area, Oahu

Chairman Wilson and members of the State Water Commission:

My name is Jeff Dinsmore. I am a Vice President of Gentry Homes, Ltd., and I am here to testify on behalf of the Puuloa Caprock Users Group on the Commission On Water Resource Management's Staff submittal on the above mentioned subject. I previously testified at the August 14 hearing for the PCUG and requested a 90 day extension to prepare and submit a draft nonpotable water master plan for the Puuloa Caprock area.

The Puuloa Caprock Users Group is in agreement with the Staff recommendations and would like to thank them for their effort. We are confident that a mutually beneficial plan can be prepared and implemented.

We do have one change to request of the staff recommendation. We would like to request that the deadline for the submittal of any additional data for consideration of the sustainable yield be extended from September 30, 1996 until December 18, 1996.

Thank you for your time and due consideration of our request. If you have any questions, I will do my best to answer them for you.

Sincerely,

Puuloa Caprock Users Group

Jeffrey C. Dinsmore
April 17, 1996

Rae M. Loui, Deputy Director
Commission on Water Resource Management
Kalanikolu Building
1151 Punchbowl Street
Room 227
Honolulu, HI 96813

Dear Ms. Loui:

During the Water Commission meeting held on April 15, 1996, a Summary of Ewa Caprock Permitted Uses was distributed by your staff to various interested persons. By this letter, I offer a couple of corrections to the information included in that Summary with regard to permits held by HASEKO (Ewa), Inc.

First of all, the pertinent well name is EP-27, not EP-24.

Second, HASEKO holds two separate permits. One is an interim permit for 1.5 mgd for golf course, landscaping, and construction uses. The other is a permanent permit, transferred from Oahu Sugar to HASEKO, for 2.66 mgd for agricultural use.

I note that the March 13, 1996 Staff Submittal on the Ewa Caprock Sustainable Yield agenda item correctly identifies the two separate permits, although the holder of the permanent permit is still listed as Oahu Sugar.

I offer these corrections to avoid any confusion in the future. If you or your staff do not concur with the information I offer, I would appreciate notification as soon as possible so that we may clear up any discrepancies. You may contact Raymond S. Kanna or myself at 599-1444.

Sincerely,

Nelson W.G. Lee
Executive Vice President

cc: Yvonne Izu, Esq.
    Raymond S. Kanna
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 621
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

April 15, 1996
Honolulu, Oahu

REPORT ON PERMIT VIOLATIONS
Applicants for New Interim Water Use Permits
Ewa Caprock Ground Water Management Area, Oahu

APPLICANT(S):

(Well Nos. 1905-08,10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-04,07)
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 1900-02,17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10,11)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

(Well No. 2001-07)
The Arbors Association
91-920 La`aulu St., #1G
Ewa Beach, HI 96706

LANDOWNER(S): Same

Same

Same

Same

Same

Same
(Well No. 2001-08)
Palm Villas II Association
91-1119 Mikohu St., #D
Ewa Beach, HI 96706

(Well No. 2002-12)
Palm Court Association
91-1019 Puaniu St., #25R
Ewa Beach, HI 96706

(Well No. 1902-01)
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

BACKGROUND:

On March 13, 1996, the Commission on Water Resource Management (Commission) deferred action on all pending requests to continue uses in the Ewa Caprock and directed the staff to submit a report describing permit violations in the Ewa Caprock. The Commission also directed staff to resolve the violations prior to Commission action on the requests for new interim water use permits.

A summary of the permit violations is shown in Table 1.
### Table 1. Summary of Permit Violations

<table>
<thead>
<tr>
<th>APPLICANT/WELL NO.</th>
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<th>PUMP</th>
<th>WATER USE</th>
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<tbody>
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<td></td>
<td></td>
<td>WCR</td>
<td>ELEV</td>
<td>AS-BUILT</td>
</tr>
<tr>
<td>Hawaii Prince</td>
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<td>2003-07</td>
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* Not a clear condition of the permit
** After-the-fact application for a pump installation permit received 3/13/96.

- **WCR**: Well Completion Report
- **ELEV**: Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
- **AS-BUILT**: As-built sectional drawing of the well
- **PUMP TEST**: Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.
- **PCR**: (Permanent) Pump Installation Completion Report
- **AS-BUILT**: As-built sectional drawing of the permanent pump installation
- **WUR**: Water Use Report
- **OVER PUMPAGE**: 12-month moving average withdrawals in excess of allocation
WELL CONSTRUCTION/PUMP INSTALLATION PERMIT VIOLATIONS:

The asterisk (*) denotes items that were not clear conditions of the permit, but are needed by the staff to carry out resource assessment and analytical work. In most cases, the lack of clarity resulted from the issuance of combined well construction/pump installation permits, which did not specifically require pump completion reports and as-built sectional drawings of the pump installation. The staff has addressed this problem by developing a new procedure for combined well construction/pump installation permits applications, whereby the staff will recommend that the Commission approve the issuance of the well construction permit and delegate to the Chairperson the authority to approve the issuance of the pump installation permit upon the Commission's receipt of adequate pump test results and any other items that were required under the terms of the well construction permit.

Table 1 shows a number of wells under "Gentry Development" that have been transferred to individual homeowner's associations. However, Gentry was the entity in control of the well at the time that the construction violations occurred and thus should be responsible for seeking after-the-fact permits and/or compliance with well/pump permit conditions. A similar condition exists for wells listed under "State HFDC", where three (3) of the wells have been transferred to Kapolei Peoples, Inc.

WATER USE REPORTING:

The frequency of reporting water data for Well No. 2001-03 is inconsistent. As of April 3, 1996, the staff is not in receipt of any reports for 1996. Section 13-168-7(b) HAR requires the owner or operator of any well to file a report "...on a regular monthly (calendar or work schedule) basis to the commission on forms provided by the commission on or before the end of the month following the month for which water usage is to be reported."

At present, water data are being reported for Well No. 2001-05 on a regular basis; however, as of April 3, 1996, a report for January 1996 has not been submitted, and there are no reports for March-June 1995.

Reports for Well No. 2002-12 are inadequate, i.e., for the January 1996 report, the beginning of the period for which the amount is reported is unknown. In addition, when withdrawals are zero, monthly reports should still be submitted with the "Date Measurement(s) Taken" field filled in. A sample of the Commission's official report form is shown in Exhibit 1.

OVERPUMPAGE:

Table 1 also shows that withdrawals at the Hawaii Prince wells (Well Nos. 1900-02, 17 to 20 & 1901-03) and two Gentry-developed wells (Well Nos. 2001-05 and 2001-08) are in excess of the respective allocations. The graphs of reported monthly water use and computed 12-month moving averages are shown in Exhibits 2 to 4. The water use permit for Well No. 2001-08 has been transferred to Palm Villa II Homeowners Association. The current water use permittees should be held responsible for any violations related to usage and water use reporting.
An issue is whether the overpumpage should be viewed as an indication of underestimated water needs or whether enforcement action is more appropriate. The Commission has been approving interim permits for new uses pending verification of the actual quantity of water needed. Section 174C-50(g) provides "[i]n the final determination, the Commission may increase or reduce the amount initially granted the permittee".

With regard to pumpage at the Hawaii Prince wells, the extent to which the withdrawals have exceeded the allocation is not certain. Hawaii Prince has been estimating their water use on the basis of pumping times and pump capacities. The pump in EP 22 (Well No. 1900-02), Hawaii Prince's major pumping source, is a very old OSoCo pump that is most likely running at less than 100% efficiency. Therefore, reported estimated pumpage is probably greater than actual pumpage. The installation of flowmeters in each of the Hawaii Prince wells was completed on February 29, 1996. A review of actual water use in relation to the allocation should be done in light of metered pumpage data.

SUMMARY/CONCLUSION:

Letters have been sent to each of the entities listed in Table 1, notifying them of their lack of compliance with permit conditions and requesting the submittal of other items and documents that are needed by the Commission but were not clear conditions of the permit. The letters establish a May 15, 1996 deadline for compliance.

The requests for continued uses will be resubmitted for Commission action once all violations have been resolved and following the public hearing to modify the Water Resources and Protection Plan to include the Ewa Caprock as a hydrologic unit and to establish a sustainable yield for the caprock aquifer system. We are planning to hold the public hearing in July 1996.

Respectfully submitted,

RAE M. LOUI
Deputy Director

Exhibit(s): 1 (Monthly Water Use Report Form)  
2 (Graph of Monthly Water Use for Well No. 2001-05)  
3 (Graph of Monthly Water Use for Well No. 2001-08)  
4 (Graph of Monthly Water Use for Well Nos. 1900-02, 17 to 20 & 1901-03)

APPROVED FOR SUBMITTAL:

MICHAEL D. WILSON, Chairperson
Form WUI 1
5/27/83

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

MONTHLY GROUNDWATER USE REPORT FOR

GENTRY DEVELOPMENT CORP.
P.O. BOX 295
HONOLULU, HI 96809

Month of _____, 19__
Date Measurement(s) Taken

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly groundwater use and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 621, Honolulu HI 96809. For assistance, please call 587-0265 (Oahu only) or 1-800-468-4644 (neighbor islands).

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Water Level (ft. above mean)</th>
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<tbody>
<tr>
<td>2001-10</td>
<td>GENTRY AREA 24</td>
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</table>

Other comments or additional information:

Submitted by (print) __________________________ Title __________________________
Signature __________________________ Date __________________________

EXHIBIT I
Ewa By Gentry Community Association
Soda Creek III (Well No. 2001-05)

EXHIBIT 2

- monthly values
- WUP
- CI (mg/l)
- 12-MAV

(date (latest data 02/96))
Palm Villa II Homeowners Association
Palm Villa II Well (Well No. 2001-08)

EXHIBIT 3

Pumpage (mgd)

Cl (mg/l)

date (latest data 02/96)

JAN 94

JAN 95

JAN 96

monthly values —— WUP

12-MAV

Cl (mg/l)
Hawaii Prince G.C. Combined Pumpage
(Well Nos. 1900-02, 17 to 20; 1901-03)

EXHIBIT 4

pumpage (mgd)
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani Street, Suite 810  
Honolulu, HI 96813

Dear Mr. Lee:

Thank you for your letter of October 12, 1995, notifying the Commission on Water Resource Management (Commission) that no pumpage of Well No. 1902-01 has taken place due to electrical power constraints. We will look forward to receiving regular monthly reports of pumpage, water levels and chlorides once the power is connected.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI
Deputy Director
October 12, 1995

Ms. Rae M. Loui, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Loui:

Monthly Water Use Reporting for Well 1902-01
Ewa Caprock Groundwater Management Area, Oahu

In July 1994, the Commission on Water Resource Management (CWRM) granted a 1.5 MGD Water Use Permit from Well 1902-01 (also known as EP 27) to HASEKO (Ewa), Inc. for golf course irrigation and dust control. At that time, the remaining 2.66 MGD allocation for the well was retained by Oahu Sugar Company (OSCO) for sugarcane cultivation. OSCO’s active use of the facility ended in November 1994. Shortly after that, OSCO cut off electric power from its grid to the four well pumps. In June 1995, CWRM transferred the 2.66 MGD Water Use Permit for agricultural use from OSCO to HASEKO.

Since the facility was de-energized, HASEKO has been working to provide electrical power to the pumps, to put agricultural tenants on the property, and to obtain the necessary permits to proceed with the golf course’s construction. Up to now, no pumpage of Well 1902-01 by HASEKO for either golf course or agricultural use has taken place. As soon as the power is connected, HASEKO will begin filing its monthly water use report.

I understand this will satisfactorily meet HASEKO’s monthly reporting requirement under Administrative Rule 13-168-7. If this understanding is erroneous, please let me know. If you have any questions or require additional information, please contact Ray Kanna at 599-1444.

Sincerely,

Nelson W.G. Lee
Executive Vice President
MINUTES
FOR THE MEETING OF THE
COMMISSION ON WATER RESOURCE MANAGEMENT

DATE: March 13, 1996
TIME: 9:00 a.m.
PLACE: Honolulu Int'l Airport
       Interisland Terminal Conference Center, 7th Floor

Chairperson Michael Wilson called the meeting of the Commission on Water Resource Management to order at 9:15 a.m.

The following were in attendance:

MEMBERS: Mr. Michael Wilson
           Mr. Richard Cox
           Dr. Lawrence Milke
           Mr. Robert Girald
           Mr. David Nobriga
           Mr. Herbert Richards, Jr.

STAFF: Ms. Rae Loui        Ms. Lyann Mizuno
       Mr. Roy Hardy       Mr. Eric Hirano
       Mr. Glenn Bauer  Ms. Lenore Nakama
       Mr. Charley Ice   Ms. Janis Uwaine

COUNSEL: Mr. William Tam

OTHERS:

Alan Suwa        Yvonne Izu        Garrick Iwamuro
James Kumagai   Kathleen Hoff      E.A. Ho'oipo Martin
Pilkea Miller    Lola N. Mench      Yukie Y. Ohashi
Bob Nakata       Stephen Thomas      Tom Nance
Ryan Imata

All written testimonies submitted at the meeting are filed in the Commission office and are available for review by interested parties. The items were not taken in the order posted on the agenda.

1. MINUTES OF THE FEBRUARY 21, 1996 MEETING

MOTION: (NOBRIGA/RICHARDS)

To approve the minutes.

UNANIMOUSLY APPROVED.

2. OLD BUSINESS/ANNOUNCEMENTS

Deputy Director Rae Loui announced that there would be a hearing on Friday, March 15, 1996 on Maui regarding the following:

Item 1
ORDER TO SHOW CAUSE TO THE COUNTY OF MAUI WHY:

1. A WATER EMERGENCY SHOULD NOT BE DECLARED FOR THE IAO AQUIFER SYSTEM

2. THE ACTIONS NECESSARY TO MEET THE EMERGENCY SHOULD NOT BE ORDERED

3. REQUEST TO SCHEDULE A PUBLIC HEARING TO MODIFY WATER RESOURCES AND PROTECTION PLAN, SUSTAINABLE YIELD ESTIMATE FOR EWA CAPROCK AQUIFER SYSTEM

GENTRY DEVELOPMENT COMPANY, APPLICATION FOR A WATER USE PERMIT, APPLICATION FOR WELL PERMITS, GENTRY AREA 26 WELL (WELL NO. 2001-11), WELL CONSTRUCTION: 12-INCH DIAMETER, 58-FOOT DEEP WELL, PUMP INSTALLATION: 500 GPM PUMP, WATER USE: FUTURE NONPOTABLE URBAN USE FOR 0.172 MGD

APPLICATIONS FOR WATER USE PERMITS, REQUESTS TO CONTINUE NONPOTABLE URBAN USES, EWA GROUND WATER MANAGEMENT AREA, OAHU

(WELL NOS. 1905-08.10), THE ESTATE OF JAMES CAMPBELL

(WELL NOS. 2003-01.02.04.05.07), STATE OF HAWAII, HOUSING FINANCE & DEVELOPMENT CORP.

(WELL NOS. 1900-02.17 TO 20 & 1901-03), HAWAII PRINCE GOLF CLUB

(WELL NOS. 2001-03.04.05.09.10.11 & 2002-15), GENTRY DEVELOPMENT CO.

(WELL NO. 2001-07), THE ARBORS ASSOCIATION

(WELL NO. 2001-08), PALM VILLAS II ASSOCIATION

(WELL NO. 2002-12), PALM COURT ASSOCIATION

(WELL NO. 1902-01), HASEKO (EWA), INC.

PRESENTATION OF SUBMITTAL: Deputy Director Rae Loui and Glenn Bauer

STAFF'S RECOMMENDATION:

Staff requested to amend the recommendation as follows:

1. The Commission directs staff to submit the preliminary draft report for a peer review and to finalize the report in light of any review comments that may be received. The final report should include recommendations on further delineation of aquifer systems within the Ewa Caprock Aquifer and the possible adoption of a sustainable yield estimate(s).
2. The Commission authorizes staff to schedule a public hearing to modify the Water Resources and Protection Plan in accordance with HRS 174C-31(m). This hearing must be held on Oahu and must be noticed at least 90 days in advance. Permittees shall be mailed a copy of the notice.

3. The Commission directs staff to notify existing water use permittees and applicants for new water uses in the Ewa Caprock Aquifer System that the applications for continued or future use will be deferred for a period of approximately six (6) months until a decision is made on the possible establishment of a sustainable yield estimate in the Water Resources Protection Plan.

4. Direct staff to resolve violations prior to Commission action on requests for continued uses.

5. The Commission adopts the following policy statement on water reclamation: It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain and reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

TESTIMONIES:

James Kumagai, consultant for the Commission on Water Resource Management was available to answer questions.

Deputy Director Rae Loui stated that a report on the progress of the recharge trench would be submitted to the Commission at the next Oahu Commission meeting.

MOTION: (COX/GIRALD)

To approve staff's recommendation as amended.

UNANIMOUSLY APPROVED AS AMENDED.

Chairperson Wilson directed Deputy Director Rae Loui to send a letter informing the Ewa caprock users that there may not be enough water to go around at a certain time and to stress to the users that it is important for them to work with the City and County and also to indicate to the City and County that we are anxious to help them in working with the users. In the event that the users and the City and County cannot work together to come up with a solution, then the Commission will have to step in and institute a solution.

The Commission requested staff to submit a report on the permit violations in the Ewa Caprock.
The Commission also requested a report on current allocations and potential pumpages in the caprock.

4. PACIFIC ATLAS (HAWAII) INC., DEFERRAL--APPLICATION FOR A WATER USE PERMIT, BAY VIEW NOS. 1 TO 5 WELLS (WELL NOS. 2447-02 TO 06), TMK 4-5-30:37, FUTURE IRRIGATION USE FOR 0.208 MGD, Koolaupoko Ground Water Management Area, Oahu

PRESENTATION OF SUBMITTAL: Ms. Lyann Mizuno

Staff amended the second paragraph under the Background section of the submittal as follows:

On October 5, 1995, pump installation permit applications were received from Pacific Atlas (Hawaii), Inc. for Bay View Nos. 1 to 5 (Well Nos. 2447-02 to 06).

STAFF'S RECOMMENDATION:

Staff recommended that the Commission:

1. Defer action on the water use permit application for Bay View Nos. 1 to 5 (Well Nos. 2447-02 to 06) until the next regular meeting on Oahu.

2. Direct staff to report to the Commission on the applicant's compliance with the well construction permit conditions, along with recommendations on the imposition of fines, if any. This report shall be submitted prior to recommendations for Commission action on the applications for the pump installation permits, the after-the-fact stream channel alteration permit, and the water use permit.

TESTIMONY BY APPLICANT:

Mr. Tom Nance, project engineer, stated that they pumped each of the wells for just two days. There is an effect on the other wells that is noticeable and in that time period they did not see any affect on the stream. He also stated that there may be one over a longer period of time, although he does not think it will happen but he is willing to run more tests. He further stated that these are very small capacity wells with a cost of around $15,000 each and a seven day pump test would double their cost. He requested that they put the permanent pumps in the wells and pump them simultaneously, which is how they would be operated, and run the aquifer test in that manner. They would pump three of the five wells over a seven day period, producing a little more than the water use permit that they are asking for and they would monitor all the wells, including the two that weren't pumped. They would also monitor several locations on Kawa Stream and would get all the information that they would need. He further testified that the grassing begins next week. The only source of water that they have is a temporary connection to the Board of Water Supply and they received notice that they need to get off. He asked that the Commission consider allowing the permanent pumps to be installed for testing and grassing. Therefore, he requested that the Commission allow them to go ahead and
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 821
HONOLULU, HAWAII 96808

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

March 13, 1996
Honolulu, Oahu

REQUEST TO SCHEDULE A PUBLIC HEARING
TO MODIFY WATER RESOURCES AND PROTECTION PLAN
Sustainable Yield Estimate for
Ewa Caprock Aquifer System

Gentry Development Company
APPLICATION FOR A WATER USE PERMIT
APPLICATION FOR WELL PERMITS
Gentry Area 26 Well (Well No. 2001-11)
Well Construction: 19-inch Diameter, 58-foot Deep Well
Pump installation: 500 gpm Pump
Water Use: Future Nonpotable Urban Use for 0.172 mgd

APPLICATIONS FOR WATER USE PERMITS
Requests to Continue Nonpotable Urban Uses
Ewa Ground Water Management Area, Oahu

APPLICANT(S):

(Well Nos. 1905-08,10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-01,02,04,05,07)
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

LANDOWNER(S):

Same

Same

Item 3
(Well Nos. 1900-02,17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10,11 & 2002-15)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

(Well No. 2001-07)
The Arbors Association
91-920 La'aulu St., #1G
Ewa Beach, HI 96706

(Well No. 2001-08)
Palm Villas II Association
91-1119 Mikohu St., #D
Ewa Beach, HI 96706

(Well No. 2002-12)
Palm Court Association
91-1019 Puaniu St., #25R
Ewa Beach, HI 96706

(Well No. 1902-01)
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

BACKGROUND:

In 1990, the Commission on Water Resource Management (Commission) adopted the Water Resources and Protection Plan (Plan). The Plan included, as required by HRS 174C-31(c), "hydrologic units and their characteristics, including the quantity and quality of available resource...". The Plan did not include the brackish Ewa Caprock Aquifer as a hydrologic unit (Exhibit 1).

In the 1988-1992 timeframe, Ewa Caprock water use permits totalling 19.524 million gallons per day (mgd) were awarded mainly to existing irrigation uses (eg. Oahu Sugar Co.). Other existing water use permits totaled 39.608 mgd for various salt water and highly brackish to saline water uses (chlorides > 1,000 MG/L).
On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer and designated the aquifer as a water management area (Exhibit 1). Due to uncertainties regarding the aquifer’s sustainable yield, the Commission did not adopt a sustainable yield estimate for the aquifer.

On March 17, 1993, the Commission deferred action on pending applications for water use permits in the Ewa Caprock Aquifer to provide additional time for the public to review the proposed permits and issues related to water use permit processing.

On April 28, 1993, to satisfy the needs of new developments in the Kapolei and Puuloa areas of the caprock, applicants were awarded interim water use permits with a specified duration of one year. Special conditions were attached to each interim permit; these are shown in Exhibit 2.

On May 18, 1994, the Commission deferred action on requests for new interim permits to continue nonpotable urban uses to provide applicants with an additional thirty (30) days to comply with the data reporting requirement of the expired interim permits. In order for the Commission to track the behavior and response of aquifers in designated ground water management areas, all water use permits are conditioned on regular monthly reporting of pumpage, chlorides, water levels, and water temperatures. Water use reporting is required from all ground and surface water users statewide in accordance with §13-168-7 HAR.

On July 13, 1994, the Commission awarded new interim permits, valid for one year, for the above sources (excluding Well Nos. 2001-10 & 11). The special conditions of the new interim permits are shown in Exhibit 3.

On January 25, 1995, an interim water use permit was issued to Gentry Development Corp. for a new source to supply the Ewa by Gentry developments (Well No. 2001-10). The duration of this permit was for less than one year to be consistent with all other interim permits set to expire on July 13, 1995.

At the July 5, 1995 Commission meeting at Honokaa, Hawaii, the Commission voted to extend the duration of the interim permits that were due to expire on July 13, 1995, to allow decision-making on these requests to be made on Oahu. Requests for new water use permits to continue ground water uses after the July 12, 1995 expiration date have been received from each of the above applicants. Hawaii Prince has requested that their interim permitted use be increased by 0.371 mgd to bring their total interim allocation to 0.5 mgd.

On August 25, 1995, Gentry Development Company submitted applications for new well construction/pump installation and water use permits for Gentry Area 26 Well (Well No. 2001-11) for future nonpotable urban use for 171,600 gpd. At the January 24, 1996 Commission meeting in Wailuku, Maui, action on the water use permit application was deferred to the Commission’s next regular meeting on Oahu.
On February 21, 1996, the Commission approved the staff's recommendation to again defer action on the applications for Well No. 2001-11 pending the staff's review and analysis of ground water conditions in the Ewa Caprock Aquifer.

ANALYTICAL WORK:

The Ewa Caprock Aquifer is currently undergoing a period of change in response to the large-scale modifications in land and water use as sugarcane is replaced by urban developments. There has been much effort involved in modelling the behavior of the caprock aquifer. In an effort to better understand the existing and historical data upon which assessments of Ewa Caprock Aquifer dynamics are based, the available historical data from basal and caprock wells that were used for sugarcane irrigation supply were compiled and analyzed by staff. In addition, the staff has established a monitoring network and has been collecting ground water data at Oahu Sugar Company (OSCo) and private wells since April 1994. The primary purpose of sampling is to provide baseline data that can measure changes to the caprock aquifer over time.

A preliminary draft report of this analysis is submitted herewith as Exhibit 4. The major preliminary conclusions drawn in the draft report include recommendations for:

1. A sustainable yield of less than 10 mgd in the Puuloa area and less than 5 mgd in the Kapolei area. (Exhibits 5 and 6 show the current allocations and pending requests for ground water in the Puuloa and Kapolei areas.)

2. Reduction in permitted uses, unless there is a drastic change to the inflow of ground water to the caprock.

3. Adoption of a "go slow" approach to new wells in the Puuloa region.

4. Further division of the caprock into smaller management areas.

WATER USE PERMITS:

One condition that new water use permit applications must meet is that the use: "[c]an be accommodated with the available water source..." §174C-49(a) HRS. An estimate of sustainable yield is critical to this determination.

In light of the staff's recent analysis, which recommends a sustainable yield that is considerably less than current permitted uses, the Commission should defer action on new use applications pending 1) a final draft report, revised subsequent to peer review, and 2) incorporation of the Ewa Caprock Aquifer in the Water Resources and Protection Plan (in the event that the final report recommends adoption of a sustainable yield for the caprock aquifer). Pursuant to §174C-31(m), a public hearing must be held to modify the Water Resources and Protection Plan. Staff hopes to hold the public hearing by July 1996.
Possible violations are another issue with the interim water use permits in the caprock. There are possibly twenty (20) violations which range from unpermitted well construction and pump installations to noncompliance with approved permit conditions concerning all permittees to differing degrees. The staff is in the process of identifying potential violations for each well listed above and will attempt to resolve these issues with the applicants.

With regard to well construction permit conditions for wells that have been transferred to another permittee, it is unclear who should be responsible for compliance. For example, pumps have been installed in a number of the Gentry wells without an application or approval. Some of these wells have since been transferred to individual homeowner's associations. Should the homeowner's association be responsible for seeking an after-the-fact permit, or should the entity who was in control of the well at the time of the violation be responsible?

NON-POTABLE WATER MASTER PLAN:

The Planning Department, City and County of Honolulu, is in the process of revising the Development Plans for Ewa and Central Oahu. The draft plan shows a projected population increase from 130,526 in 1990 to 185,091 in 2020. This corresponds to a 42% increase in population for the area. A 60% increase in housing units over the same time period is projected: from 36,262 units in 1990 to 58,118 units in 2020 (for Ewa Employment and Dispersed Residential; Exhibit 7). This will result in an unquantified (as yet) but certain increase in nonpotable water needs.

To address the expected increase in nonpotable water demand for urban uses, the Commission and the City Department of Wastewater Management hired a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. The plan recommends construction of a demonstration recharge trench in the Ewa Caprock using reclaimed water. There are many issues regarding the use of reclaimed water. An entity is needed to address and resolve these issues. Staff has been discussing the feasibility and potential application of the recharge trench proposed by our consultant as a means by which to ensure the future viability of the nonpotable Ewa Caprock Aquifer with key personnel from the Department of Health, City Department of Wastewater Management, City Planning Department, and the Board of Water Supply. The consensus is that a water reclamation program should move forward, and the recharge trench is a good first step.

It is recommended that the Commission adopt a reclaimed water policy statement, which specifically addresses only the Ewa Caprock, but may include other areas in the future. The policy statement should recognize reclaimed water as a valuable water resource. A policy statement is also needed to address the concerns of the Department of Health regarding contamination of potable water resources. Specific language is suggested in the recommendation section below.
RECOMMENDATIONS:

The staff recommends the following:

1. The Commission directs staff to submit the preliminary draft report for a peer review and to finalize the report in light of any review comments that may be received. The final report should include recommendations on further delineation of aquifer systems within the Ewa Caprock Aquifer and the possible adoption of a sustainable yield estimate(s).

2. The Commission authorizes staff to schedule a public hearing to modify the Water Resources and Protection Plan in accordance with HRS 174C-31(m). This hearing must be held on Oahu and must be noticed at least 90 days in advance. Permittees shall be mailed a copy of the notice.

3. The Commission directs staff to notify existing water use permittees and applicants for new water uses in the Ewa Caprock Aquifer System that the applications for continued or future use will be deferred for a period of approximately six (6) months until a decision is made on the possible establishment of a sustainable yield estimate in the Water Resources Protection Plan.

4. Direct staff to resolve violations prior to Commission action on requests for continued uses.
5. The Commission adopts the following policy statement on water reclamation:

It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

Respectfully submitted,

[Signature]

for RAE M. LOUI
Deputy Director

Attachments

APPROVED FOR SUBMITTAL:

[Signature]

for MICHAEL D. WILSON, Chairperson
Special Conditions  
Ewa Caprock Temporary Water Use Permits

1. The temporary permits shall be valid for one (1) year from its approval date (April 28, 1994).

2. Quantities of allocations for each applicant are those calculated in Exhibit 3 for 1993 under the additional required allocation column. The pending applications which have no new or negative additional requirements are denied.

3. Each applicant's allocation shall be for the cumulative withdrawals from the corresponding well sources specified by each applicant in Exhibit 2, except for Gentry Pacific's well sources. Staff will be working with Gentry to associate water use permits for each well with each project individually within their total required allocation as shown in Exhibit 3.

4. Each applicant's allocation shall be used only for the corresponding uses specified by each applicant in Exhibit 3.

5. Within one (1) year, the applicants shall jointly submit a plan for the conversion to an alternative non-potable source other than the Ewa Caprock Aquifer. This plan shall include the applicant's intentions of funding the actual development of the alternative non-potable source.

6. Within sixty (60) days after approval, each applicant shall submit a water conservation plan or program according to the conditions in Attachment C.

7. The applicants shall continue to actively participate in the continuing development of the Ewa Caprock Regional Plan and its two main components which shall be coordinated by the Commission on Water Resource Management.

8. The applicants must actively participate in generating more information to show the utility of the caprock source in the absence of OSCo. recharge irrigation over the caprock and the complete absence of OSCo. irrigation in the Pearl Harbor area.

9. Temporary permits shall not be renewed if any of the above is not provided or followed.

EXHIBIT 2
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   
a. Reduce the demand for non-potable water by:
      
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 2
5. Require applicants cooperate with the Commission’s initiative in the development of the Nonpotable Water Master Plan for Central and Leeward Oahu.

6. Require that all temporary permits be subject to the standard conditions of a water use permit listed in Attachment B and the Conservation conditions listed in Attachment C.

CONSERVATION CONDITIONS

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EXHIBIT 3
EWA CAPROCK AQUIFER

Description of the Caprock Aquifer

The Ewa Plain caprock is a thick wedge of interbedded marine and terrestrial sediments that were deposited on the flanks of the Koolau and Waianae volcanoes during sea level changes and isostatic subsidence of Oahu during the Pleistocene ice ages. At the coast this sequence is greater than 1,000 feet thick (Stearns and Chamberlain, 1967). Inland, the sediments thin and pinch out against weathered lava flows.

The primary caprock aquifer is the highly permeable upper coralline limestone layer (referred to as "Limestone Aquifer 1" in Report R-79). The limestone layer continues offshore, but inland contacts alluvial sediments (Mink, 1989). Ground water within the aquifer is unconfined with a water level only several feet above sea level. The general ground water gradient is toward the coast.

Below this limestone layer, and found throughout the Ewa Plain, is a ubiquitous brown clay layer that acts as a bottom (aquiclude) to the coral aquifer. The clay layer is deeper at the coast than inland. Therefore, near the coast the brackish ground water floats on saline water as a Ghyben-Herzberg lens, but inland the brown clay truncates the salt water. Below the clay are other coral, sand, and mud deposits that contain very saline water. All plantation caprock wells and all new wells exploit the upper limestone aquifer. Alluvial ground water may be available in the Honouliuli area. However, developing alluvial water is not as easy as from coral due to the generally lower permeability of alluvium.

Prior to sugar cultivation, the caprock received a steady flux of ground water from natural leakage from the Koolau and Waianae basal aquifers, intermittent recharge from rainfall, and from occasional large storms which allowed dry streams, such as Kaloi Gulch, to flow to the Ewa Plain. The amount of leakage into the mauka caprock boundary is dependent upon the height of the water table in the basalt. When the first artesian well was drilled near Honouliuli in 1879 ground water rose to an estimated height of 32 feet msl (Cox, 1981, p. 55). West of Honouliuli the original ground water level in the Waianae aquifer would have been about 10 feet less (Mink, 1980, p. 37). The demise of sugar recharge into the caprock aquifer is similar to pre sugar days, except that the amount of natural leakage is much less due to the reduction of water levels in the basal aquifers.

Because of Ewa Plain's land use history, CWRM Report R-79 (Mink, 1989) divided the caprock into five broad areas: 1) Honouliuli; 2) Puuloa; 3) Kapolei; 4) BPNAS; and 5) Malakole. Honouliuli and Kapolei areas essentially overlie alluvium, while Puuloa, BPNAS, and Malakole areas are composed essentially of
coral limestone. However, for convenience of management, Honouliuli-Puuloa is considered to be a single region as are Kapolei-BPNAS and Malakole. Though in essence, the upper aquifers are hydraulically connected, and there may be only a weak connection between this aquifer and the lower ones.

History of Ewa Caprock Aquifer Development

The Ewa Plain has been irrigated with ground water since 1890. By 1930, Ewa Plantation had drilled 70 artesian basal wells (clustered as pumping batteries) through the Ewa Plain caprock sediments to irrigate cane lands makai of Farrington Highway (Stearns and Vaksvik, 1935). From 1930-35, five shallow wells (EP Pumps 20-24) were dug into the Ewa caprock to produce more irrigation water. All of them penetrated a shallow coral aquifer and were capable of producing large quantities of irrigation water. Later, other caprock sources were brought on line (EP Pumps 26,27,28,29; EP Pump 30; and EP Pump 31). The accompanying map shows the location of Ewa Plantation basal and caprock pumps.

When the shallow caprock wells were constructed, they pumped brackish ground water that originated primarily from basal return irrigation water. Consequently, the caprock water mixed with the artesian basal water already irrigating the region.

Figures 1-3 illustrate the chloride and pumpage history of the Ewa Plantation's basal sources. Pumpage includes total draft from the Koolau Aquifer (excluding EP Pump 10-12), and well battery pumpage. For convenience, water quality from the various pump batteries are shown separately. Figure 1 presents the most saline of the sources. EP Pumps 1 and 9 probably applied all of its water in the vicinity of Ewa Mill and near the first caprock sources. These batteries had deep wells that were drilled into the upper transition zone. To improve quality some were plugged back with cement, but all were abandoned and sealed by 1950. Figures 2 and 3 shows the marginal quality and potable quality sources respectively.

The freshest source, EP Pump 15,16, was recommended by Stearns (Stearns and Vaksvik, 1935, p. 460) as a way to freshen up the limestone aquifer. He noted that chloride concentrations in the basal sources had approached high levels and that pumpage from the new caprock wells would increase chloride concentrations in the coral aquifer by recirculating irrigation water. Evapotranspiration by sugar cane concentrated the salts in the return water. Construction of EP Pump 15,16 began in 1937 and it was put on-line to irrigate cane fields around 1939 or 1940.

Figure 4 shows initial (first 10 years) conditions in the caprock when the shallow wells were first constructed. Average yearly pumpage was about 11 mgd, while seasonal variations ranged from less than 5 mgd to more than 15 mgd. Water quality varied slightly with pumpage and with the seasonal variation of applied
basal water. Though Stearns mentioned (1935, p. 460) that much of the applied basal water had chlorides as high as 700± mg/l (and higher), Figure 4 shows that the caprock sources range between 700± mg/l to 1,000± mg/l.

Figure 5 presents the history of pumpage and chlorides for all caprock sources utilized by Ewa Plantation and Oahu Sugar Company (OSCo). Unfortunately there are missing monthly pumpage data between 1940 and 1963. The estimated average of 12 mgd is from CWRM Report R-79 (Mink, 1989). The graph does show a significant rise in chlorides for all caprock sources during the 1940's. Until the 1970's the average imported amount of Koolau basal water was 60-70 mgd. After 1981, the average amount dropped to less than 50 mgd.

CWRM Report R-88 entitled, Drought in Hawaii, indicates that the period from 1940-1954 was dry, and that "drought" was reported to be moderate to extreme. Though the data do not overlap, increased pumpage from artesian, and probably the caprock wells, contributed to the rise in chloride concentration around 1947 as seen in Figure 5. After EP Pumps 1 and 9 were abandoned and sealed, fresher basal water was used to irrigate Ewa cane lands. The result was a wholesale freshening of the caprock aquifer from the mid 1950's to the mid 1970's.

The rise in caprock chloride concentration beginning in the mid 1970's was due to several factors: 1) an increase in caprock well pumpage from 20 mgd to 30 mgd; 2) continued use of marginal quality basal water on lands near Ewa Mill and Fort Weaver Road; 3) several "extreme drought" periods throughout the 1970's reported in R-88; and 4) switching from furrow-irrigated cane to drip-irrigated cane in the mid 1970's to early 1980's (Hugh Morita, personal communication, 1996).

When OSCo took over from Ewa Plantation around 1970, they may have operated the irrigation system differently. Hugh Morita (personal communication, 1996) said that EP Pumps 3 and 7 supplied water to Field 57, which is mauka of EP Pump 23. From here the water split, some was piped to the EP 23 distribution system and the remainder was sent towards Ewa Mill. All of this water irrigated fields growing over the coral aquifer. EP Pumps 4 and 6 sent water west to a ditch system that runs at elevation 120± feet msl. EP Pump 5 supplied water to a ditch at elevation 160± feet msl. EP Pump 2 and Pumps 15 and 16 supplied water to cane in the Honouliuli area. All of this water irrigated fields growing on the alluvium. EP Pump 8 was for domestic use only.

Examination of Figures 2 and 3 will provide approximate 50-50 mixes of artesian water. For example during the last 15 years, Pumps 3 and 7 give a 50-50 mix of 500 mg/l chloride, while Pumps 4 and 6 show a mix of about 400 mg/l. The actual mix would be weighted to the pump which supplies the greatest proportion of water.
Report R-79 utilized a single cell mixing model to calculate ground water flows and caprock water chloride concentrations. The model calculated a steady-state inflow of return water and natural leakage for 1930 at 15 mgd. For the drip irrigation period between 1982-87 the model still assumes a 15 mgd inflow of ground water with a quality of 550 mg/l. The model calculated a steady-state mix of 1226 mg/l for water pumped from the caprock aquifer. Mink (1989) estimates that 4 mgd of the 15 mgd was the due to natural leakage, and 11 mgd was return irrigation water.

Since the late 1980’s, Ewa Plain land use changes occurred rapidly as many cane fields were replaced by golf courses and housing developments. Consequently, the amount and location of applied irrigation water changed considerably. By November 1994 all irrigation to Ewa Plain cane fields had ceased and all OSCo caprock sources stopped pumping (except EP Pump 22). This action reduced the average 1994 pumpage from the caprock aquifer in the Puuloa area from 17 mgd to 3 mgd, and a portion of irrigation water ceased returning to the caprock aquifer.

Periods of Chloride Equilibrium

Examination of Figure 5 shows that only two periods of relative chloride stability exist in the record. The first is from 1930 to about 1940, and the second is from 1952 to approximately 1970. These intervals represent periods of stable pumping, acreage, and irrigation methods. The chloride quality of the mixture of the applied basal water (Figures 1-3) was relatively stable during the early 1930’s, and again between 1952 to 1970. Chlorides in the caprock wells rose in the early 1940’s when water quality in EP Pumps 1 and 9 worsened.

All other periods in the record that show rising (1940-1949; 1975-present) or falling (1950-1952) chloride values are during times of non-equilibrium when a major change took place such as caprock pumpage, irrigation method, acreage, or quality of applied basal water.

It is interesting to note from Figure 5 that even after sugar ceased, and total pumpage reduced to less than 5 mgd, some wells continued to exhibit rising chlorides. Any ground-water flow or solute transport model constructed should calibrate to the two equilibrium periods outlined above.

Estimated Sustainable Yield of the Ewa Plain

Report R-79 provided sustainable yield estimates for the Ewa Plain caprock aquifer. Unlike the methodology used to calculate sustainable yield for large basaltic aquifer systems (State Water Resource Protection Plan, Vol. II, 1992), the sustainable yield estimate for the caprock is based on an optimal amount of pumpage to achieve an acceptable water quality for irrigation (< 1,000 mg/l chloride). Essentially, sustainable yield for the caprock aquifer is defined as "net pumpage" or the difference between
total pumpage and the return irrigation component plus natural leakage.

During the plantation time, water quality was a function of cane acreage, caprock pumpage, irrigation method (furrow or drip), and basal water quality. Assuming that natural leakage is constant, changes in the irrigation method and acreage changed net pumpage or sustainable yield. Since the upper limestone aquifer is a result of a 100 years of irrigation, past land use changes and irrigation methods have altered the sustainable yield several times. Return basal irrigation water and natural basal leakage inflow from the Honouliuli alluvium into the limestone aquifer contributed to recharge. The table below summarizes these changes as presented in R-79 and Figure 5 for the Puuloa area.

<table>
<thead>
<tr>
<th>Period</th>
<th>Average Caprock Pumpage (mgd)</th>
<th>Caprock Chloride (mg/l)</th>
<th>Irri. Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930'-1940</td>
<td>11</td>
<td>700-1050</td>
<td>Furrow</td>
<td>Equilibrium condition 2500 acres of cane</td>
</tr>
<tr>
<td>1970-1980</td>
<td>22</td>
<td>600-800</td>
<td>Furrow Drip</td>
<td>Non-equilibrium conditions EP Pumps 20,21,22 increasing chlorides</td>
</tr>
<tr>
<td>1980-1989</td>
<td>21</td>
<td>900-1000</td>
<td>Drip</td>
<td>Non-equilibrium conditions</td>
</tr>
<tr>
<td>1989-1994</td>
<td>14</td>
<td>1000-1400</td>
<td>Drip</td>
<td>Non-equilibrium conditions Reduced acreage</td>
</tr>
</tbody>
</table>

Report R-79 estimates (p. 41) that fields irrigated by Koolau or Waianae basal sources return 53 percent of the applied water if furrow irrigation methods are employed or 41 percent if drip methods are used (using water balance coefficients applied in CWRM Report R-78, 1988). For caprock sources 49 percent is returned for furrow, whereas only 29 percent is returned for drip. Using 1981 and 1986 (mentioned in R-79 as predominately furrow and drip years respectively) to compare differences for return water quantities over the entire region, the report estimates that 32 mgd of basal water and 15.3 mgd of caprock water was return irrigation in 1981, while 16 mgd basal and 5.5 mgd caprock was return water in 1986. Net pumpage in 1981 was 15.7 mgd, while in 1986 it was 13.5 mgd (R-79, p. 43).
From the above analysis of the return component, R-79 (p. 48) estimated the sustainable yield for the three areas. Sustainable yield is maintaining chlorides at "less than 1,000 mg/l for current [as of 1989] and anticipated land use conditions". "Future" means when sugar operations cease, our present condition, and when there is no significant amount of return irrigation water. Below is the table presented in R-79 (p. 48).

<table>
<thead>
<tr>
<th>Area</th>
<th>Current (mgd)</th>
<th>Future (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honouliuli-Puuloa</td>
<td>10-15</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Kapolei-BPNAS</td>
<td>5</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Malakole</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

The present time

Presently the Puuloa Sector caprock aquifer is in a state of non-equilibrium. All imported basal water has ceased. Though pumpage from private wells averages between 2-3 mgd, a very small fraction of that amount returns as recharge. Recirculation of the same water and salt build-up in the soil can only be alleviated by direct infusion of fresh water. This infusion comes from sporadic large winter storms and from an unknown amount of leakage from the basal aquifer. The estimated recharge by rainfall over the Puuloa Sector is 2 mgd (R-79, p. 42).

Leakage estimates for the range from 1-1.5 mgd/mile (CDM Report, 1993) to 5 mgd/mile as used in the Ewa Plain strip model (Bolke and Bauer, in prep.). Over the two mile boundary, the inflow estimates range from 3-10 mgd. The R-79 single-cell mixing model estimated 15 mgd inflow from Honouliuli into Puuloa, but of that amount natural leakage was estimated to be 4 mgd.

Eyre (1987, p. 12) estimated a net of 30 mgd leaking into the caprock (Kapolei area) from the Waianae basal lens during the plantation era (after removing plantation pumpage), and 33 mgd for pre-development (pre 1879) time (8 mgd of rainfall and 25 mgd natural ground-water flow from Schofield). The hydrologic budget was based on work by Giambelluca (1986) and employed by Eyre to solve a mixing-cell model that determined the effects of drip irrigation to water quality in the basal aquifer.

Changes to Sustainable Yield

The caprock aquifer is currently undergoing a period of change. It will take an unknown amount of time for a new equilibrium to set in. One and a half years have elapsed since the cessation of both sugar and the infusion of basal irrigation that resulted. Ground water (residual cane irrigation water +
storm recharge + natural leakage + minor irrigation return water) is slowly moving through the coral aquifer. Hydrologic properties of the aquifer will govern how long it takes to change to a new steady-state.

As stated above, estimated sustainable yield for the caprock was based on a net pumpage that supported a particular water quality. Net pumpage now does not include a large return irrigation component, but may include an increase in natural leakage due to reduction of 60+ mgd of plantation pumpage and attendant changes in the basal water level. Therefore, a new sustainable yield that would maintain irrigation quality water must be much less than previously assigned. For the Honouliuli-Puualoa area, estimates for natural leakage and rain recharge could be as high as 12 mgd or as low as 5 mgd. A good estimate for caprock recharge was lost when sugar cultivation ceased.

Golf course irrigation is different than drip irrigation for cane since it is less intensive and is concentrated over a small area. Giambelluca (1991, p. 43) estimates that recharge attributed to park irrigation is about 6 percent of recharge from drip-irrigated cane fields. Golf courses may be somewhat greater. For natural areas Giambelluca’s water balance puts recharge at 16 percent of drip irrigation.

The Commission granted a current allocated use of 19 mgd for the caprock aquifer. If everyone with a permitted use pumped their allocated amount, the aquifer would quickly salt up and become unusable for irrigation. Every user would have to cease or drastically reduce pumping and wait for natural leakage or for some kind of artificial recharge to improve water quality. From Figure 5, nonuse of EP Pump 27,28 after 1994 drastically reduced the chloride concentration at that source. Later, Figures 6-8 will show a movement of fresher water into the area surrounding EP Pumps 27,28.

Due to the profound changes in land and water use, the Commission should tread slowly until there is a better idea of the natural changes occurring within the aquifer. The new sustainable yield for the Puualoa area will be less than 10 mgd, perhaps close to 5 mgd. Constant monitoring of pumpages and chloride data will provide a refined estimate. As will be discussed below, we know that low capacity wells in Puualoa Sector have maintained relatively stable or improving water quality, whereas large capacity plantation wells appear to cause localized up-coning and increasing chlorides.

Analysis of Caprock Aquifer Since 1994

Anticipating the cessation of sugar and the accompanying widespread land and water use changes, the CWRM staff have regularly sampled OSCo and private wells since April 1994. Chloride samples and specific conductance measurements are collected from about 20 wells on a monthly to six week schedule,
and over a single day. Most of the wells are located in the Puuloa Sector, three wells are in the Kapolei Sector, and two wells are in the Malakole Sector. Since the program began, several wells were dropped and others added depending upon access or reliability of the measurement. The primary purpose of sampling is to provide baseline data that can measure changes to the caprock aquifer with time.

Figures 6, 7 and 8 are computer-drawn isochlor (lines representing equal chloride concentration) maps based on chloride data collected from wells in June 1994, September 1995, and February 1996. The isochlor lines only relate chloride data between the wells from which they were collected. In June 1994 sugar was still being cultivated in the vicinity of EP Pump 23. Figures 7 and 8 represents land and water use conditions as they are today. Recharge by rainfall and natural leakage will lower chloride concentrations and cause a shift of the isochlor lines. What is apparent when comparing Figures 6 with 7 and 8 is the worsening water quality around EP Pump 22, and freshening taking place west and southeast of Kapolei Golf Course. The EP Pump 22 situation may be a result of pumping and irrigation practices at Hawaii Prince Golf Course, whereas changes in water quality west of Kapolei Golf Course are probably natural.

Generally, the data collected since 1994 support an estimated sustainable yield that is less than 10 mgd for the Puuloa area (current pumpage averages 2-3 mgd). As will be shown later, individual wells equipped with small capacity pumps, show either a reduction or stabilization of chlorides, while EP Pump 22, fitted with a large capacity pump, shows a continuing rise in chlorides. Figures 6-8 provide a "animated" view of the changes now occurring.

In the Kapolei-BPNAS Sector, the majority of the pumpage is from the Kapolei Golf Course. Chlorides at the golf course are stable, and may be a result of basal ground-water leakage from the Waianae aquifer. The sustainable yield estimated by Mink (R-79, 1989) was less than 5 mgd. Present usage is about 1.1 mgd. A large portion of this aquifer is located under BPNAS where no pumpage occurs. Leakage from the Waianae basal aquifer is no longer 30 mgd estimated by Eyre (1987) but some lesser quantity. This amount would be natural ground-flux (estimated 33 mgd) minus total pumpage in Ewa-Kunia Aquifer System (present average about 9 mgd) or about 22 mgd.

R-79 estimated the Malakole area sustainable yield to be less than one mgd after sugar irrigation. Most of the usage is industrial. The upper aquifer supplies some water that is in excess of 1,000 mg/l. Pumpage from this sector is over 12 mgd. Some of the pumpage is from a lower coral aquifer in the caprock.

Honouliuli-Puuloa Area

Since the demise of OSCo the greatest aquifer changes will
occur in the Puuloa Sector. Present pumpage for the area averages 2.8 mgd. About 1.5 mgd of the present pumpage is east of Fort Weaver Road at the Hawaii Prince Golf Course and Ewa International Golf Club. Gentry Development Company irrigation wells and the Honouliuli Sewage Treatment Plant wells make up the remainder with small capacity wells.

Figures 9, 9a, 10, 10a, 11, and 11a focus on chloride as related to pumpage and land use changes since 1992 at Hawaii Prince Golf Course. Six wells supply the course with water. HPGC wells 1, 2, and EP Pump 22 (wells 1901-03, 1900-17, and 1900-02 respectively) are located about 500 feet, 1,000 feet, and 2,000 east of Fort Weaver Road respectively. Water quality at HPGC wells 1 and 2 appears to be improving over time, whereas at EP Pump 22 the opposite is occurring. EP Pump 22 pumps about four times the amount of water produced from each of the other wells. Though not shown, water quality at the HPGC wells near EP Pump 22 are affected by the high pumpage, suggesting possible upconing. Evaporation from the large reservoir ponds prior to irrigation will increase the chlorides of the applied water. Pan evaporation in Ewa is about 85 inches/year (R-79, p. 43). Salt can build up in the soil, only to be flushed back into the aquifer after a storm. The wells closer to Fort Weaver Road may also be affected more by storm recharge because of improving quality.

Currently, there is a request to increase the usage at EP Pump 22. From the data presented in Figures 11 and 11a, an increase in pumpage is not warranted since chlorides are already in excess of what the grass can tolerate and exceeds the 1000 mg/l associated with sustainable yield. Greater pumpage at this well could adversely affect their other sources by increasing the chloride mixture of the irrigation water applied to the west end of the course, as well as exacerbate the localized up-coning on the east side. Ewa International Golf Club, located south and down gradient of Hawaii Prince, could also be detrimentally affected.

Figures 12, 12a, 13, 13a, 14, and 14a illustrate chloride and pumping trends at three Gentry sources. Palm Villa 1 (2001-06), and Palm Court (2002-12) show a steady chloride decline since 1994. Palm Villa 2 (2001-08) averaged about 800 mg/l since 1994, but had declined from 1,200 mg/l from a sample collected in 1993.

Gentry Development is proposing two new wells and water use permits in Puuloa. Because of the small pump capacities proposed for these wells, the likelihood that they would detrimentally affect the aquifer or neighboring wells is simply unknown. What will occur will be a reduction of ground-water flux equal to amount of pumpage.

Figures 15 and 15a show an unusual phenomena at the Honouliuli Sewage Treatment Plant (STP). Wells 1902-03 and 04
are about 20 feet apart, both drilled to a bottom elevation of -15 feet msl. Chloride concentrations are typically 50-200 mg/l apart, with water quality ranging between 500 and 700 mg/l chloride. General trend shows that chlorides have increased in Well 1902-03 but have remained stable in Well 1902-04. The difference in water quality must be due to some geologic control, such as a crack or solution cavity within the coral aquifer.

As stated above, water levels within the caprock are do not enter into estimating sustainable yield. Water levels can fluctuate as much as 0.5 feet during the day due to the tidal signal. During 1957-58 water levels were collected in EP Pumps 21-24. Figure 16 shows that instantaneous water levels varied during the two years of measurement. Water levels dropped to a low of 1.3 in January 1958. The strike began in February 1958 and lasted two months. Even though irrigation ceased, water levels were increasing when the first measurements were done after the strike. Report R-88 indicates that years these years had average to slightly above average rainfall. Static water levels in January 1957 were about 2.5 feet msl. The highest water level during the entire time appears to be near EP Pump 22 and could indicate mounding of irrigation water at that site, since wells west and north appear to be "down-gradient".

Figure 17 plots 1995 water level data collected by Tom Nance at EP Pump 24 with daily rainfall at Ewa Mill and Honolulu Observatory at Ewa Beach. There does not seem to any correlation between storm events and rising water levels. In fact, several high water level periods are during the driest part of the year. When Nance (personal communication, 1996) compared EP Pump 24 water levels with ocean tidal data he found a very close correlation. Tides could account for large water level changes observed in Figure 16. Storm events seem to have a greater impact on water quality than water levels.

Unknown factors make it difficult to compare water levels presented in Figure 16 to Figure 17. What is known, however, irrigation water was applied to fields by the furrow method in the 1950's, with water levels changing by a foot over a year. EP Pump 24 water levels collected by Nance represent a time of localized and limited irrigation and average about 1.7± feet msl.

**Kapolei-BPNAS Sector**

Present water use in this sector averages about 1.1 mgd. Most of the pumpage occurs at the Kapolei (HFDC) Golf Course. Of the six wells drilled, five are pumping. Water quality has stayed relatively constant. Figures 18 and 18a present pumpage and chloride data for Well B (2003-02). Average chloride is 450 mg/l. Increased leakage from the basal aquifer is thought to be the reason for the constancy of the chloride data.

Other wells in the sector include the Kapolei Campbell wells 1905-08 and 1905-10. The primary source, 1905-08, pumps about
0.150 mgd with chlorides averaging 500 mg/l. The Desalt Plant wells are presently off line. Its caprock source, Well 1905-09, averaged about 700 mg/l. The Desalt Plant wells can almost be placed in the Malakole Sector.

Water quality underlying Barbers Point Naval Air Station is unknown. Pumpage from the mauka Kapolei Golf Course wells and the Kapolei Campbell wells will affect ground water quality and its availability when BPNAS is turned over to the State.

Malakole Sector

Pumpage from the Malakole Sector is presently about 12.6 mgd. The estimated sustainable yield for 1,000 mg/l water is less than 1 mgd. Of the total quantity pumped, 2.6 mgd from is brackish water developed by Kalaeloa Partners (wells 1805-03-09). Specific conductivity of the water developed by them average about 10,000 umhos which is equivalent to a chloride concentration of over 3,000 mg/l. The additional 9.6 mgd is essentially highly brackish and saline used for wash down, cooling and other industrial purposes.

CWRM personnel sample the Hawaii Raceway Park well (1905-01). This well is used infrequently for dust control. Chlorides ranged between 1,100 mg/l in June 1993 to 580 mg/l in October 1995. Most of the samples collected hover around 870 mg/l.

If the Commission wants to preserve the 1,000 mg/l water for other than industrial purposes, then the Malakole Sector should be divided. Total pumpage for new wells mauka of Hawaii Raceway Park could be managed at less than 1 mgd, whereas industrial wells in Campbell Industrial Park can be allowed to continue at present rates.

Refinement of Data and Future Projects

Water quality and pumpage data collected by CWRM personnel and by water users will be continually updated by graphs and isochlor maps. More sampling points need to be added to the CWRM network. Three or four test holes should be drilled within or near BPNAS. Though water level do not appear to be related to water quality, a network of small diameter water level wells should be drilled throughout the Ewa Plain.

Bolke and Bauer (in prep.) began a ground water model using SUTRA. The model was calibrated to a period (late 1980’s) that was not in equilibrium. Additional work should be done to calibrate the model to the two stable periods outlined above. Additional modelling work combined with caprock monitor wells need to address the changes in natural leakage that are now occurring from both the Waianae and Koolau aquifer.

Conclusions and Recommendations
Several major conclusions can be drawn from the above discussion:

1. Sustainable yield for the caprock aquifer assumes that total pumpage within a sector will maintain a chloride concentration of 1,000± mg/l.

2. The caprock aquifer, especially the Honouliuli-Puuloa area, has not reached an equilibrium since cessation of cane irrigation in 1994. To achieve and maintain a good irrigation quality water will require a change in the sustainable yield to a value less than 10 mgd, and less than 5 mgd in the Kapolei-BPNAS area. The historical record of the caprock aquifer argues for a reduction of permitted uses, unless there is a drastic change to the inflow of ground water.

3. In light of 2. above, the Commission should adopt a "go slow" approach to new wells in the Puuloa region. Small irrigation wells appear not to presently cause problems; however, cumulative effects could occur. At the present time we do not have enough data regarding the natural post-OSCo changes that are occurring within the limestone aquifer. The isochlor maps do show a continuing change throughout the Ewa Plain.

4. The Malakole area is pumping much higher than the sustainable yield of less than 1 mgd estimated in R-79. This sector should be divided into two. Sustainable yield for Campbell Industrial Park is meaningless when water for industrial purposes is used. However, there should be some limit, because heavy pumpage could affect ground water underlying BPNAS. Mauka of Campbell Industrial Park, pumpage should be limited to less than 1 mgd.

5. Future modelling efforts should use calibration "targets" of equilibrium periods of 1930-1940 and from 1952-1965.

6. Separation of the Ewa caprock aquifer into three broad management areas has merit. These broad regions can be subdivided into smaller areas that require special management. Perhaps the concept of "sustainable capacity", the amount of water developed from a well or a battery of wells (such as Hawaii Prince Golf Course) that will allow stabilization of chlorides, should be more fully developed and used by the Commission for special management of smaller areas.
REFERENCES

Board of Water Supply, unpublished data files.


Most Saline EP Basal Sources
Chlorides and Pumpage

Figure 1

Ewa Plantation Pumps 1 and 9 supplied the most saline water. They were located near Ewa Mill.
Marginal EP Basal Sources
Chlorides and Pumpage

Ewa Plantation Pumps 3, 4, 5, & 6 supplied marginal quality water.

Combined Pumps 3, 4, 5, & 6 pumpage (mgd)

Year

Chloride Concentration (mg/l)

Average Yearly Pumpage (mgd)

FIGURE 2 Ewa Pump 3 Ewa Pump 4 Ewa Pump 5 Ewa Pump 6
Marginal to Potable EP Basal Sources
Chlorides and Pumpage

FIGURE 3
Ewa Plantation Pumps
2, 7, 8, 15 & 16 supplied
marginal quality to
potable irrigation water.
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Total imported basal water from Koolau ranged < 50-70 mgd

Ref: CWRM, BWS files, R-79, & Stearns (1935, 1940)

Isochor Map of Ewa Caprock Aquifer
June 1994
Isochlor Map of Ewa Caprock Aquifer
September 1995

FIGURE 7
Isochlor Map of Ewa Caprock Aquifer
February 1996

FIGURE 8
Chloride and Pumpage of HPGC Well 1
Ewa Caprock, Oahu

FIGURE 9

HPGC 1 (Qave = .148 mgd)
Chloride and Pumpage of HPGC Well 1
Ewa Caprock, Oahu

Total caprock average monthly pumpage (mgd)
Basal (low Cl) irrigation

OSCo caprock pumpage ceased
Total Hawaiian Prince pumpage
Well 1 pumpage

FIGURE 9a
• HPGC 1 (Qave = .148 mgd)
Chloride and Pumpage of HPGC Well 2
Ewa Caprock, Oahu

FIGURE 10

HPGC 2 (Qave=0.160 mgd)
Chloride and Pumpage of HPGC Well 2
Ewa Caprock, Oahu

Total caprock average monthly pumpage (mgd)
Basal (low Cl) irrigation

OSCo caprock pumpage ceased

Total Hawaii Prince pumpage
Well 2 pumpage

FIGURE 10a

HPGC 2 (Qave=0.160 mgd)
Chloride and Pumpage of HPGC Well EP22
Ewa Caprock, Oahu

FIGURE 11
EP-22 (Qave=1.021 mgd)
Chloride and Pumpage of HPGC Well EP22
Ewa Caprock, Oahu

FIGURE 11a
- EP-22 (Qave=1.021 mgd)
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

FIGURE 12

* Gentry Palm Villa 1 (Qave=0.019 mgd)

Ref: CWRM, BWS files, & R-79
Chloride and Pumpage of Ewa Gentry Wells, Ewa Caprock, Oahu

**FIGURE 12a**

- Gentry Palm Villa 1 (Qave=0.019 mgd)

- Total caprock average monthly pumpage (mgd)
- Stop
- Basal (low Cl) irrigation
- OSCo caprock pumpage ceased
- Total Ewa Gentry pumpage
- Palm Villa 1 pumpage

Ref: CWRM, BWS Int. & R-79
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

FIGURE 13

* Gentry Palm Court (Qave= 0.025 mgd)
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

FIGURE 13a

Gentry Palm Court (Qave= .025 mgd)
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

FIGURE 14
- Gentry Palm Villa 2 (Qave=0.031 mgd)
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

Total caprock average monthly pumpage (mgd)
Basal (low Cl) irrigation
OSCo caprock pumpage ceased

Total Ewa Gentry pumpage
Palm Villa 2 pumpage

Gentry Palm Villa 2 (Qave=0.031 mgd)

FIGURE 14a
Chloride and Pumpage of Honouliuli STP Wells, Ewa Caprock, Oahu

FIGURE 15

- Honouliuli STP 1902-03  - Honouliuli STP 1902-04 (Qave=0.654 mgd)
Chloride and Pumpage of Honouliuli STP Wells, Ewa Caprock, Oahu

Total caprock average monthly pumpage (mgd)

Basal (low Cl) irrigation

OSCo caprock pumpage ceased

Total Honouliuli STP pumpage

Honouliuli STP 1902-03

Honouliuli STP 1902-04 (Qave=0.654 mgd)

FIGURE 15a

Ref: CWRM, BWS files, & R 78
Monthly Water Level Measurements
Ewa Plantation Caprock Wells

FIGURE 16

Water Level @ EP-24 & Daily Rainfall
Ewa Caprock, Ewa, Oahu

FIGURE 17

Ref: Tom Nance, water level data
Chloride and Pumpage of HFDC Golf Course Well B, Ewa Caprock, Oahu

FIGURE 18

* HFDC B (Qave=0.270 mgd)

Basic (low Cl) irrigation

OSCo caprock pumpage ceased

HFDC Well B pumpage

Total HFDC-Kapolei Golf Course pumpage

Total caprock average monthly pumpage (mgd)

Ref: CWRM, BWS Res. & R-79
Chloride and Pumpage of HFDC Golf Course Well B, Ewa Caprock, Oahu

FIGURE 18a

HFDC B (Qave=0.270 mgd)

Ref. CWRM, BWS files, & R-79
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<tr>
<th>WUP NO</th>
<th>APPLICANT</th>
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18 Permits Totaling 17.170

Aquifer System: PUULOA

EXHIBIT 8
### Central Oahu Projected Increase in Population

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<td>130,526</td>
<td>213,802</td>
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**Current Trend**: 130,526 to 177,738

### Central Oahu Projected Increase in Housing Units

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**Current Trend**: 36,262 to 55,726

### Central Oahu Projected Increase in Civilian Non-Construction Jobs

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**Current Trend**: 23,029 to 54,751

---

**NOTE**: Baseline forecast for 1990-2020 Islandwide increase is 28%.

### Change in Resident Population

Central Oahu Development Plan Sub-Areas (1990-2020)

---

### Change in Non-Construction Jobs

Central Oahu Development Plan Sub-Areas (1990-2020)
### KAPOLEI AQUIFER SYSTEM

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### PUULOA AQUIFER SYSTEM

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* Proposed marina project will result in a permanent reduction in caprock storage capacity.

**EXHIBIT 5**
STAFF SUBMITTAL
for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT
July 5, 1995
Honokaa, Hawaii

EXTENSION -- Interim Water Use Permits
Ewa Caprock Ground Water Management Area, Oahu

Applicant:                           Landowner:

(Well Nos. 1905-08,10)              Same
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-01,02,04,05,07)    Same
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 1900-02,17 to 20 & 1901-03)   Same
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10 & 2003-06)   Same
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

(Well No. 2001-07)                   Same
The Arbors Association
91-920 La'aulu St., #1G
Ewa Beach, HI 96706
Staff Submittal

(Well No. 2001-08)
Palm Villas II Association
91-1119 Mikohu St., #D
Ewa Beach, HI 96706

(Well No. 2002-12)
Palm Court Association
91-1019 Puaniu St., #25R
Ewa Beach, HI 96706

(Well No. 1902-01)
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

Background:

At the July 13, 1994 and January 25, 1995 meetings of the Commission on Water Resource Management (Commission), interim water use permits for durations of one year or less were approved for the above groundwater sources for various nonpotable uses at new developments in Ewa, Oahu. These permits are due to expire on July 12, 1995.

Expiration dates are being specified for water use permits in the Ewa Caprock because there are uncertainties regarding the present sustainable yield of the Ewa Caprock Aquifer and the impacts of land use changes on future water availability.

Requests for new water use permits to continue current groundwater uses after the July 12, 1995 expiration date have been received from each of the applicants.

RECOMMENDATION:

Staff recommends that the Commission extend the duration of the present water use permits until such time that a decision is made at a meeting on Oahu.

Respectfully submitted,

RAE M. LOUI
Deputy Director

APPROVED FOR SUBMITTAL:

MICHAEL D. WILSON, Chairperson

July 5, 1995
Unanimously approved. (Nobriga/Giral)

ITEM 6   PARKER RANCH, APPLICATION FOR A STREAM CHANNEL ALTERATION PERMIT, CONSTRUCTION OF A WATERLINE CROSSING, WAIKOLOA AND WAIKOLOA IKI STREAMS, KAMUELA, HAWAII (TMK 6-5-01:01 AND 21)

STAFF PRESENTATION: David Higa

Unanimously approved. (Nobriga/Cox)

ITEM 8   EXTENSION - INTERIM WATER USE PERMITS, EWA CAPROCK GROUND WATER MANAGEMENT AREA, OAHU

STAFF PRESENTATION: Roy Hardy

Unanimously approved. (Nobriga/Cox)

ITEM 9   STATUS REPORT ON AFTER-THE-FACT STREAM CHANNEL ALTERATION AND STREAM DIVERSION WORKS PERMITS AND PETITION TO AMEND THE INTERIM INSTREAM FLOW STANDARD, HIILawe AND LALAKEA STREAMS, HONOKAA, HAWAII (TMK 4-8-03:06)

STAFF PRESENTATION: David Higa

The following persons gave oral and written testimonies:

Mr. Peter Simmons, Bishop Estate
Mr. Paul Matsuo, Dept. of Agriculture
Mr. Patrick Gardner, Legal Aid Society of Hawaii
Mr. Lawrence Miller
Mr. Jeffrey Quin
Mr. Robert Shioji
Mr. Ben Mahilum
Mr. Kakalau

Ms. Catherine Allen
Ms. Clara Lakakalia
Mr. Abraham Kamakawiuoole
Mr. Christopher Rathburn
Ms. Brenda Machado Lee
Mr. Jim Cain
Mr. Burt Kauhi
Mr. Karl Foytik
Mr. Kia Fronda

Chairperson Wilson stated that the purpose of this item was to get input from the community. A decision will be made at a later date.
July 5, 1995

Honorable Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Water Use Permit (WUP) Applications
Ewa Caprock Groundwater Management Area, Oahu

Attached for your information are comments by the Board of Water Supply on the notice of applications for water use permits for the Ewa Caprock Groundwater Management Area. Comments by the Planning Department were forwarded earlier in a letter dated June 22, 1995, a copy which is attached.

Should you have any questions, please call Randolph Hara at 523-4483.

Sincerely,

CHERYL D. SOON
Chief Planning Officer

CDS:lh

Attachments

cc: Honorable Jeremy Harris, Mayor
(Mayor’s Control No. 23037)
June 29, 1995

TO: CHERYL D. SOON, CHIEF PLANNING OFFICER
    PLANNING DEPARTMENT
FROM: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
    BOARD OF WATER SUPPLY
SUBJECT: STATE WATER COMMISSION'S LETTER DATED MAY 30, 1995 TO
    MAYOR JEREMY HARRIS ON THE NOTICE OF APPLICATIONS FOR
    WATER USE PERMITS, EWA CAPROCK GROUNDWATER MANAGEMENT
    AREA, OAHU

We have no objections to the applications for permits for groundwater from the Ewa Caprock Aquifer.

If you have any questions, please contact Herbert H. Minakami at 527-6183.
June 22, 1995

Honorable Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Water Use Permit (WUP) Applications
Ewa Caprock Groundwater
Management Area, Oahu

This is in response to your memorandum dated May 30, 1995. We have reviewed the subject applications for non-potable water in the Ewa Caprock Aquifer for irrigation uses and provide the comments below for your consideration.

- Ewa by Gentry - 265,700 gpd; Hawaii Prince Golf Club - 500,000 gpd; Arbors - 63,000 gpd; Palm Villas II - 48,000 gpd; Palm Court - 66,000 gpd; Estate of James Campbell (Kapolei) - 302,000 gpd

The projects are shown on the Ewa Development Plan Land Use Map (DPLUM). Therefore, we have no objections to these temporary water use permit requests.

- Kapolei Golf Course and Villages of Kapolei - 1,494,000 gpd

The area identified within the HFDC request is designated Agriculture on the Ewa DPLUM. Although the proposed and existing uses are not consistent with this designation, the projects does have Act 15 exemption from County planning and zoning regulations. Therefore, we have no objections to HFDC request.
Ewa Marina - 1.5 mgd

The Ewa Marina (Haseko (Ewa), Inc.) development is shown on the Ewa DPLUM. However, the allocation of water for the Ewa Marina project may be premature at this time. Use of the water will not be needed until several approvals are granted. The Haseko Corporation is in ongoing discussion regarding drainage and the permits for the marina construction are part of a Commission on Water Resource Management contested case hearing.

Construction of the project including subdivision, grading and building permits will be delayed until these issues are resolved. We are unable to provide an estimate of when the project would be ready for an allocation. Please be clear that this comment regarding timing in no way is in opposition to development of Ewa Marina. The project should not be penalized from future allocations of water to implement the Ewa Development Plan.

Please be advised that the City is preparing a policy regarding reuse of Honouliuli Sewage Treatment Plant effluent within the Ewa plains area. When this effluent is available for public use, we recommend that the Commission require non-potable water users to use the treated effluent to meet their non-potable water needs.

Should you have any questions, please call Eugene Takahashi at 527-6022.

Sincerely,

CHERYL D. SOON
Chief Planning Officer

CDS:js

cc: The Honorable Jeremy Harris, Mayor
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Millilani St., Ste. 810  
Honolulu, HI 96813  

Dear Mr. Lee:

Transfer of Water Use Permit for Well No. 1902-01  
Ewa Caprock Groundwater Management Area, Oahu

We have received your letter of May 12, 1995, regarding the transfer of the water use permit for Well No. 1902-01 from Oahu Sugar Co., Ltd. to Haseko (Ewa), Inc. (Haseko), effective April 1, 1995.

As Haseko has previously applied for and received a water use permit for 1.5 million gallons per day (mgd) for this source, the remaining allocation to be transferred is 2.66 mgd.

Please be advised that any change in the conditions of the use described in the permit invalidates the transfer and constitutes a ground for revocation of the permit. The present permitted use is for agriculture. Other irrigation uses, including golf course irrigation, may not be permitted under the terms of the present permit.

Enclosed please find our official water use report form. Please use this form to report your monthly total water usage. Monthly water use reporting is a condition of the water use permit and is required under Administrative Rule 13-168-7.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI  
Deputy Director

LN:ss  
Encl.
June 22, 1995

Honorable Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Water Use Permit (WUP) Applications
Ewa Caprock Groundwater Management Area, Oahu

This is in response to your memorandum dated May 30, 1995. We have reviewed the subject applications for non-potable water in the Ewa Caprock Aquifer for irrigation uses and provide the comments below for your consideration.

- Ewa by Gentry - 265,700 gpd; Hawaii Prince Golf Club - 500,000 gpd;
  Arbors - 63,000 gpd; Palm Villas II - 48,000 gpd; Palm Court - 66,000 gpd;
  Estate of James Campbell (Kapolei) - 302,000 gpd

The projects are shown on the Ewa Development Plan Land Use Map (DPLUM). Therefore, we have no objections to these temporary water use permit requests.

- Kapolei Golf Course and Villages of Kapolei - 1,494,000 gpd

The area identified within the HFDC request is designated Agriculture on the Ewa DPLUM. Although the proposed and existing uses are not consistent with this designation, the projects does have Act 15 exemption from County planning and zoning regulations. Therefore, we have no objections to HFDC request.
Ewa Marina - 1.5 mgd

The Ewa Marina (Haseko (Ewa), Inc.) development is shown on the Ewa DPLUM. However, the allocation of water for the Ewa Marina project may be premature at this time. Use of the water will not be needed until several approvals are granted. The Haseko Corporation is in ongoing discussion regarding drainage and the permits for the marina construction are part of a Commission on Water Resource Management contested case hearing.

Construction of the project including subdivision, grading and building permits will be delayed until these issues are resolved. We are unable to provide an estimate of when the project would be ready for an allocation. Please be clear that this comment regarding timing in no way is in opposition to development of Ewa Marina. The project should not be penalized from future allocations of water to implement the Ewa Development Plan.

Please be advised that the City is preparing a policy regarding reuse of Honouliuli Sewage Treatment Plant effluent within the Ewa plains area. When this effluent is available for public use, we recommend that the Commission require non-potable water users to use the treated effluent to meet their non-potable water needs.

Should you have any questions, please call Eugene Takahashi at 527-6022.

Sincerely,

CHERYL D. SOON
Chief Planning Officer

CDS:js

cc: The Honorable Jeremy Harris, Mayor
June 20, 1995

MEMORANDUM

LOG NO: 14755
DOC NO: 9506EJ29

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Application for Water Use Permit, Ewa Caprock Ground Water Management Area, O‘ahu for Well Nos. 1900-02, 17-20; 1901-03; 1902-01; 1905-08,10; 2001-03-05,07-10; 2002-12; 2003-01-07
Honouliuli, ‘Ewa, Oahu
TMK: 9-1-10:6-7,17; 9-1-12:5-7; 9-1-16:01,25,35;
9-1-70:132

Thank you for the opportunity to review this project. The applicants propose to use water from existing sources. Since an approved permit will not authorize any ground disturbing activities we believe that there will be "no effect" on historic sites.

EJ:jk
Mr. Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject: Your Letter of May 30, 1995 on the Ewa Caprock Groundwater Use Permit Applications

Thank you for the opportunity to comment on these applications for permits for groundwater from the Ewa Caprock Aquifer. We have no objections to the permits and return the cover memo marked accordingly.

If you have any questions, please contact Herbert H. Minakami at 527-6183.

Very truly yours,

Raymond H. Sato
Manager and Chief Engineer

Attachment
To: The Honorable Michael Wilson, Chairperson
Commission on Water Resource Management

From: Dr. Bruce Anderson
Deputy Director, Environmental Health

Subject: Water Use Permit Applications

Ewa Caprock Groundwater Management
Aiea, Oahu
TMK: 9-1-12: 05

Thank you for allowing us to review and comment on the subject applications contained in your memorandum dated May 30, 1995.

We have no objections to the use of the Ewa Caprock groundwater for irrigation purposes in the Ewa Management Area. However, there are plans to provide treated wastewater effluent for non-potable purposes in the immediate area of the Ewa Caprock Aquifer. The Department of Health recommends that Water Use Permit from this aquifer be granted only if no other alternative source is available, and only until the effluent is available to the applicant. Once the effluent becomes available, we recommend that the applicant be given a reasonable time to connect to the effluent water system, then the Water Use Permit, should be withdrawn. Provisions to include the proper infrastructure to implement these conditions should be required as part of any new construction plans.

All reuse plans must conform to applicable provisions of the Department of Health's "Guidelines for the Treatment and Use of Reclaimed Water." We reserve the right to review the detailed plans for conformance to these guidelines and to the Hawaii Administrative Rules, Chapter 11-62.

Should you have any questions, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4294.

c: WWB
June 2, 1995

Mr. Michael D. Wilson
Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject: Applications for Water Use Permits - Ewa Caprock Groundwater Management Area, Oahu (Public Notice)

We have reviewed the subject document received with your memorandum dated May 30, 1995, and have the following comments to offer:

1. The following TMKs are located within the State Land Use Urban District:

9-1-10: 17
9-1-12: 5, 6, 7
9-1-16: 1, 35
9-1-70: 132

2. TMKs 9-1-10: 6 and 7 are located within the State Land Use Agricultural District.

3. According to current TMK records, TMK 9-1-61: 9 has been transferred to TMK 9-1-69: 4, which is located within the State Land Use Agricultural District.

4. TMK 9-1-16: 25 is located within the State Land Use Urban and Agricultural Districts. We would like to note that LUC Docket No. A94-708/Office of State Planning, State of Hawaii, which proposes the reclassification of portions of this parcel from the State Land Use Agricultural District to the Urban District, is tentatively scheduled for action on July 27 & 28, 1995.
5. The following areas are predominantly located within the State Land Use Urban District, however, portions of these areas may also be located within the State Land Use Agricultural District:

A) City of Kapolei  
B) Kapolei Business Park  
C) Kapolei Regional Park  
D) Kapolei Golf Course  
E) Villages of Kapolei

We have no other comments to offer at this time.

We have enclosed your cover memorandum as requested.

Should you have any questions, please feel free to call me or Kathy Yonamine at 587-3822.

Sincerely,

ESTHER UEDA  
Executive Officer

EU:KY:th  
enc.
TO: Mr. Kali Watson, Chairperson  
              Department of Hawaiian Home Lands  
Dr. Lawrence Miike, Director  
              Department of Health  
Mr. Clayton H. W. Hee, Chairperson  
              Office of Hawaiian Affairs  
Ms. Esther Ueda, Executive Officer  
              Land Use Commission  
Mr. Raymond Sato, Manager & Chief Engineer  
              Honolulu Board of Water Supply  
Mr. Patrick Onishi, Director  
              Department of Land Utilization  
Mrs. Cheryl D. Soon, Chief Planning Officer  
              Planning Department

FROM: Michael D. Wilson, Chairperson  
              Commission on Water Resource Management

SUBJECT: Water Use Permit Applications  
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:
() We have no comments  
() We have no objections  
() Comments attached  
() Additional information requested  
() Extended review period requested

Contact person: Kathy Yonamine  
Phone: 587-3822

Signed:  
Date: 6/05/95
May 31, 1995

Mr. Michael Wilson, Chairperson,
and Members of the Commission on
Water Resource Management
State of Hawaii
1151 Punchbowl Street, Room 227
Honolulu, HI 96813

RE: Ewa Marina Golf Course Water Conservation Plan

Dear Mr. Wilson and Commissioners:

HASEKO (Ewa), Inc. (HASEKO) submits the enclosed Ewa Marina Golf Course Water Conservation Plan. The Plan is required by the conditions attached to the temporary water use permit allocating 1.5 mgd of water from the Ewa caprock aquifer for golf course and landscaping irrigation for the Ewa Marina Community project. Although the allocation was approved by the Commission on Water Resource Management (Commission) in July, 1992, the Ewa Marina golf course lands were continued in sugar cane cultivation by Oahu Sugar Company until March 31, 1995.

The temporary permit expires on July 13, 1995, and HASEKO has submitted a request to continue the water use permit for the same amount of water. We ask that the Commission consider the enclosed Water Conservation Plan in making a decision on our request to extend usage.

Meanwhile, should you have any questions on the enclosed Water Conservation Plan, please do not hesitate to call me.

Very truly yours,

Alan Suwa
Project Manager

Enclosure
PUBLIC NOTICE

Applications for Water Use Permits
Ewa Caprock Groundwater Management Area, Oahu

The following applications for new interim water use permits for the Ewa Caprock Aquifer have been received and are hereby made public in accordance with Department of Land and Natural Resources Administrative Rules 13-171, "Designation and Regulation of Water Management Areas." Each of the applicants below have been awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995.

Haseko Well No. 1 (Well No. 1902-01)
Applicant: Haseko (Ewa), Inc.
820 Millilani St., Ste. 810
Honolulu, HI 96813
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Haseko Well No. 1 (Well No. 1902-01) at Oahu Sugar Co. Field 088, Ewa, Oahu, Tax Map Key 9-1-12:5
Quantity Requested: 1,500,000 gallons per day.
Water Use: Golf course, roadway, and maintenance irrigation
Place of Water Use: Ewa Marina development, Ewa, Oahu, TMKs 9-1-12:5,6,7

Geiger Park (2001-03)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Geiger Park (Well No. 2001-03), located near intersection of Geiger and Ft. Weaver Rds., Ewa, Oahu, TMK 9-1-16:35
Quantity Requested: 30,000 gallons per day.
Water Use: Irrigation for 10-acre park
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMK 9-1-16:35

Sunrise Apts. (2001-04)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Sunrise Apts. (Well No. 2001-04), Ewa by Gentry construction site, Ewa, Oahu, TMK 9-1-61:8
Quantity Requested: 40,000 gallons per day.
Water Use: Landscape irrigation
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-61:7,41-50
Soda Creek III (2001-05)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Soda Creek III (Well No. 2001-05), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-70:132
Quantity Requested: 20,000 gallons per day.
Water Use: Landscape and roadway irrigation
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-70:132

Ft. Weaver Apts. (2001-09)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Ft. Weaver Apts. (Well No. 2001-09), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-61:2
Quantity Requested: 23,400 gallons per day.
Water Use: Landscape and roadway irrigation
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-61:2,9

Gentry Golf Course (2003-06)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Gentry Golf Course (Well No. 2003-06), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-61:2
Quantity Requested: 130,200 gallons per day.
Water Use: Landscape irrigation
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-61:Lots 2 & 54

Gentry Area 24 (2001-10)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Gentry Area 24 (Well No. 2001-10), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-10:17
Quantity Requested: 22,100 gallons per day.
Water Use: Landscape and roadway irrigation
Place of Water Use: Ewa by Gentry development, TMKs 9-1-10:17
EP 22 & Wells 1 to 5 (1900-02, 17 to 20 & 1901-03)

**Applicant:** Hawaii Prince Golf Club  
91-1200 Ft. Weaver Rd.  
Ewa Beach, HI 96706

**Date Completed Application Received:** May 22, 1995

**Aquifer:** Ewa Caprock Aquifer System, Oahu  
**Water Source:** EP 22 & Wells 1 to 5 (1900-02, 17 to 20 & 1901-03), Hawaii Prince Golf Club, Ewa, Oahu, TMKs 9-1-10:6,7  
**Quantity Requested:** 500,000 gallons per day.  
**Water Use:** Golf course irrigation  
**Place of Water Use:** Hawaii Prince Club, Ewa, Oahu, TMK 9-1-10:6

Arbors (2001-07)

**Applicant:** The Arbors Homeowners Association  
91-920 La‘aulu St., #1G  
Ewa Beach, HI 96706

**Date Completed Application Received:** May 22, 1995

**Aquifer:** Ewa Caprock Aquifer System, Oahu  
**Water Source:** Arbors (2001-07), The Arbors, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:32  
**Quantity Requested:** 63,000 gallons per day.  
**Water Use:** Landscape irrigation  
**Place of Water Use:** The Arbors, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:28,32,36-39

Palm Villa II (2001-08)

**Applicant:** Palm Villas II Association  
91-1119 Mikohu St., #D  
Ewa Beach, HI 96706

**Date Completed Application Received:** May 10, 1995

**Aquifer:** Ewa Caprock Aquifer System, Oahu  
**Water Source:** Palm Villa II (2001-08), Palm Villas II, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:27  
**Quantity Requested:** 48,000 gallons per day.  
**Water Use:** Landscape irrigation  
**Place of Water Use:** Palm Villas II, Ewa by Gentry, Ewa, Oahu, TMKs 9-1-61:13-15,25-27,34

Palm Court (2002-12)

**Applicant:** Palm Court Homeowners Association  
91-1019 Puaniu St., #25R  
Ewa Beach, HI 96706

**Date Completed Application Received:** May 22, 1995

**Aquifer:** Ewa Caprock Aquifer System, Oahu  
**Water Source:** Palm Court (2002-12), Palm Court, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:22  
**Quantity Requested:** 66,000 gallons per day.  
**Water Use:** Landscape irrigation  
**Place of Water Use:** Palm Court, Ewa by Gentry, Ewa, Oahu, TMKs 9-1-61:17-23
Kapolei Irr (1905-08 & 10)

**Applicant:** The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

**Date Completed Application Received:** May 22, 1995

**Aquifer:** Ewa Caprock Aquifer System, Oahu

**Water Source:** Kapolei Irr (1905-08 & 10), Kapolei City development, TMK 9-1-16:01

**Quantity Requested:** 302,000 gallons per day.

**Water Use:** Nonpotable urban uses

**Place of Water Use:** City of Kapolei, Kapolei Business Park, Kapolei Regional Park, Oahu

Kapolei Irr A,B,C-1,D,E (2003-01,02,04,05,07)

**Applicant:** State of Hawaii
Housing Finance and Development Corp. Blvd.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

**Date Completed Application Received:** May 23, 1995

**Aquifer:** Ewa Caprock Aquifer System, Oahu

**Water Source:** Kapolei Irr A,B,C-1,D,E (2003-01,02,04,05,2003-07), Kapolei Golf Course, TMK 9-1-16:25

**Quantity Requested:** 1,494,000 gallons per day.

**Water Use:** Golf course and urban irrigation

**Place of Water Use:** Kapolei Golf Course and Villages of Kapolei, Oahu

Written objections or comments on the above applications may be filed by any person who has property interest in any land within the Ewa Caprock Groundwater Management Area, any person who will be directly and immediately affected by the proposed water use(s), or any other interested person. Written objections shall: (1) state property or other interest in the matter (provide TMK information); (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; and (3) state all grounds for objections to the proposed permit. Written objections must be received by **June 22, 1995**. Objections must be sent to 1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809 and 2) the applicant(s) at the above address(es).

**COMMISSION ON WATER RESOURCE MANAGEMENT**

**EDWIN T. SAKODA**

**MICHAEL D. WILSON**
Chairperson

**Dated:** 6/30/95

**Publish in:** Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995
TO: 
Mr. Kali Watson, Chairperson
Department of Hawaiian Home Lands

Dr. Lawrence Muhe, Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Ms. Esther Ueda, Executive Officer
Land Use Commission

Mr. Raymond Sato, Manager & Chief Engineer
Honolulu Board of Water Supply

Mr. Patrick Onishi, Director
Department of Land Utilization

Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the program, plans, and objectives specific to your organization or department only. Please return this cover sheet form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

{ We have no comments
{ We have no objections
{ Comments attached
{ Additional information requested
{ Extended review period requested

Contact person: June Harrigan
Phone: 586-4337

Signed: Art Banckham
Date: 6/14/95
To: The Honorable Michael Wilson, Chairperson
Commission on Water Resource Management

From: Dr. Bruce Anderson
Deputy Director, Environmental Health

Subject: Water Use Permit Applications

Ewa Caprock Groundwater Management
Aiea, Oahu
TMK: 9-1-12: 05

Thank you for allowing us to review and comment on the subject applications contained in your memorandum dated May 30, 1995.

We have no objections to the use of the Ewa Caprock groundwater for irrigation purposes in the Ewa Management Area. However, there are plans to provide treated wastewater effluent for non-potable purposes in the immediate area of the Ewa Caprock Aquifer. The Department of Health recommends that Water Use Permit from this aquifer be granted only if no other alternative source is available, and only until the effluent is available to the applicant. Once the effluent becomes available, we recommend that the applicant be given a reasonable time to connect to the effluent water system, then the Water Use Permit, should be withdrawn. Provisions to include the proper infrastructure to implement these conditions should be required as part of any new construction plans.

All reuse plans must conform to applicable provisions of the Department of Health's "Guidelines for the Treatment and Use of Reclaimed Water." We reserve the right to review the detailed plans for conformance to these guidelines and to the Hawaii Administrative Rules, Chapter 11-62.

Should you have any questions, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4294.

C: WWB
TO:  Mr. Kali Watson, Chairperson  
      Department of Hawaiian Home Lands  
Dr. Lawrence Miike, Director  
      Department of Health  
Mr. Clayton H. W. Hee, Chairperson  
      Office of Hawaiian Affairs  
Ms. Esther Ueda, Executive Officer  
      Land Use Commission  
Mr. Raymond Sato, Manager & Chief Engineer  
      Honolulu Board of Water Supply  
Mr. Patrick Onishi, Director  
      Department of Land Utilization  
Mrs. Cheryl D. Soon, Chief Planning Officer  
      Planning Department  

FROM:  Michael D. Wilson, Chairperson  
      Commission on Water Resource Management  

SUBJECT:  Water Use Permit Applications  
          Ewa Caprock Groundwater Management Area, Oahu  

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

☐ We have no comments  ☐ We have no objections  
☐ Comments attached  ☐ Additional information requested  
☐ Extended review period requested  

Contact person:  Luis A. Monrique  
Signed:  R.O.  
Phone:  594-1935  
Date:  06/23/95
TO: Mr. Kali Watson, Chairperson  
Department of Hawaiian Home Lands  
Dr. Lawrence Miike, Director  
Department of Health  
Mr. Clayton H. W. Hee, Chairperson  
Office of Hawaiian Affairs  
Ms. Esther Ueda, Executive Officer  
Land Use Commission  
Mr. Raymond Sato, Manager & Chief Engineer  
Honolulu Board of Water Supply  
Mr. Patrick Onishi, Director  
Department of Land Utilization  
Mrs. Cheryl D. Soon, Chief Planning Officer  
Planning Department  
FROM: Michael D. Wilson, Chairperson  
Commission on Water Resource Management  
SUBJECT: Water Use Permit Applications  
Ewa Caprock Groundwater Management Area, Oahu  

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.  

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.  

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.  

Attachment(s)  

Response:  

( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested  

Contact person: Herbert H. Minakami  
Phone: 527-6183  
Signed: RAYMOND H. SATO  
Date: 6/95  
Manager and Chief Engineer
Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:
( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: MANABU TAGOMORI
Phone: 6

Signed: 6/13
Date: 6/13
Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Response:

☑ We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: Cathy Tucker
Phone: 703-82
Signed: Date: 6/13/95
TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development

FROM: Rae M. Loui, Deputy Director
    Commission on Water Resource Management

SUBJECT: Request for Comments
    Water Use Permit Applications
    Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response: 6/7/95
( ) We have no comments
( ) We have no objections
() Comments attached
( ) Additional information requested
( ) Extended review period requested

DOFAW HAS NO COMMENTS OR OBJECTIONS TO THE PROPOSED REQUEST.

Contact person: Administrator
Phone: 587-0166

Signed: ____________________________ Date: ____________________________
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM: Rae M. Loui, Deputy Director  
Commission on Water Resource Management

SUBJECT: Request for Comments  
Water Use Permit Applications  
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Response:

( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested

Contact person: Phone: 587-0110

Signed: Date: 6-3-95
TO: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
Office of Conservation and Environmental Affairs
State Parks
Water and Land Development

FROM: Rae M. Loui, Deputy Director
Commission on Water Resource Management

SUBJECT: Request for Comments
Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

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If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN: ss
Attachment(s)

Response:
( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: Phone: 587 0218

Signed: Date: 6/11/95
Mr. Alan Suwa  
Haseko (Ewa), Inc.  
820 Mililani St., Ste. 810  
Honolulu, HI 96813

Dear Mr. Suwa:

Enclosed is a copy of the public notice for your water use permit application for Well No. 1902-01 which will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

Please be aware that there may be objections to your application. If objections are made, the objector is required to file such objections with the Commission and is also required to send you a copy of the objections.

You, or any other party, may respond to objections by filing a brief in support of your application with the Commission within ten (10) days of the filing of an objection. You, or the other party, must also send a copy of the response to the objector.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI  
Deputy Director

LN:ss  
Encl.
TO: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
Office of Conservation and Environmental Affairs
State Parks
Water and Land Development

FROM: Rae M. Loui, Deputy Director
Commission on Water Resource Management

SUBJECT: Request for Comments
Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

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We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: ____________________________ Phone: ________________
Signed: ____________________________ Date: ________________
TO: Other Interested Parties

FROM: Rae M. Loui, Deputy Director
Commission on Water Resource Management

SUBJECT: Request for Comments
Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or interferences with the programs, plans, and objectives of the organization or agency that you represent. Written objections should be made in accordance with Section 13-171-18 of our Administrative Rules and must be filed by the June 22, 1995 deadline.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:
( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: ______________________ Phone: ____________

Signed: ______________________________ Date: ____________
MAY 22 1995

TO: 
Mr. Kali Watson, Chairperson
Department of Hawaiian Home Lands

Dr. Lawrence Miike, Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Ms. Esther Ueda, Executive Officer
Land Use Commission

Mr. Raymond Sato, Manager & Chief Engineer
Honolulu Board of Water Supply

Mr. Patrick Onishi, Director
Department of Land Utilization

Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

{ } We have no comments
{ } We have no objections
{ } Comments attached
{ } Additional information requested
{ } Extended review period requested

Contact person: _____________________________ Phone: _______________

Signed: _____________________________ Date: _______________
Honorable Jeremy Harris, Mayor  
City & County of Honolulu  
City Hall  
Honolulu, HI 96813

Dear Mayor Harris:

Notice of Applications for Water Use Permits  
Ewa Caprock Groundwater Management Area, Oahu

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-171-17(a), we are sending you a copy of the public notice for water use permit applications for the Ewa Caprock Groundwater Management Area, which will be published in the Honolulu Star Bulletin.

These requests are for new water use permits to continue current or immediate nonpotable uses at new developments in Ewa, Oahu. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995.

In addition, Section 13-171-13(b), of our Administrative Rules, states:

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."

We would appreciate receiving your comments, within the next sixty (60) days, on whether these proposed nonpotable uses are consistent with county plans and policies.

Aloha,

MICHAEL D. WILSON

Enclosures
May 22, 1995

Ms. Rae M. Loui  
Deputy Director  
Commission on Water Resource Management  
1151 Punchbowl Street, Room 227  
Honolulu, Hawaii 96813

Dear Ms. Loui:

Request to Continue Water Use Permit  
Haseko Well No. 1 (Well No. 1902-01)  
Ewa Caprock Groundwater Management Area, Oahu

This is to confirm our continued use of the permitted water allocation for the subject well after the July 12, 1995 expiration date.

We have no modifications to the present allocation or our permit terms. Water is still needed as construction of the golf course has been delayed because of difficulties beyond our control in obtaining the grading permit. Since the grading permit was not issued within a year after zoning approvals, City and County ordinances require that we now obtain a Plan Review Use Permit for our golf course development, which we anticipate to get before the end of the year.

In terms of actual water use, approval of our permit was granted effective as of the termination of land lease with Oahu Sugar Company, Limited (OSCo) in October 1994. The actual termination of lease, however, did not occur until March 31, 1995, as it was extended twice to accommodate final harvesting.
In addition, we have attached an updated annual nonpotable demand projections to the year 2000 and 5-year demand projections to project build out as requested. If you have any questions, please contact me at 599-1444.

Very truly yours,

Nelson W.G. Lee  
Executive Vice President

NWGL/AS:jn

Attachment

cc: Oshima, Chun, Fong & Chung
PEarl Harbor Regional Plan
Non-Potable Water Demand Forecast

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(1) Single-Family residential development will be supplied exclusively by the potable system based on public health, marketing, and liability concerns of developers as stated in the 1987 Ewa Water Master Plan.

(2) Assumes 900,000 gpd per 18-hole golf course. A 27-hole golf course is proposed.

(3) Uses will be on the following TMK's: 9-1-11:1 thru 7; 9-1-12:2, 3, 5, 6, 7, 8, 9, 11, 12, 13, 16, 17 and 23. These parcels will be consolidated and resubdivided in the process of development.

(4) Proposed temporary use for irrigation of agricultural crops on former sugar lands awaiting development. Based on transfer of Water Use Permit from Oahu Sugar Co. and pending feasibility studies.
May 12, 1995

Mr. Michael Wilson, Chairperson,
and Members of the Commission on
Water Resource Management
State of Hawaii
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Re: Transfer of Water Use Permit/OSCo EP-27

Dear Mr. Wilson and Commissioners:

As evidenced by the attached, Oahu Sugar Company, Limited (OSCo), on April 1, 1995, has transferred its water use permit for 4.16 mgd drawn from OSCo wells EP 27A, 27B, 28, and 29 to HASEKO (Ewa), Inc. (HASEKO). These wells draw non-potable water from the Ewa caprock aquifer.

This transfer of permit is in accordance with Hawaii Revised Statutes Section 174C-59(a) inasmuch as the water will continue to be used to irrigate agricultural crops (albeit crops other than sugar cane) in the same location and in the same quantities as was authorized to OSCo.

HASEKO understands that should any of the conditions change in the future (such as a change from agricultural to urban use), that a modification of permit or an application for a new permit will be necessary.
Mr. Michael Wilson, Chairperson
and Members of the Commission on
Water Resource Management
May 12, 1995
Page 2

Your confirmation that this transfer is valid and approved will be appreciated. Please feel free to contact me at 599-1444 should you have any questions.

Very truly yours,

Nelson W.G. Lee
Executive Vice President

Attachment

cc: Oahu Sugar Company, Limited
April 27, 1995

HASEKO (Ewa), Inc.
850 Mililani Street, 8th Floor
Honolulu, Hawaii 96813

Subject: Transfer of Water Permit from Oahu Sugar Company, Limited ("OSCo") to HASEKO (Ewa), Inc. ("HASEKO")

Gentlemen:

In connection with the termination of that certain Lease between HASEKO and OSCo dated June 24, 1991, as amended, OSCo has agreed to transfer to HASEKO that certain water permit issued to OSCo by the Commission on Water Resource Management ("CWRM") as more particularly described in Exhibit A attached hereto (the "Water Permit"). The Water Permit, and the allocation of water represented by said permit, is for the withdrawal of water from the wells and/or water sources listed in said Exhibit A. The transfer shall include all permits, rights and privileges granted pursuant to, or otherwise associated with, the Water Permit with respect to water use and the related wells and/or water sources to the extent such permits, rights and privileges are transferable. OSCo hereby represents and warrants that it has not previously transferred or encumbered the Water Permit.

By execution of this letter, and for good and sufficient consideration received by OSCo, OSCo hereby transfers, delivers and assigns to HASEKO the Water Permit and all rights and privileges of OSCo in and to the water from the wells and/or water sources referred to in the Water Permit. Such transfer and assignment shall be fully effective as of April 1, 1995.

HASEKO agrees to notify CWRM of this transfer, as required by State law. In the event HASEKO desires to modify the Water Permit, HASEKO shall make any necessary application at HASEKO's sole expense; provided, however, that upon HASEKO's request, OSCo shall cooperate with HASEKO, if necessary, in any such application.
Should the above terms of the transfer be acceptable, please acknowledge HASEKO's acceptance by signing and returning an executed copy of this letter to OSCo.

Sincerely yours,

A. James Wriston, III
Director, Plantations Real Estate

AGREED AND ACCEPTED:

HASEKO (EWA), INC.

By: ________________________________
   Name: Katsuo Shimizu
   Title: President

Date: May 1, 1995
EXHIBIT A

All permits, including all extensions, modifications and renewals thereof, issued by the State of Hawaii's Department of Land and Natural Resources or Commission on Water Resource Management to Oahu Sugar Company, Limited ("OSCo") for the use and withdrawal of water from the wells and/or water sources listed below on the lands previously leased by OSCo from HASEKO (Ewa), Inc., and all rights and privileges necessary or appropriate to the continued withdrawal and use of water from such wells and/or water sources, together with any and all existing preserved uses of such wells and/or water sources.

| Well Number:     | 1902-01     |
| Well Name:       | EP 27A, 27B, 28, 29 |
| Original Permit  |              |
| Approval Date:   | 12/16/92     |
| Aquifer System:  | Pu'uloa      |
Notice of Water Use Permit Expiration
Haseko Well No. 1 (Well No. 1902-01)
Ewa Caprock Groundwater Management Area, Oahu

On July 13, 1994, the Commission on Water Resource Management (Commission) approved a water use permit for one-year interim use of 1.5 million gallons per day of brackish groundwater for Well No. 1902-01 for irrigation supply and dust control at the Ewa Marina project site. This water use permit is due to expire on July 12, 1995.

If you require continued use of this water after the July 12, 1995 expiration date, please confirm this in writing by May 22, 1995. Please indicate any modifications to the present allocation or any other permit term that should be made at this time. All proposed modifications should be fully described and supported. In addition, please attach updated annual nonpotable demand projections to the year 2000 and 5-year demand projections to project build-out for your caprock source(s).

All timely requests for new or continued use(s) of Ewa Caprock groundwater will be submitted for Commission action, tentatively, at the meeting of June 14, 1995. Failure to respond by the May 22, 1995 date will create a presumption of abandonment of the use beginning July 13, 1995. If you wish to revive the use after July 13, 1995, you must apply for a permit pursuant to §13-171-12 Hawaii Administrative Rules.

As you are aware, the Commission hired a consultant to develop a nonpotable water master plan for Central Oahu and the Ewa Plain. On April 3, 1995, you were sent a copy of the 3-part pre-final draft report, "Water Reclamation" (February 1995), which recommends reuse of treated sewage effluent as a means of recharging the caprock aquifer. Please do not overlook the May 15, 1995 deadline for submitting your comments on the draft report. Your participation and input is essential to the development and implementation of a successful nonpotable water master plan for Ewa, Oahu.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI
Deputy Director
Testimony Presented to the  
Commission on Water Resource Management  
7/13/94  
Regular Commission Meeting

Aloha, and thank you for the opportunity to present testimony to the Commission concerning Agenda #1, items 3, 4, 5, 6, 7, 9 and 11. I'm Toni ‘issen with the Native Hawaiian Advisory Council.

Item 3 Applications for Water Use Permits and Well Construction/Pump Installation Permits, Ewa Caprock Ground Water Management Area, Oahu

NHAC BELIEVES THAT THE CRITERIA USED TO ISSUE WATER USE PERMITS DOES NOT COMPLY WITH THE STATE WATER CODE OR ADMINISTRATIVE RULES. FURTHER, NO WATER USE PERMITS SHOULD BE ISSUED FROM THE EWA CAPROCK GROUND WATER MANAGEMENT AREA DRAWING FROM THE PUULOA AQUIFER SYSTEM BECAUSE IT IS OVER ALLOCATED.

In order to obtain a water use permit an applicant shall establish that the proposed use of water meets seven listed criteria. H.R.S. 174C-49(a), H.A.R. 13-171-13(a). These seven items are:

1. Can be accommodated with the available water source;
2. Is a reasonable-beneficial use as defined in section 174C-3;
3. Will not interfere with any existing legal use of water;
4. Is consistent with the public interest;
5. Is consistent with state and county general plans and land use designations;
6. Is consistent with county land use plans and policies; and
7. Will not interfere with the rights of the department of Hawaiian home lands as provided in section 221 of the Hawaiian Homes Commission Act.

In the submittals prepared by Commission staff, two tables outline the sustainable yield for the Puuloa and Kapolei aquifer systems. In table 1, it shows existing water uses and requested water uses. In combination these uses exceed the sustainable yield of the Puuloa aquifer.
PUULOA AQUIFER SYSTEM

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<td>Estimated Sustainable Yield</td>
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</table>

(all information taken from table 1)

Total allocations exceed the estimated sustainable yield of the Puuloa aquifer, given this situation it would seem impossible to meet criteria #1 - Whether the water use requested can be accommodated with the available water source. All requests cannot be accommodated by the available water source. On these grounds alone the water use permits should be denied. We are disappointed that the staff has not commented about the potential effects of pumpage exceeding sustainable yield and/or has included other factors mitigating those concerns. We need more information about which uses can and cannot be accommodated.

Furthermore, staff states, "because no objections have been submitted, staff finds that the conditions for a water use permit [the seven criteria] have been met." see p.6. The Water Code is clear, it is the applicant that must establish that all criteria for obtaining a permit are met. A permit cannot be granted on the basis of other agencies not filing objections with the Commission. In addition to considering other agency recommendations, it is the Commission that must determine based on the information presented to it by the applicant and staff recommendation whether to issue a permit.

The Water Commission is mandated to preserve, protect and manage Hawaii's precious water resource. Proper management of the resource is dependent on applying fair and just standards to all water allocation decisions. Those standards are clearly listed in H.R.S. 174C-49 and H.A.R. 13-171-13 and must be complied with as a matter of law.

Item 4  Oahu County Club, Well Modification and Water Use Permit Applications, OCC Irrigation Well (Well No. 2050-01)

Again, because no objections have been filed by other agencies this is held to mean that all criteria for a permit have been met. A permit cannot be issued unless the applicant has established that all criteria has been met.
Mr. Dante Carpenter  
Office of Hawaiian Affairs  
711 Kapiolani Blvd., Suite 500  
Honolulu, HI 96813  

Dear Mr. Carpenter:  

Application for Water Use Permit  
Haseko Well No. 1 (Well No. 1902-01)  
Ewa Caprock Ground Water Management Area, Oahu  

Thank you for your comments, dated July 5, 1994, on the water use permit application filed by Haseko (Ewa), Inc. for the Haseko Well No. 1 (Well No. 1902-01).  

We share your concerns regarding the need for comprehensive long-term land and water use planning in West Oahu. The Commission on Water Resource Management is committed to working with the city and other state agencies to achieve this priority goal and ensure that future needs are met.  

We have hired a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. The objectives of this study are to develop plans to provide, distribute, and market nonpotable water; to plan for an assured supply of low cost water resources for agriculture; and to plan for future viability of reclaimed water for irrigation in the long term. We expect the work will be completed in about six months time.  

A copy of the preliminary recommendations will be transmitted to the Office of Hawaiian Affairs for review and comment. Your input is valuable and will be used to formulate the final recommendations that will be presented to the Commission. Again, we concur that planning for the future is necessary at this time. Adequate supplies of our precious water resources must be assured for future generations.  

If you have any questions, please contact Lenore Nakama at 587-0218.  

Sincerely,  

RAE M. LOUI  
Deputy Director  

L.N:ko  
c: Luis Manrique, OHA
November 3, 1994

Ms. Rae M. Loui
Deputy Director
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

Dear Ms. Loui:

RE: Temporary Water Use Permit for Haseko Well No. 1
by Haseko (Ewa), Inc. (State Well No. 1902-01)

The subject permit was approved by the Commission on July 13, 1994. Water allocation was requested for golf course, landscape, and maintenance irrigation, and for dust control on surrounding fallow areas upon termination of sugar operations. Water is to be withdrawn from an existing well used by Oahu Sugar Company (OSCO) situated on lands currently leased by Haseko. We indicated previously that when OSCO’s lease expires in October 1994, control of the subject well would revert back to Haseko. In accordance with Item 1(a) of the approved Staff Recommendation Report, the permit conditions would take effect upon termination of the OSCO lease.

This is to notify you that the term of the lease with OSCO has been extended to December 31, 1994, therefore, we do not anticipate making any withdrawals until termination of their lease.

Should you have any questions regarding this matter, please feel free to call me at 599-1444.

Sincerely yours,

HASEKO (EWA), INC.

Alan Suwa
Project Manager
ITEM 4  OAHU COUNTRY CLUB, WELL MODIFICATION AND WATER USE PERMIT APPLICATIONS, OCC IRRIGATION WELL (WELL NO. 2050-01)

Unanimously approved (Girald/Nobriga).

ITEM 3  APPLICATIONS FOR WATER USE PERMITS AND WELL CONSTRUCTION/PUMP INSTALLATION PERMITS, EWA CAPROCK GROUND WATER MANAGEMENT AREA, OAHU

The Estate of James Campbell (1905-08 & 10)
State of Hawaii, Housing Finance & Development Corp. (2003-01 to 05)
Hawaii Prince Golf Club (1990-02 & 17 to 20, 1901-03)
Gentry Hawaii, Ltd. (2001-03 to 05, 07, 08 & 2002-12)
Gentry Development Corp. (2001-09 & 10)
Haseko (Ewa), Inc. (1902-01)

Ms. Nakama recommended that the following be added under Recommendation 1 and presented an updated summary:

"a. Any water use permit granted for Well No. 1902-01 be effective as of October 1994, when the lease to Oahu Sugar Company expires."

The following items were brought up by the Commission members:

1. Why is it that there is not enough data on the wells as far pumping?

   Many of the Gentry wells have been constructed in the last couple of years, therefore not much data have been received. Although the Oahu Sugar wells are old wells, there isn't much data on chlorides. Staff is in the process of establishing a network and identifying index wells that will monitor and track response.

2. When will the Non-potable Water Master Plan be completed and available for the Commission's use for decision making?

   As projected, the draft recommendations will be available in about four months and the final report by December.

   a. Provide a means to encourage cooperation in monitoring resource and finding a feasible alternate nonpotable source.
   b. Immediate and long-term future viability of resource is uncertain.

4. Concern was expressed and users of the wells were asked to comply with providing data as necessary.

5. Why was July 12, 1995 chosen for the duration of the water use permits rather than when the Non-potable Master Plan is finalized?
   a. It would be a year from the Commission meeting where it is being heard and one year permits are being recommended.
   b. Although the Non-potable Master Plan would be finalized, the sources may not be immediately available.
c. There is nothing to prevent the Commission from hearing the permits again in an earlier timeframe.

d. Even if the Plan is finalized, it would still take additional time for Commission review and approval.

6. Some water should be saved for agriculture, not all should be given to development.

7. Shorten permit time period to emphasize the importance of using effluent wherever possible.

Applicants Gentry, Haseko, and Campbell Estate had no testimony. HFDC provided written testimony dated July 8 (see files).

Toni Bissen of Native Hawaiian Advisory Council (NHAC) provided written and oral testimony (see files).

Ms. Nakama clarified several questions presented by Ms. Ziegler of Sierra Club Legal Defense Fund.

Chairperson Ahue asked Mr. Thomas of HFDC to clarify Mr. Conant’s request to deviate from the guidelines relative to the issuance of interim permits, subject to annual review, because the sale of the golf course would “fall through”. He felt there should be some discussion relative to the policies and guidelines in regards to the sale. Mr. Thomas said timing is critical and asked the Commission to defer HFDC’s application until the next meeting so they can consult with the Commission staff.

Ms. Bissen commented that the Commission, in applying the Water Code, should be satisfied that the water request can be accommodated with the available water. With the information and uncertainties brought up, she felt that the first criterion was not established and that the standards should be adhered to. She asked what the rush was to act on the application.

Ms. Loui stated that the permits have expired and two months ago the Commission gave the applicants a two-month stay to continuing pumping. There is no official estimate for the caprock because it is a different type of resource, it is a brackish resource. Overpumpage is self-regulating in that the applicant would regulate their pumpage if it becomes too salty for use. Therefore the concern is not the same as for a basal lens.

In regards to HFDC’s permit, it would make sense to continue the temporary permit and this would not stop the Commission from revisiting the permit request next month.

In regards to the issue of compliance, Dr. Sybinsky asked if staff could report to the Commission on the figures. Chairperson Ahue stated that could be done administratively.

Unanimously approved as amended (Girald/Nakata).

ITEM 5

DEPARTMENT OF TRANSPORTATION, APPLICATION FOR STREAM
CHANNEL ALTERATION PERMIT, UNNAMED STREAM, MAKaha, OAHU

Unanimously approved (Nobriga/Girald).
Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Applications for Water Use Permits and
Well Construction/Pump Installation Permits
Ewa Caprock Ground Water Management Area, Oahu

Applicant: The Estate of James Campbell
Landowner: Same
(Well No. 1905-08 & 10)

Landowner: Same
(Well Nos. 2003-01 to 05)

Applicant: Hawaii Prince Golf Club
Landowner: Same
(Well Nos. 1900-02 & 17 to 20, 1901-03)

Applicant: Gentry Hawaii, Ltd.
Landowner: Same
(Well Nos. 2001-03 to 05,07,08 & 2002-12)

Applicant: Gentry Development Corp.
Landowner: Same
(Well No. 2001-09 & 10)

Applicant: Haseko (Ewa), Inc.
Landowner: Same
(Well No. 1902-01)

Background

The boundaries of the brackish Ewa Caprock Aquifer were officially adopted by the Commission on March 3, 1993, without any sustainable yield estimate. In the 1988-1992 timeframe, permits totalling 19.524 million gallons per day (mgd) were awarded mainly to existing irrigation uses (e.g., Oahu Sugar Co.). Other permits totalling 39.608 mgd were for various salt water and highly brackish to saline water uses (chlorides > 1,000 MG/L) at the western end of the aquifer.

To satisfy the needs of new developments in the Kapolei and Pualoa areas of the caprock (Exhibit 1), temporary water use permits not exceeding one year were granted to the applicants listed in Exhibit 2. These temporary permits expired on April 28, 1994. At the May 18, 1994 Commission meeting, action on all pending applications were deferred to allow applicants an additional thirty (30) days to comply with the conditions of the temporary permits. These conditions were met within the specified deadline, and with the exception of the City Dept. of Housing and Community Development, all applicants
Chairperson and Members
Commission on Water Resource Management

have submitted requests for renewal of the allocations described in their expired temporary permits.

In addition, three new applications for future uses of caprock water require action by the Commission. Haseko (Ewa), Inc. submitted a completed application on May 18, 1994 for a new water use from an existing caprock well. The other two applications were filed by the Gentry Development Corp. for new wells, pumps, and future water uses. One of these applications was deferred at the April 28, 1994 Commission meeting because consistency with county zoning had not been established. The second Gentry application on file was completed on June 9, 1994. Specific information regarding the sources, uses, notifications, objections, and field investigation(s) are described in Attachment A and the attached exhibits.

**Analysis & Issues**

The current guideline used for sustainable yield for water suitable for irrigation uses (chlorides < 1,000 MG/L) is 21 mgd. After cessation of sugarcane operations, the sustainable yield will be reduced to 16 mgd. Although Yuen & Associates, Inc. (1989) made these estimates based on three aquifer systems (Malakole, Puuloa, and Kapolei), the Commission did not officially adopt the separate aquifer systems. If the sustainable yield were divided between the three aquifer systems, the Puuloa Aquifer System may be presently over-allocated. Tables 1 & 2 show current allocations and pending applications for water use permits in relation to the unofficial sustainable yield estimates for the Puuloa and Kapolei Aquifer Systems.
Chairperson and Members  
Commission on Water Resource Management  
July 13, 1994

**TABLE 1. PUULOA AQUIFER SYSTEM**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PUULOA AQUIFER SYSTEM (mgd)</th>
<th>12-MAV (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Yield Estimate</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Less: Other Existing Permits*</td>
<td>(18.670)</td>
<td>15.131</td>
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<tr>
<td>Available Allocation</td>
<td>-3.670</td>
<td></td>
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<tr>
<td>Expired Temporary Permits:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hawaii Prince Golf Club (EP 22 &amp; Wells 1 to 5)</td>
<td>0.036</td>
<td>1.770**</td>
</tr>
<tr>
<td>Gentry Pacific, Ltd. (Geiger Park)</td>
<td>0.030</td>
<td>0.046</td>
</tr>
<tr>
<td>(Golf Villa I)</td>
<td>0.063</td>
<td>0.028</td>
</tr>
<tr>
<td>(Palm Villa 2)</td>
<td>0.048</td>
<td>0.019</td>
</tr>
<tr>
<td>(Palm Court 3)</td>
<td>0.066</td>
<td>0.022</td>
</tr>
<tr>
<td>(Geiger Apartment)</td>
<td>0.400</td>
<td>0.000</td>
</tr>
<tr>
<td>(Soda Creek III)</td>
<td>0.200</td>
<td>0.000</td>
</tr>
<tr>
<td>Pending Complete Applications:</td>
<td>(1.786)</td>
<td></td>
</tr>
<tr>
<td>Gentry Development Corp. (Fort Weaver Apts.)</td>
<td>0.048</td>
<td></td>
</tr>
<tr>
<td>(Temporary Irrigation)</td>
<td>0.238</td>
<td></td>
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<tr>
<td>Haseko (Ewa), Inc. (Haseko Well No. 1)</td>
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<tr>
<td>Pending Incomplete Applications:</td>
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<td></td>
</tr>
<tr>
<td>Haseko (Ewa), Inc. (Ewa Marina)**</td>
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<td></td>
</tr>
</tbody>
</table>

* Refer to Exhibit 4 for a listing of other existing permits.  
** Includes 0.9 mgd prior permitted use for Hawaii Prince Golf Club (see Exhibit 4).  
*** Proposed Ewa Marina will result in a permanent reduction in storage capacity.

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See [Supplemental Table 1](attached)
TABLE 2. KAPOLEI AQUIFER SYSTEM

<table>
<thead>
<tr>
<th>ITEM</th>
<th>KAPOLEI AQUIFER SYSTEM (mgd)</th>
<th>12-MAV (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Yield Estimate</td>
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</tr>
<tr>
<td>Less: Other Existing Permits*</td>
<td>(1.150)</td>
<td>0.000</td>
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<tr>
<td>Available Allocation</td>
<td>3.850</td>
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<tr>
<td>Expired Temporary Permits:</td>
<td>(1.796)</td>
<td>0.879</td>
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<tr>
<td>Campbell Estate (Kapolei Irr I)</td>
<td>0.302</td>
<td>0.000</td>
</tr>
<tr>
<td>State HFDC (Kapolei Irr A,B,C,D,E)</td>
<td>1.494</td>
<td>0.879</td>
</tr>
</tbody>
</table>

The available data on water quality and the effects of pumpage is limited. A network has not yet been established, and the data from the applicants is insufficient to determine impacts, let alone predict impacts. The Campbell Estate has proposed to construct a monitor well to collect data that will provide greater insight on the behavior and response of the aquifer. Other applicants should also be motivated to collect and contribute data for this type of analysis.

Given the uncertainties with respect to the present sustainable yield of the caprock aquifer and the impacts of land use changes on future water availability, an important policy matter is the use of reclaimed water. How much should the uncertainty in caprock water availability drive the encouragement of the use of reclaimed water?

At present, reuse water appears to be the most promising and practical solution in the long term. However, because additional treatment, infrastructure development, modification of governmental policies and regulations, and other factors must be worked out before this source may be utilized, reclaimed effluent is not a solution in the short term.

One of the conditions of the temporary permits was to develop a joint plan for conversion to an alternate nonpotable source. Reclaimed water from Honolulu Wastewater Treatment Plant was identified by all applicants as a potential nonpotable source. Other sources that were identified include Waiahole Ditch water and basal aquifer water. Efforts to identify and jointly convert to an alternate nonpotable source will be directed and coordinated by staff. However, the applicants must actively participate and cooperate in this process.

To address the expected increase in nonpotable water demand for urban uses, the Commission has hired a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. However, the scope of the work is broad and must be supported by the individual plans and programs of the applicants.

In the interim, staff feels that existing and authorized planned developments in the Ewa area should be supported, provided that the conditions for a water use permit set forth in §174C-49 are successfully met. There is clearly a need to develop a long-range plan and organization, and all decisions made in the interim should count towards this goal.

Issues related to the pending requests for temporary permit renewals are
Chairperson and Members
Commission on Water Resource Management

July 13, 1994

summarized as follows (source locations are shown in Exhibits 1A to 1L, monthly water use graphs are shown in Exhibits 3A to 3F):

1. **Hawaii Prince Golf Club** - Average use reported by the Hawaii Prince Golf Club has exceeded permitted use for the last seven months (Exhibit 3A). However, because usage is estimated based on the pump capacities of their six wells (Exhibit 1A), reported usage is most likely over-estimated. Contracts have been awarded to install flow meters in each of the wells, and usage will continue to be monitored over the next year.

Higher than average usage may be attributed to large evaporative losses from the ten interconnected lakes, which have a total surface area of 32 acres. The lakes were designed to function as necessary storage facilities and also provide golf course water features. It is estimated that roughly 150,000 gallons per day (gpd) are lost to evaporation. Seepage is minimal, as all lakes are lined. The build-up of salts in the soils is a very real and legitimate concern, and regular over-watering is necessary to leach the salts. In the past, the Commission has allocated extra water to address this problem.

The Hawaii Prince is actively engaged in working towards more efficient utilization of their water supplies. Replanting on fifty acres is scheduled and, beginning next month, wetting agents will be injected into the soils twice each month. Also, some perimeter areas are no longer irrigated. It is projected that the allocation described in the expired temporary permit plus a 10% increase above their total permitted use will be sufficient.

2. **Gentry Pacific, Ltd.** - Although the Geiger Apartment and Soda Creek III wells have not been used to date, well drilling is completed and pumps have been ordered and are expected to be operational within three to five weeks.

3. **Campbell Estate** - No usage of the well has been reported to date. However, a contract is being finalized to outfit the wells with pumps and contracts will be issued shortly for transmission mains to tie the pumps and well complex to existing nonpotable lines. It is expected that pumpage will begin by September 1994.

4. **State Housing Finance and Development Corp** - There are no issues related to this application. FFDR request for permits (conditioned use permit attached) withdrawn. A summary of new applications is provided as follows:

1. **Gentry Development Corp.** - Applications have been submitted for two new wells for future irrigation uses.

The Fort Weaver Apt. Well will be used to supply the first phase of Gentry's Fort Weaver Apt. project and the adjacent highway landscaping. The requested allocation of 48,400 gpd will be used for irrigation of 7.8 acres.

The application for Gentry's Temporary Irrigation Well was originally submitted as a request for irrigation of a future golf course site. However, zoning for the golf course has not been approved and the revised application now indicates use will be for permanent and temporary landscape irrigation. The requested allocation is for 238,000 gpd to used on a total of 43.4 acres. The proposed well is a skimming well equipped with 2 pumps with capacities of 200 gallons per minute.

One issue with these applications is that estimated demands (5,400 and 6,200 gpd/acre) exceed that determined by staff to be reasonable for this type of use (3,000 gpd/acre). Because the applicants' projected demands varied widely and
lacked consistency, staff used information from the Hawaii Water System Standards 1985, county consumption guidelines, discussions with other government agencies for dust control, and existing water use report information for golf courses in the Ewa area to derive estimates for different types of uses that are considered reasonable, fair, and consistent. Previous allocations for the temporary permits were based on these estimates.

The conservation of water should be made a priority, and staff feels applicants should be encouraged to develop and adhere to plans and programs designed to mitigate the dry climate and conserve the available water resources. Because these uses may potentially be in competition, an equitable method for allocating water is necessary.

These applications have been reviewed by the Mayor's Office, the Board of Water Supply, the Dept. of General Planning, the Department of Land Utilization, the Dept. of Health, the Dept. of Hawaiian Home Lands, the Office of Hawaiian Affairs, and all the division within the State Dept. of Land and Natural Resources. Because no objections to these applications were submitted, staff finds that the conditions for a water use permit have been met, provided that the allocation approved is reasonable for this type of use.

This submittal was finalized on the morning of the July 7, 1994 deadline for filing objections to the Temporary Irrigation Well applications. Any objections received by the deadline will be brought forth during the Commission meeting.

2. **Haseko (Ewa), Inc.** - The application for the Haseko Well No. 1 specifies that the water will be used for golf course, landscape, and maintenance irrigation and for dust control on surrounding fallow areas, formerly in sugarcane. The projected demands are consistent with staff's estimates for these uses.

The water will be drawn from a well currently being used by Oahu Sugar Co. The current allocation for the well is 4.16 mgd. When the lease expires in October 1994, control of the well will revert back to Haseko. The present allocation will be reduced from 4.16 mgd to 1.5 mgd. Therefore, approval of this application will not result in greater draw from the system.

This submittal was finalized on the morning of the July 7, 1994 deadline for filing objections to the application. Any objections received by the deadline will be brought forth during the Commission meeting.

**RECOMMENDATION**

Staff recommends that the Commission:

1. Approve the issuance of temporary water use permits which shall be valid until July 12, 1995, to the applicants with completed applications listed in Tables 1 and 2. The permits shall be for allocations described in Tables 1 and 2, for the reasonable and beneficial uses described in the applications, and from the wells specified in their applications, except for the Gentry Development Corp. and the Hawaii Prince Golf Club.

2. Approve the issuance of a well construction permit and a temporary water use permit approved for Haseko (Ewa), Inc., for well no. 1902-01 be effective as of Oct. 1 when the lease to USCO exp.
Chairperson and Members
Commission on Water Resource Management
July 13, 1994

permit to the Gentry Development Corp. for the reasonable and beneficial use of 23,400 gallons per day of nonpotable water from the Fort Weaver Apt. Well (Well No. 2001-09) for landscape and roadway irrigation use on 7.8 acres.

a. The well construction permit shall be subject to the standard conditions listed in Attachment D.

b. The pump installation permit shall be approved administratively pending the results of the drilling and testing.

c. The temporary water use permit shall be valid until July 12, 1995.

3. Approve the issuance of a well construction permit and a temporary water use permit to the Gentry Development Corp. for the reasonable and beneficial use of 130,200 gallons per day of nonpotable water from the Temporary Irrigation Well (Well No. 2001-19) for permanent and temporary landscape irrigation on 43.4 acres.

a. The well construction permit shall be subject to the standard conditions listed in Attachment D.

b. The pump installation permit shall be approved administratively pending the results of the drilling and testing.

c. The temporary water use permit shall be valid until July 12, 1995.

Approve the issuance of a temporary water use permit which shall be valid until July 12, 1995 to the Hawaii Prince Golf Club, for the reasonable and beneficial use of 129,600 per day of nonpotable water from the combined pumpage of Wells 1 to 5 and EP 22 (Well Nos. 1900-02, 17 to 20 & 1901-03), for leaching salts and supplemental irrigation water for the golf course.

a. Flow meters shall be installed in each well within three months from the date of this submittal.

5. Require that applicants cooperate with the Commission's initiative in the development of the Nonpotable Water Master Plan for Central and Leeward Oahu.

6. Require that all temporary permits be subject to the standard conditions of a water use permit listed in Attachment B and the Conservation conditions listed in Attachment C.

Respectfully submitted,

RAE M. LOUI
Deputy Director

Attach.

APPROVED FOR SUBMITTAL:

KEITH W. AHUE, Chairperson
WATER USE PERMIT DETAILED INFORMATION

Source Information

AQUIFER:
- Sustainable Yield: NA mgd
- Existing Water Use Permits: 19.82 mgd
- Available Allocation: NA mgd
- Total of other pending allocations: NA mgd

1. WELL:
   - Location: Ewa Caprock Aquifer System, Oahu
   - Year Drilled: NA
   - Casing Diameter:
     - Elevations (msl = 0 ft.)
       - Water Level: NA ft.
       - Ground: 34 ft.
       - Bottom of Solid Casing: 4 ft.
       - Bottom of Perforated: 14 ft.
       - Bottom of Open Hole: -20 ft.
   - Total Depth: 54 ft.
   - Grouted Annulus Depth: 28 ft.
   - Pump Capacity: 100 gpm

2. WELL:
   - Location: Temporary Irrigation Well (Well No. 2001-10)
   - Year Drilled: NA
   - Casing Diameter:
     - Elevations (msl = 0 ft.)
       - Water Level: NA ft.
       - Ground: NA ft.
       - Bottom of Solid Casing: NA ft.
       - Bottom of Perforated: NA ft.
       - Bottom of Open Hole: NA ft.
   - Total Depth: NA ft.
   - Grouted Annulus Depth: 'NA ft.
   - Pump Capacity: 2 @ 200

3. WELL:
   - Location: Haseko Well No. 1 (Well No. 1902-01)
   - Year Drilled: 1964
   - Casing Diameter:
     - Elevations (msl = 0 ft.)
       - Water Level: 2 ft.
       - Ground: 5 ft.
       - Bottom of Solid Casing: NA ft.
       - Bottom of Perforated: NA ft.
       - Bottom of Open Hole: -3 ft.
   - Total Depth: 8 ft.
   - Grouted Annulus Depth: NA ft.
   - Pump Capacity: NA gpm
Use Information

1. Quantity Requested: 48,400 gallons per day.
   Proposed Type of Water Use: Landscape irrigation for 7.8 acres.
   Place of Water Use: Ewa by Gentry, Oahu, at TMK: 9-1-61:2&8

   Reported Water Usage:
   Nearby Similar Water Usage: NA mgd
   3,000 gpd

2. Quantity Requested: 238,000 gallons per day.
   Proposed Type of Water Use: Landscape irrigation for 43.4 acres.
   Place of Water Use: Ewa by Gentry, Oahu, at TMK: 9-1-61:2&54

   Reported Water Usage:
   Nearby Similar Water Usage: NA mgd
   3,000 gpd

3. Quantity Requested: 1,500,000 gallons per day.
   Proposed Type of Water Use: Golf course, roadway, and maintenance irrigation; dust control.
   Place of Water Use: OSCo field 88, Oahu, at TMK: 9-1-12:5,6&7

   Reported Water Usage:
   Nearby Similar Water Usage: 6.551 mgd
   1,000 to 4,000 gpd/acre

Ewa Caprock Aquifer System
Current 12-Month Moving Average Withdrawal: 15.131* mgd

* Does not include withdrawals at wells with expired temporary permit or withdrawals from Malakole area.

Nearby Surrounding Wells and Other Registered Ground Water Use

The Gentry developments are proposing to use other nearby wells in the vicinity of Well Nos. 2001-09 & 10. By distributing the pumpage over a large area, as opposed to one central pumping station, impacts to the aquifer should be minimized; other benefits are clearly derived from this strategy of well development. There are no other wells within a mile of Haseko's Well No. 1. The 1992 Draft of the Oahu Water Management Plan did not provide an estimate for 1990 withdrawals.

ATTACHMENT A
Public Notice

In accordance with HAR §13-171-17, a public notice was published in the Star-Bulletin on June 15, 1994 and June 22, 1994 and copies of the notice were sent to the Mayor’s office and the Board of Water Supply. Additional notice copies were sent to the County Council and Department of Water Supply. Copies of the completed application were sent to the Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, Aquatic Resources & Historic Preservation Divisions of the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by July 7, 1994.

Objections

The public notice specifies that an objector meet the following requirements: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; (3) state all grounds for objections to the proposed permits, (4) provide a copy of the objection letter(s) to the applicant, and (5) submit objections meeting the previous requirements to the Commission by July 7, 1994.

To the best of staff’s knowledge there are no objectors who have property interest within the Ewa Caprock Aquifer System or who will be directly and immediately affected by the proposed water use.

Briefs in Support

Responses to objections, or briefs in support, regarding the application are required to be filed with the Commission ten (10) days after an objection is filed and, presumably, copies are served to the applicant. No briefs in support were filed with the Commission.

Field Investigation

Gentry’s water sources and proposed uses were not investigated as the wells have not been drilled. Staff is in the process of verifying OSCo well sources.
STANDARD WATER USE PERMIT CONDITIONS

1. The ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "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 not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." (BAR §13-171-2).

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HAR §13-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

4. The ground water use approved must not interfere with surface or ground water rights or reservations.

5. The ground water use approved must not interfere with interim or permanent instream flow standards or policies as determined by the Commission. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use permit is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and staff submittal approved by the Commission at its July 13, 1994 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

9. The water use permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect water sources in quantity, quality, or both;
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June 1987, shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Homes, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

ATTACHMENT B
Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a monthly basis in accordance the Commission’s September 16, 1992 action on reporting requirements;

12. The water use permit shall be subject to the Commission’s periodic review of the applicable aquifer’s sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the Ewa Caprock Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

14. The use(s) authorized by law and by the water use permit do not constitute ownership rights.

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies’ permits and conditions pertaining to water use or the water resource.

16. The permittee shall prepare and submit a water shortage plan within 30 days of issuance of the permit to assist the Commission in fulfilling HAR §13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Ewa Caprock Ground Water Management Area.

17. The water use permit granted shall be an temporary permit valid until July 12, 1995.

18. The water use permit shall be issued only after AG review.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies to Stream Protection and Management (SPAM), as well as legislative mandates to protect stream resources.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permitting shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   a. Reduce the demand for non-potable water by:
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permitting shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
STANDARD WELL CONSTRUCTION/PUMP INSTALLATION PERMIT CONDITIONS

1. The Commission shall be notified before work commences.

2. The well construction/pump installation permit shall be for construction, testing, and installation of a pump of capacities specified in the application, or less, pump in the well, as determined by the pumping test results. The applicant shall coordinate with the Commission and conduct a pumping test in accordance with the protocol established by the Commission. A means to accurately measure water levels, acceptable to the Commission, shall also be provided. The applicant shall submit to the Commission the test results and proposed permanent pump information, based on the test, for approval by the Chairperson. No permanent pump may be installed and no water used from the well without the Chairperson’s approval.

3. The proposed use shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct and pump water from a well shall not constitute a determination of correlative water rights. The permittee is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

4. The applicant shall comply with all applicable laws, rules, and ordinances.

5. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

6. The well construction/pump installation permit may be revoked if work is not started within six (6) months after the methodology and analysis of the test results are agreed upon. The work proposed in the well construction/pump installation permit application shall be completed within two years from the date of permit issuance.

7. That the pumping test shall follow the aquifer pump testing protocol established by the Commission. Prior to conducting the aquifer pump test, the applicant shall mutually agree with the Commission staff to a methodology and analysis of the test results.

8. The following shall be submitted to the Commission within thirty (30) days after completion of work:
   a. Well completion report.
   b. Elevations of well (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.

9. The well shall not be used for drinking water unless it is properly tested and approved by the State Department of Health.

10. The well construction/pump installation water use permit application and staff submittal approved by the Commission at its July 13, 1994 meeting are incorporated into the permit by reference.

11. The permit shall be subject to review by the Attorney General.

ATTACHMENT
<table>
<thead>
<tr>
<th>Applicant</th>
<th>Well No.</th>
<th>Well Name</th>
<th>Approval Date</th>
<th>Gpd</th>
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<tbody>
<tr>
<td><strong>Aquifer System: KAPOLEI</strong></td>
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<tr>
<td>Campbell Estate</td>
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<td>KAPOLEI IRR C</td>
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6 Permits Totaling 1.796

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<tr>
<td>Hawaii Prince Golf Club</td>
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<tr>
<td>Hawaii Prince Golf Club</td>
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<td>Hawaii Prince Golf Club</td>
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<tr>
<td>Hawaii Prince Golf Club</td>
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<tr>
<td>Hawaii Prince Golf Club</td>
</tr>
<tr>
<td>Hawaii Prince Golf Club</td>
</tr>
<tr>
<td>Gentry Pacific, Ltd.</td>
</tr>
<tr>
<td>Gentry Development Co.</td>
</tr>
<tr>
<td>Gentry Development Co.</td>
</tr>
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<td>Gentry Pacific, Ltd.</td>
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<td>Gentry Pacific, Ltd.</td>
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<td>Gentry Pacific, Ltd.</td>
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<tr>
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<td>CEC DHCD</td>
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</table>

14 Permits Totaling 1.771

20 Permits Totaling 3.567
HAWAII PRINCE G.C. COMBINED PUMPAGE
(WELL NOS. 1900-02, 17 to 20)

MONTHLY VALUES
12-MAV
REQUESTED AMOUNT

EXHIBIT 3A
GENTRY PACIFIC, LTD. PUMPAGE
GEIGER PARK WELL (Well No. 2001-03)

EXHIBIT 3B
GENTRY PACIFIC, LTD. PUMPAGE
PALM VILLA 2 WELL (Well No. 2001-08)

MONTHLY VALUES  REQUESTED AMOUNT  CHLORIDE LEVEL

EXHIBIT 3D
GENTRY PACIFIC, LTD. PUMPAGE
PALM COURT 3 WELL (Well No. 2002-12)

DATE (Latest Data 12/93)

PUMPAGE (mgd)

CHLORIDE (mg/l)

MONTHLY VALUE — 12-MAV — REQUESTED AM — CHLORIDE LEVEL

EXHIBIT 3E
STATE HFCD EWA-CAPROCK PUMPAGE
KAPOLEI WELLS (WELL NOS. 2003-01 to 05)

EXHIBIT 3F
<table>
<thead>
<tr>
<th>APPLICANT</th>
<th>WELL NO.</th>
<th>WELL NAME</th>
<th>APPROVAL</th>
<th>MGD</th>
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<td><strong>ISLAND OF OAHU</strong></td>
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<td><strong>Aquifer System: PUULOA</strong></td>
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<tr>
<td>C&amp;C OF HONOLULU DAM</td>
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<td>HONOLULU STP 1</td>
<td>03/15/90</td>
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<td>HONOLULU STP 2</td>
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<td>2001-06</td>
<td>PALM VILLA 1</td>
<td>09/13/89</td>
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<td>GENTRY DEVELOPMENT CORP.</td>
<td>2001-02</td>
<td>EVA GENTRY</td>
<td>09/27/88</td>
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<td>HAWAII PRINCE GOLF CLUB</td>
<td>1902-02</td>
<td>EP 32</td>
<td>10/19/88</td>
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<td>OAHU SUGAR CO., LTD.</td>
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<td>OAHU SUGAR CO., LTD.</td>
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<td>SOGO HAWAII, INC.</td>
<td>1900-21</td>
<td>PUULOA GC 1RR</td>
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<td>U.S. FISH &amp; WILDLIFE</td>
<td>2101-14</td>
<td>HONOLULU UNIT</td>
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<td><strong>16 Permits Totaling</strong></td>
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<td>18.670</td>
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**Aquifer System: KAPOLEI**

<table>
<thead>
<tr>
<th>APPLICANT</th>
<th>WELL NO.</th>
<th>WELL NAME</th>
<th>APPROVAL</th>
<th>MGD</th>
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<tr>
<td>FINANCE REALTY</td>
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<td>03/15/90</td>
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**STATEWIDE THERE ARE 2 PERMITS TOTALING 1.150**
### TABLE 1. PUU LOA AQUIFER SYSTEM

<table>
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<tr>
<th>Description</th>
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<tr>
<td>Sustainable Yield Estimate:</td>
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<td>Less: Other Existing Permits:</td>
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<tr>
<td>Current Available Allocation:</td>
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<td>Less: Renewal Requests</td>
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<td>Less: Requests for new uses:</td>
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<tr>
<td>Total</td>
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<tr>
<td>Plus: Future revocation (1902-01)</td>
<td>4.160*</td>
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<tr>
<td>Plus: Total of other OSCO permits</td>
<td>12.034</td>
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<tr>
<td>Potential available when OSCO ceases operations</td>
<td>9.895</td>
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</table>

* Control of well reverts back to Haseko in October 1994 when lease to OSCO expires.
all the upslope surface runoff for recharge as well. In short, HFDC has provided for perpetual prudent resource management through conservative use and through thoughtful planning for continued replenishment of the aquifer.

HFDC seeks the reasonable ability to transfer [the State's] correlative rights with respect to continued permanent use of the caprock wells in order to accomplish its mission.

Your thoughtful consideration and expeditious response to this request will be greatly appreciated. If there are any questions please call me at 587-0640.

Sincerely,

[Signature]

JOSPEH V. CARANT
Executive Director
ultimate home owners and in all probability a segment of "affordable" purchasers would have been displaced. The golf course provides a viable economic, as well as technical, solution to the drainage requirements of this "affordable housing" Master Planned Community in addition to recharging the caprock aquifer with all onsite surface runoff and all offsite upslope surface runoff.

The Commission has previously established a precedent by ruling and granting preference to the HFDC in allocating potable water for the State of Hawaii's "affordable" housing projects.

2. The sale of the Kapolei Golf Course is essential to the mission of HFpC. HFpC is a state created agency whose sole existence is predicated on providing "affordable housing" for the people of the State of Hawaii. HFpC is a "collateral" agency to the Department of Land and Natural Resources (DLNR), Commission on Water Resource Management, and as such the strategic interests of the DLNR/CWRM and HFpC are somewhat common in nature and the overall interests of the State will be best served with the successful sale of the Kapolei golf Course.

The sale of the Kapolei Golf Course will replenish monies into the Homes Revolving Fund which is essential to the continued mission of HFDC in the production of "affordable housing" as it relates to the State's Comprehensive Housing Strategy.

3. Permanent "conditional" use is justifiably reasonable and prudent. Until such time as the CWRM can reasonably determine the future sustainable yield of the caprock aquifer, and as long as the continued use of HFDC's wells do not significantly diminish the calculated sustainable yield, continued use of the caprock wells should be considered as a reasonable request. As the CWRM currently permits use for salt water wells, salinity is of no concern except to the user; therefore, health, safety, or permanent environmental damage would be the normal concerns that would preclude issuance of permanent use permits. Also, and as previously mentioned, HFDC has invested literally millions of dollars into the development of a "closed loop" water resource management system which replenishes the caprock aquifer with not only the onsite generated surface runoff, but also by capturing
Mr. Keith W. Ahue
Department of Land and Natural Resources
Commission on Water Resources Management
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Ahue:

Thank you for the opportunity to review the water use permit application for Haseko (Ewa), Inc. for Well 1902-01, EP 27.

The Office of Hawaiian Affairs urges the Commission on Water Resource Management to halt the granting of this and all water use permits concerning water presently allocated to sugarcane lands. In dealing with the issue of water resources being released as the sugarcane industry phases out, the Commission must produce a comprehensive long-term plan which envisions the allocation of water reserves for groups which presently have virtually no access to existing water resources. Without that plan, there is a real danger that the present vacuum in land and water use planning could provide ripe opportunities for people and organizations seeking water use monopoly.

Sincerely yours,

Dante K. Carpenter
Administrator

LM:lm
Ms. Rae M. Loui, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Loui:

Subject: Amended Request for Extension of Water Use Permits
Ewa Caprock Water Management Area
Kapolei Irrigation Wells A, B, C, D, & E
(Wells Nos.: 2003-01 to 2003-05)

The Housing Finance and Development Corporation (HFDC) herewith respectfully requests that HFDC's prior request for extension of well permits dated April 15, 1994, be amended as follows:

From: A request for extension for a period of twelve months from April 27, 1994 until April 27, 1995.

To: A request for a permanent "conditional" use permit, until such time as the Commission on Water Resource Management (CWRM) considers a "viable alternative source" of non-potable water is readily available for use, or that continued use of the caprock wells presently in use by HFDC is detrimental to the long term sustainable yield of the Kapolei Caprock Aquifer.

It is presently HFDC's understanding that a "viable alternative source" of non-potable water is defined as: 1) Availability of Waiahole Ditch water within an economically obtainable distance to the user, or 2) Availability of "R-2" classified wastewater, from Honolulu WWTP, within an economically obtainable distance to the user and at an economically justifiable usage cost.
This request for an amendment to our application is precipitated by the following circumstances:

1. On June 9, 1994, HFDC's Board of Directors preliminarily approved the Kapolei Peoples, Inc. ("KPI") as the purchaser of the Kapolei Golf Course. KPI was the only party who submitted a proposal for the purchase of the Kapolei Golf Course and is ready, willing, and able to consummate the sale.

2. On June 22, 1994 the Executive Director of HFDC and staff met with the attorney for KPI to discuss the conditions of sale as proposed by KPI. The most significant condition proposed by the prospective purchaser was for a permanent commitment for 1.0 million gallons per day of non-potable irrigation water. This condition of sale, if not overcome, will prevent any further negotiation of a sales agreement between HFDC and KPI. Simply stated, if irrigation water cannot in some form be guaranteed to the prospective purchaser, there will be no sale.

3. HFDC is currently operating the wells on annual renewable "temporary use permits" which condition is unacceptable to the purchaser, KPI.

In support of the above stated request for a "conditional" permanent permitted use, and as additional historical and general information, the following facts are submitted for your consideration:

1. The Kapolei Golf Course is an "affordable housing" related project to the Villages of Kapolei Master Planned Community. The golf course serves as an integral major component in the overall master drainage system for the Villages of Kapolei (Villages), a State of Hawaii "affordable housing" project. The housing Villages themselves could not have been developed without the construction of the golf course retention/detention basin. In addition to the unique "closed loop" aquifer recharge aspects of the drainage system, the excavation of the golf course provided 2.5 million cubic yards of free fill-material required to remove approximately 1/3 of the Villages from a flood inundation zone. An alternative drainage system could have been developed, but not without tremendous additional cost to the development of the Villages. The added costs would have been passed on to the
Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Applications for Water Use Permits and
Well Construction/Pump Installation Permits
Ewa Caprock Ground Water Management Area, Oahu

Applicant: Landowner:

(Well No. 1905-08 & 10)
The Estate of James Campbell
Same

(Well Nos. 2003-01 to 05)
State of Hawaii, Housing Finance & Dev. Corp.
Same

(Well Nos. 1900-02 & 17 to 20, 1901-03)
Hawaii Prince Golf Club
Same

(Well Nos. 2001-03 to 05,07,08 & 2002-12)
Gentry Hawaii, Ltd.
Same

(Well No. 2001-09 & 10)
Gentry Development Corp.
Same

(Well No. 1902-01)
Haseko (Ewa), Inc.
Same

Background

The boundaries of the brackish Ewa Caprock Aquifer were officially adopted by
the Commission on March 3, 1993, without any sustainable yield estimate. In the 1988-
1992 timeframe, permits totalling 19.524 million gallons per day (mgd) were awarded
mainly to existing irrigation uses (eg. Oahu Sugar Co.). Other permits totalling 39.608
mgd were for various salt water and highly brackish to saline water uses (chlorides >
1,000 MG/L) at the western end of the aquifer.

To satisfy the needs of new developments in the Kapolei and Pualoa areas of the
caprock (Exhibit 1), temporary water use permits not exceeding one year were granted to
the applicants listed in Exhibit 2. These temporary permits expired on April 28, 1994.
At the May 18, 1994 Commission meeting, action on all pending applications were
deferred to allow applicants an additional thirty (30) days to comply with the conditions of
the temporary permits. These conditions were met within the specified deadline, and with
the exception of the City Dept. of Housing and Community Development, all applicants
Chairperson and Members
Commission on Water Resource Management

July 13, 1994

have submitted requests for renewal of the allocations described in their expired temporary permits.

In addition, three new applications for future uses of caprock water require action by the Commission. Haseko (Ewa), Inc. submitted a completed application on May 18, 1994 for a new water use from an existing caprock well. The other two applications were filed by the Gentry Development Corp. for new wells, pumps, and future water uses. One of these applications was deferred at the April 28, 1994 Commission meeting because consistency with county zoning had not been established. The second Gentry application on file was completed on June 9, 1994. Specific information regarding the sources, uses, notifications, objections, and field investigation(s) are described in Attachment A and the attached exhibits.

Analysis & Issues

The current guideline used for sustainable yield for water suitable for irrigation uses (chlorides < 1,000 MG/L) is 21 mgd. After cessation of sugarcane operations, the sustainable yield will be reduced to 16 mgd. Although Yuen & Associates, Inc. (1989) made these estimates based on three aquifer systems (Malakole, Puuloa, and Kapolei), the Commission did not officially adopt the separate aquifer systems. If the sustainable yield were divided between the three aquifer systems, the Puuloa Aquifer System may be presently over-allocated. Tables 1 & 2 show current allocations and pending applications for water use permits in relation to the unofficial sustainable yield estimates for the Puuloa and Kapolei Aquifer Systems.
TABLE 1. PUULOA AQUIFER SYSTEM

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PUULOA AQUIFER SYSTEM (mgd)</th>
<th>12-MAY (mgd)</th>
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<tr>
<td>Sustainable Yield Estimate</td>
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<td>Available Allocation</td>
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<td>Expired Temporary Permits:</td>
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<td>Hawaii Prince Golf Club</td>
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<td>(EP 22 &amp; Wells 1 to 5)</td>
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<td>(Golf Villa 1)</td>
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<td>(Palm Villa 2)</td>
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<td>(Palm Court 3)</td>
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<td>(Soda Creek III)</td>
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<td>(Temporary Irrigation)</td>
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<td>(Haseko Well No. 1)</td>
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<td>Pending Incomplete Applications:</td>
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<td>Haseko (Ewa), Inc. (Ewa Marina)**</td>
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* Refer to Exhibit 4 for a listing of other existing permits.

** Includes 0.9 mgd prior permitted use for Hawaii Prince Golf Club (see Exhibit 4).

*** Proposed Ewa Marina will result in a permanent reduction in storage capacity.

See supplemental Table 1. (attached)
TABLE 2. KAPOLEI AQUIFER SYSTEM

<table>
<thead>
<tr>
<th>ITEM</th>
<th>KAPOLEI AQUIFER SYSTEM (mgd)</th>
<th>12/MAY (mgd)</th>
</tr>
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<tr>
<td>Sustainable Yield Estimate</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Less: Other Existing Permits*</td>
<td>(1.150)</td>
<td>0.000</td>
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<tr>
<td>Available Allocation</td>
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<td>Expired Temporary Permits:</td>
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<td></td>
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<tr>
<td>Campbell Estate (Kapolei Irr I)</td>
<td>(1.796)</td>
<td>0.879</td>
</tr>
<tr>
<td>State HFDC (Kapolei Irr A,B,C,D,E)</td>
<td>0.302</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>1.494</td>
<td>0.879</td>
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</table>

The available data on water quality and the effects of pumpage is limited. A network has not yet been established, and the data from the applicants is insufficient to determine impacts, let alone predict impacts. The Campbell Estate has proposed to construct a monitor well to collect data that will provide greater insight on the behavior and response of the aquifer. Other applicants should also be motivated to collect and contribute data for this type of analysis.

Given the uncertainties with respect to the present sustainable yield of the caprock aquifer and the impacts of land use changes on future water availability, an important policy matter is the use of reclaimed water. How much should the uncertainty in caprock water availability drive the encouragement of the use of reclaimed water?

At present, reuse water appears to be the most promising and practical solution in the long term. However, because additional treatment, infrastructure development, modification of governmental policies and regulations, and other factors must be worked out before this source may be utilized, reclaimed effluent is not a solution in the short term.

One of the conditions of the temporary permits was to develop a joint plan for conversion to an alternate nonpotable source. Reclaimed water from Honolulu Wastewater Treatment Plant was identified by all applicants as a potential nonpotable source. Other sources that were identified include Waiahole Ditch water and basal aquifer water. Efforts to identify and jointly convert to an alternate nonpotable source will be directed and coordinated by staff. However, the applicants must actively participate and cooperate in this process.

To address the expected increase in nonpotable water demand for urban uses, the Commission has hired a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. However, the scope of the work is broad and must be supported by the individual plans and programs of the applicants.

In the interim, staff feels that existing and authorized planned developments in the Ewa area should be supported, provided that the conditions for a water use permit set forth in §174C-49 are successfully met. There is clearly a need to develop a long-range plan and organization, and all decisions made in the interim should count towards this goal.

Issues related to the pending requests for temporary permit renewals are
Chairperson and Members
Commission on Water Resource Management

July 13, 1994

summarized as follows (source locations are shown in Exhibits 1A to 1B, monthly water use graphs are shown in Exhibits 3A to 3F):

1. **Hawaii Prince Golf Club** - Average use reported by the Hawaii Prince Golf Club has exceeded permitted use for the last seven months (Exhibit 3A). However, because usage is estimated based on the pump capacities of their six wells (Exhibit 1A), reported usage is most likely over-estimated. Contracts have been awarded to install flow meters in each of the wells, and usage will continue to be monitored over the next year.

Higher than average usage may be attributed to large evaporative losses from the ten interconnected lakes, which have a total surface area of 32 acres. The lakes were designed to function as necessary storage facilities and also provide golf course water features. It is estimated that roughly 150,000 gallons per day (gpd) are lost to evaporation. Seepage is minimal, as all lakes are lined. The build-up of salts in the soils is a very real and legitimate concern, and regular over-watering is necessary to leach the salts. In the past, the Commission has allocated extra water to address this problem.

The Hawaii Prince is actively engaged in working towards more efficient utilization of their water supplies. Replanting on fifty acres is scheduled and, beginning next month, wetting agents will be injected into the soils twice each month. Also, some perimeter areas are no longer irrigated. It is projected that the allocation described in the expired temporary permit plus a 10% increase above their total permitted use will be sufficient.

2. **Gentry Pacific, Ltd.** - Although the Geiger Apartment and Soda Creek III wells have not been used to date, well drilling is completed and pumps have been ordered and are expected to be operational within three to five weeks.

3. **Campbell Estate** - No usage of the well has been reported to date. However, a contract is being finalized to outfit the wells with pumps and contracts will be issued shortly for transmission mains to tie the pumps and well complex to existing nonpotable lines. It is expected that pumpage will begin by September 1994.

4. **State Housing Finance and Development Corp.** - There are no issues related to this application. The request for temporary conditional use permit (attached).

A summary of new applications is provided as follows:

1. **Gentry Development Corp.** - Applications have been submitted for two new wells for future irrigation uses.

The Fort Weaver Apt. Well will be used to supply the first phase of Gentry's Fort Weaver Apt. project and the adjacent highway landscaping. The requested allocation of 48,400 gpd will be used for irrigation of 7.8 acres.

The application for Gentry's Temporary Irrigation Well was originally submitted as a request for irrigation of a future golf course site. However, zoning for the golf course has not been approved and the revised application now indicates use will be for permanent and temporary landscape irrigation. The requested allocation is for 238,000 gpd to used on a total of 43.4 acres. The proposed well is a skimming well equipped with 2 pumps with capacities of 200 gallons per minute.

One issue with these applications is that estimated demands (5,400 and 6,200 gpd/acre) exceeds that determined by staff to be reasonable for this type of use (3,000 gpd/acre). Because the applicants' projected demands varied widely and
lacked consistency, staff used information from the Hawaii Water System Standards 1985, county consumption guidelines, discussions with other government agencies for dust control, and existing water use report information for golf courses in the Ewa area to derive estimates for different types of uses that are considered reasonable, fair, and consistent. Previous allocations for the temporary permits were based on these estimates.

The conservation of water should be made a priority, and staff feels applicants should be encouraged to develop and adhere to plans and programs designed to mitigate the dry climate and conserve the available water resources. Because these uses may potentially be in competition, an equitable method for allocating water is necessary.

These applications have been reviewed by the Mayor’s Office, the Board of Water Supply, the Dept. of General Planning, the Department of Land Utilization, the Dept. of Health, the Dept. of Hawaiian Home Lands, the Office of Hawaiian Affairs, and all the division within the State Dept. of Land and Natural Resources. Because no objections to these applications were submitted, staff finds that the conditions for a water use permit have been met, provided that the allocation approved is reasonable for this type of use.

This submittal was finalized on the morning of the July 7, 1994 deadline for filing objections to the Temporary Irrigation Well applications. Any objections received by the deadline will be brought forth during the Commission meeting.

2. **Haseko (Ewa), Inc.** - The application for the Haseko Well No. 1 specifies that the water will be used for golf course, landscape, and maintenance irrigation and for dust control on surrounding fallow areas, formerly in sugarcane. The projected demands are consistent with staff’s estimates for these uses.

The water will be drawn from a well currently being used by Oahu Sugar Co. The current allocation for the well is 4.16 mgd. When the lease expires in October 1994, control of the well will revert back to Haseko. The present allocation will be reduced from 4.16 mgd to 1.5 mgd. Therefore, approval of this application will not result in greater draw from the system.

The application was sent for review by the Mayor’s Office, the Board of Water Supply, the Dept. of General Planning, the Department of Land Utilization, the Dept. of Health, the Dept. of Hawaiian Home Lands, the Office of Hawaiian Affairs, and all the division within the State Dept. of Land and Natural Resources. Because no objections have been submitted, staff finds that the conditions for a water use permit have been met.

This submittal was finalized on the morning of the July 7, 1994 deadline for filing objections to the application. Any objections received by the deadline will be brought forth during the Commission meeting.

**RECOMMENDATION**

Staff recommends that the Commission:

1. Approve the issuance of temporary water use permits which shall be valid until July 12, 1995, to the applicants with completed applications listed in Tables 1 and 2. The permits shall be for allocations described in Tables 1 and 2, for the reasonable and beneficial uses described in the applications, and from the wells specified in their applications, except for the Gentry Development Corp. and the Hawaii Prince Golf Club.

2. Approve the issuance of a well construction permit and a temporary water use permit for the Haseko (Ewa), Inc. for Well No. 1, in compliance with the conditions and limitations specified in the application.
Chairperson and Members
Commission on Water Resource Management
July 13, 1994

permit to the Gentry Development Corp. for the reasonable and beneficial use of 23,400 gallons per day of nonpotable water from the Fort Weaver Apt. Well (Well No. 2001-09) for landscape and roadway irrigation use on 7.8 acres.

a. The well construction permit shall be subject to the standard conditions listed in Attachment D.

b. The pump installation permit shall be approved administratively pending the results of the drilling and testing.

c. The temporary water use permit shall be valid until July 12, 1995.

3. Approve the issuance of a well construction permit and a temporary water use permit to the Gentry Development Corp. for the reasonable and beneficial use of 130,200 gallons per day of nonpotable water from the Temporary Irrigation Well (Well No. 2001-09) for permanent and temporary landscape irrigation on 43.4 acres.

a. The well construction permit shall be subject to the standard conditions listed in Attachment D.

b. The pump installation permit shall be approved administratively pending the results of the drilling and testing.

c. The temporary water use permit shall be valid until July 12, 1995.

Approve the issuance of a temporary water use permit which shall be valid until July 12, 1994, to the Hawaii Prince Golf Club, for the reasonable and beneficial use of 129,600 per day of nonpotable water from the combined pumpage of Wells 1 to 5 and EP 22 (Well Nos. 1900-02, 17 to 20 & 1901-03), for leaching salts and supplemental irrigation water for the golf course.

a. Flow meters shall be installed in each well within three months from the date of this submittal.

5. Require that applicants cooperate with the Commission’s initiative in the development of the Nonpotable Water Master Plan for Central and Leeward Oahu.

6. Require that all temporary permits be subject to the standard conditions of a water use permit listed in Attachment B and the Conservation conditions listed in Attachment C.

Respectfully submitted,

[Signature]
KEITH W. AHUE, Chairperson

APPROVED FOR SUBMITTAL:
[Signature]
KEITH W. AHUE, Chairperson

Reporting back in 6 weeks re: actual use.

RAE M. LOUI
Deputy Director

PREPARED:
[Signature]
KIM T. Sakoda

MARJORIE, S.C.L.D.F.

Racing - water use...time...to organize...synchronize...problem...to have compliance...importance...review...year.

Attach.

APPENDIXʇ

Chairperson and Members
Commission on Water Resource Management July 13, 1994

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KEITH W. AHUE, Chairperson

APPROVED FOR SUBMITTAL:
[Signature]
KEITH W. AHUE, Chairperson

Reporting back in 6 weeks re: actual use.

RAE M. LOUI
Deputy Director

PREPARED:
[Signature]
KIM T. Sakoda

MARJORIE, S.C.L.D.F.

Racing - water use...time...to organize...synchronize...problem...to have compliance...importance...review...year.

Attach.

APPENDIXʇ
**WATER USE PERMIT DETAILED INFORMATION**

**Source Information**

**AQUIFER:** Ewa Caprock Aquifer System, Oahu  
- Sustainable Yield: NA mgd  
- Existing Water Use Permits: 19.82 mgd  
- Available Allocation: NA mgd  
- Total of other pending allocations: NA mgd

<table>
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<tr>
<th>WELL</th>
<th>Location</th>
<th>Year Drilled</th>
<th>Casing Diameter</th>
<th>Elevations (msl = 0 ft.)</th>
<th>Water Level</th>
<th>Ground</th>
<th>Bottom of Solid Casing</th>
<th>Bottom of Perforated</th>
<th>Bottom of Open Hole</th>
<th>Total Depth</th>
<th>Grouted Annulus Depth</th>
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<td>34 ft.</td>
<td>4 ft.</td>
<td>14 ft.</td>
<td>-20 ft.</td>
<td>54 ft.</td>
<td>28 ft.</td>
<td>100 gpm</td>
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<td></td>
<td>Fort Weaver Apt. Well (Well No. 2001-09)</td>
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<td>34 ft.</td>
<td>4 ft.</td>
<td>14 ft.</td>
<td>-20 ft.</td>
<td>54 ft.</td>
<td>28 ft.</td>
<td>100 gpm</td>
</tr>
<tr>
<td>2.</td>
<td>Haseko Golf Course site, Oahu, TMK:9-1-12:5</td>
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<td>2 ft.</td>
<td>5 ft.</td>
<td>NA ft.</td>
<td>NA ft.</td>
<td>-3 ft.</td>
<td>8 ft.</td>
<td>NA ft.</td>
<td>NA gpm</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>NA in.</td>
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<td>NA ft.</td>
<td>NA ft.</td>
<td>NA ft.</td>
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<td>NA ft.</td>
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<td>3.</td>
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<td>NA ft.</td>
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<td>8 ft.</td>
<td>NA ft.</td>
<td>NA gpm</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>NA in.</td>
<td>Haseko Golf Course site, Oahu, TMK:9-1-12:5</td>
<td>1964</td>
<td>2 ft.</td>
<td>5 ft.</td>
<td>NA ft.</td>
<td>NA ft.</td>
<td>-3 ft.</td>
<td>8 ft.</td>
<td>NA ft.</td>
<td>NA gpm</td>
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</tbody>
</table>

**ATTACHMENT A**
Use Information

1. Quantity Requested: 48,400 gallons per day.
   Proposed Type of Water Use: Landscape irrigation for 7.8 acres.
   Place of Water Use: Ewa by Gentry, Oahu, at TMK: 9-1-61:2&8
   Reported Water Usage: NA mgd
   Nearby Similar Water Usage: 3,000 gpd

2. Quantity Requested: 238,000 gallons per day.
   Proposed Type of Water Use: Landscape irrigation for 43.4 acres.
   Place of Water Use: Ewa by Gentry, Oahu, at TMK: 9-1-61:2&54
   Reported Water Usage: NA mgd
   Nearby Similar Water Usage: 3,000 gpd

3. Quantity Requested: 1,500,000 gallons per day.
   Proposed Type of Water Use: Golf course, roadway, and maintenance irrigation; dust control.
   Place of Water Use: OSCo field 88, Oahu, at TMK: 9-1-12:5,6&7
   Reported Water Usage: 6.551 mgd
   Nearby Similar Water Usage: 1,000 to 4,000 gpd/acre

Ewa Caprock Aquifer System
   Current 12-Month Moving Average Withdrawal: 15.131* mgd

* Does not include withdrawals at wells with expired temporary permit or withdrawals from Malakole area.

Nearby Surrounding Wells and Other Registered Ground Water Use

The Gentry developments are proposing to use other nearby wells in the vicinity of Well Nos. 2001-09 & 10. By distributing the pumpage over a large area, as opposed to one central pumping station, impacts to the aquifer should be minimized; other benefits are clearly derived from this strategy of well development. There are no other wells within a mile of Haseko’s Well No. 1. The 1992 Draft of the Oahu Water Management Plan did not provide an estimate for 1990 withdrawals.
Chairperson and Members
Commission on Water Resource Management
July 13, 1994

Public Notice

In accordance with HAR §13-171-17, a public notice was published in the Star-Bulletin on June 15, 1994 and June 22, 1994 and copies of the notice were sent to the Mayor's office and the Board of Water Supply. Additional notice copies were sent to the County Council and Department of Water Supply. Copies of the completed application were sent to the Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, Aquatic Resources & Historic Preservation Divisions of the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by July 7, 1994.

Objections

The public notice specifies that an objector meet the following requirements: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; (3) state all grounds for objections to the proposed permits, (4) provide a copy of the objection letter(s) to the applicant, and (5) submit objections meeting the previous requirements to the Commission by July 7, 1994.

To the best of staff's knowledge there are no objectors who have property interest within the Ewa Caprock Aquifer System or who will be directly and immediately affected by the proposed water use.

Briefs in Support

Responses to objections, or briefs in support, regarding the application are required to be filed with the Commission ten (10) days after an objection is filed and, presumably, copies are served to the applicant. No briefs in support were filed with the Commission.

Field Investigation

Gentry's water sources and proposed uses were not investigated as the wells have not been drilled. Staff is in the process of verifying OSCo well sources.
STANDARD WATER USE PERMIT CONDITIONS

1. The ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "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 not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." (HAR §13-171-2).

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HAR §13-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

4. The ground water use approved must not interfere with surface or ground water rights or reservations.

5. The ground water use approved must not interfere with interim or permanent instream flow standards or policies as determined by the Commission. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use permit is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and staff submittal approved by the Commission at its July 13, 1994 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

9. The water use permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect water sources in quantity, quality, or both;
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June 1987, shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Homes, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commissions's police powers under law as may be required.

ATTACHMENT B
Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a monthly basis in accordance with the Commission's September 16, 1992 action on reporting requirements;

12. The water use permit shall be subject to the Commission's periodic review of the applicable aquifer's sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the Ewa Caprock Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission's prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

14. The use(s) authorized by law and by the water use permit do not constitute ownership rights.

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies' permits and conditions pertaining to water use or the water resource.

16. The permittee shall prepare and submit a water shortage plan within 30 days of issuance of the permit to assist the Commission in fulfilling HAR §13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Ewa Caprock Ground Water Management Area.

17. The water use permit granted shall be a temporary permit valid until July 12, 1995.

18. The water use permit shall be issued only after AG review.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies to Stream Protection and Management (SPAM), as well as legislative mandates to protect stream resources.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
STANDARD WELL CONSTRUCTION/PUMP INSTALLATION PERMIT CONDITIONS

1. The Commission shall be notified before work commences.

2. The well construction/pump installation permit shall be for construction, testing, and installation of a pump of capacities specified in the application, or less, pump in the well, as determined by the pumping test results. The applicant shall coordinate with the Commission and conduct a pumping test in accordance with the protocol established by the Commission. A means to accurately measure water levels, acceptable to the Commission, shall also be provided. The applicant shall submit to the Commission the test results and proposed permanent pump information, based on the test, for approval by the Chairperson. No permanent pump may be installed and no water used from the well without the Chairperson's approval.

3. The proposed use shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct and pump water from a well shall not constitute a determination of correlative water rights. The permittee is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

4. The applicant shall comply with all applicable laws, rules, and ordinances.

5. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

6. The well construction/pump installation permit may be revoked if work is not started within six (6) months after the methodology and analysis of the test results are agreed upon. The work proposed in the well construction/pump installation permit application shall be completed within two years from the date of permit issuance.

7. That the pumping test shall follow the aquifer pump testing protocol established by the Commission. Prior to conducting the aquifer pump test, the applicant shall mutually agree with the Commission staff to a methodology and analysis of the test results.

8. The following shall be submitted to the Commission within thirty (30) days after completion of work:
   a. Well completion report.
   b. Elevations of well (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.

9. The well shall not be used for drinking water unless it is properly tested and approved by the State Department of Health.

10. The well construction/pump installation water use permit application and staff submittal approved by the Commission at its July 13, 1994 meeting are incorporated into the permit by reference.

11. The permit shall be subject to review by the Attorney General.
<table>
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<tr>
<th>APPLICANT</th>
<th>WELL NO.</th>
<th>WELL NAME</th>
<th>APPROVAL</th>
<th>WP mgd</th>
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<td>Aquifer System: KAPOLEI</td>
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<tr>
<td>CAMPBELL ESTATE</td>
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<td>Aquifer System: PUULOA</td>
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<td></td>
<td></td>
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<tr>
<td>HAWAII PRINCE GOLF CLUB</td>
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6 Permits Totaling 1.706

14 Permits Totaling 1.771

20 Permits Totaling 3.567
HAWAII PRINCE G.C. COMBINED PUMPAGE
(WELL NOS. 1900-02, 17 to 20)

EXHIBIT 3A
EXHIBIT 3B
EXHIBIT 3C
GENTRY PACIFIC, LTD. PUMPAGE
PALM COURT 3 WELL (Well No. 2002-12)

MONTHLY VALUE  12-MAV  REQUESTED AM  CHLORIDE LEVEL

EXHIBIT 3E
STATE HFCD EWA-CAPROCK PUMPAGE
KAPOLEI WELLS (WELL-NOS. 2003-01 to 05)

DATE (Latest Data)

PUMPAGE (mgd)

MONTHLY VALUES  12-MAV  REQUESTED AMT

EXHIBIT 3F
## ISLAND OF OAHU

### Aquifer System: PUULOA

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Well No.</th>
<th>Well Name</th>
<th>Approval Date</th>
<th>GPD</th>
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<tbody>
<tr>
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<td>HONOLULI STP 1</td>
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<td>GENTRY DEVELOPMENT CORP.</td>
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<td>U.S. FISH &amp; WILDLIFE</td>
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16 Permits Totaling 18.670

### Aquifer System: KAPOLEI

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<th>Applicant</th>
<th>Well No.</th>
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2 Permits Totaling 1.150

STATEWIDE THERE ARE 2 PERMITS TOTALING 1.150
TABLE 1. PUULOA AQUIFER SYSTEM

<p>| | |</p>
<table>
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<td>Sustainable Yield Estimate:</td>
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<td>Less: Other Existing Permits:</td>
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<td>Current Available Allocation:</td>
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<td>Less: Renewal Requests</td>
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<td>Less: Requests for new uses:</td>
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<td>Total</td>
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<tr>
<td>Plus: Future revocation (1902-01)</td>
<td>4.160*</td>
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<tr>
<td>Plus: Total of other OSCO permits</td>
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Potential available when OSCO ceases operations | 9.895

* Control of well reverts back to Haseko in October 1994 when lease to OSCO expires.
all the upslope surface runoff for recharge as well. In short, HFDC has provided for perpetual prudent resource management through conservative use and through thoughtful planning for continued replenishment of the aquifer.

HFDC seeks the reasonable ability to transfer [the State's] correlative rights with respect to continued permanent use of the caprock wells in order to accomplish it's mission.

Your thoughtful consideration and expeditious response to this request will be greatly appreciated. If there are any questions please call me at 587-0640.

Sincerely,

[Signature]

JOSEPH K. CONANT
Executive Director
ultimate home owners and in all probability a segment of "affordable" purchasers would have been displaced. The golf course provides a viable economic, as well as technical, solution to the drainage requirements of this "affordable housing" Master Planned Community in addition to recharging the caprock aquifer with all onsite surface runoff and all offsite upslope surface runoff.

The Commission has previously established a precedent by ruling and granting preference to the HFDC in allocating potable water for the State of Hawaii's "affordable" housing projects.

2. The sale of the Kapolei Golf Course is essential to the mission of HFDC. HFDC is a State created agency whose sole existence is predicated on providing "affordable housing" for the people of the State of Hawaii. HFDC is a "collateral" agency to the Department of Land and Natural Resources (DLNR), Commission on Water Resource Management, and as such the strategic interests of the DLNR/CWRM and HFDC are somewhat common in nature and the overall interests of the State will be best served with the successful sale of the Kapolei golf course.

The sale of the Kapolei Golf Course will replenish monies into the Homes Revolving Fund which is essential to the continued mission of HFDC in the production of "affordable housing" as it relates to the State's Comprehensive Housing Strategy.

3. Permanent "conditional" use is justifiably reasonable and prudent. Until such time as the CWRM can reasonably determine the future sustainable yield of the caprock aquifer, and as long as the continued use of HFDC's wells do not significantly diminish the calculated sustainable yield, continued use of the caprock wells should be considered as a reasonable request. As the CWRM currently permits use for salt water wells, salinity is of no concern except to the user; therefore, health, safety, or permanent environmental damage would be the normal concerns that would preclude issuance of permanent use permits. Also, and as previously mentioned, HFDC has invested literally millions of dollars into the development of a "closed loop" water resource management system which replenishes the caprock aquifer with not only the on-site generated surface runoff, but also by capturing
July 05, 1994

Mr. Keith W. Ahue  
Department of Land and Natural Resources  
Commission on Water Resources Management  
P.O. Box 621  
Honolulu, HI 96809

Dear Mr. Ahue:

Thank you for the opportunity to review the water use permit application for Haseko (Ewa), Inc. for Well 1902-01, EP 27.

The Office of Hawaiian Affairs urges the Commission on Water Resource Management to halt the granting of this and all water use permits concerning water presently allocated to sugarcane lands. In dealing with the issue of water resources being released as the sugarcane industry phases out, the Commission must produce a comprehensive long-term plan which envisions the allocation of water reserves for groups which presently have virtually no access to existing water resources. Without that plan, there is a real danger that the present vacuum in land and water use planning could provide ripe opportunities for people and organizations seeking water use monopoly.

Sincerely yours,

[Signature]
Dante K. Carpenter  
Administrator

LM:1m
Ms. Rae M. Loui, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Loui:

Subject: Amended Request for Extension of Water Use Permits
Ewa Caprock Water Management Area
Kapolei Irrigation Wells A, B, C, D, & E
(Wells Nos.: 2003-01 to 2003-05)

The Housing Finance and Development Corporation (HFDC) herewith respectfully requests that HFDC's prior request for extension of well permits dated April 15, 1994, be amended as follows:

From: A request for extension for a period of twelve months from April 27, 1994 until April 27, 1995.

To: A request for a permanent "conditional" use permit, until such time as the Commission on Water Resource Management (CWRM) considers a "viable alternative source" of non-potable water is readily available for use, or that continued use of the caprock wells presently in use by HFDC is detrimental to the long term sustainable yield of the Kapolei Caprock Aquifer.

It is presently HFDC's understanding that a "viable alternative source" of non-potable water is defined as: 1) Availability of Waiahole Ditch water within an economically obtainable distance to the user, or 2) Availability of "R-2" classified wastewater, from Honouliuli WWTP, within an economically obtainable distance to the user and at an economically justifiable usage cost.
This request for an amendment to our application is precipitated by the following circumstances:

1. On June 9, 1994, HFDC's Board of Directors preliminarily approved the Kapolei Peoples, Inc. ("KPI") as the purchaser of the Kapolei Golf Course. KPI was the only party who submitted a proposal for the purchase of the Kapolei Golf Course and is ready, willing, and able to consummate the sale.

2. On June 22, 1994, the Executive Director of HFDC and staff met with the attorney for KPI to discuss the conditions of sale as proposed by KPI. The most significant condition proposed by the prospective purchaser was for a permanent commitment for 1.0 million gallons per day of non-potable irrigation water. This condition of sale, if not overcome, will prevent any further negotiation of a sales agreement between HFDC and KPI. Simply stated, if irrigation water cannot in some form be guaranteed to the prospective purchaser, there will be no sale.

3. HFDC is currently operating the wells on annual renewable "temporary use permits" which condition is unacceptable to the purchaser, KPI.

In support of the above stated request for a "conditional" permanent permitted use, and as additional historical and general information, the following facts are submitted for your consideration:

1. The Kapolei Golf Course is an "affordable housing" related project to the Villages of Kapolei Master Planned Community. The golf course serves as an integral major component in the overall master drainage system for the Villages of Kapolei (Villages), a State of Hawaii "affordable housing" project. The housing Villages themselves could not have been developed without the construction of the golf course retention/detention basin. In addition to the unique "closed loop" aquifer recharge aspects of the drainage system, the excavation of the golf course provided 2.5 million cubic yards of free fill-material required to remove approximately 1/3 of the Villages from a flood inundation zone. An alternative drainage system could have been developed, but not without tremendous additional cost to the development of the Villages. The added costs would have been passed on to the
July 7, 1994

Honorable Keith Ahue, Chairperson  
Board of Land and Natural Resources  
Department of Land and Natural Resources  
State of Hawaii  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Water Use Permit Application  
for Haseko (Ewa), Inc.  
Well No. 1902-01

This is in response to your memorandum of June 21, 1994. We have reviewed the subject application and have the following comments to offer:

- The parcels identified as Tax Map Key 9-1-12: 05, 06, and 07 are designated Park/Golf Course, Park, Preservation, Low Density Apartment, Medium Density Apartment, Commercial, and Commercial-Industrial Emphasis Mixed Use on the Ewa Development Plan Land Use Map (DPLUM).

- The proposed development does not have a drainage master plan approved by the Department of Public Works to handle the runoff of Kaloi Gulch nor on-site surface flows. The proposed golf course for which the water permit is requested would be an integral element of this plan. Since the golf course should not proceed until the drainage is resolved, we believe approval of the water use permit is premature at this time.
Like other applicants for non-potable water in Ewa, the applicant should be required to prepare plans for alternate non-potable water sources. Since this is a new use, it may be desirable to review these plans prior to approval of a permit.

Should you have any questions, please call Eugene Takahashi of our staff at 527-6022.

Sincerely,

ROBIN FOSTER
Chief Planning Officer
TO: ROBIN FOSTER, CHIEF PLANNING OFFICER
DEPARTMENT OF PLANNING

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

SUBJECT: WATER USE PERMIT APPLICATIONS FOR OAHU COUNTRY CLUB WELL NO. 2050-01, HASEKO WELL NO. 1902-01, GENTRY WELL NO. 2001-10, CAMPBELL WELL NO. 4258-09

We have the following comments on water use permits for these wells:

1. Oahu Country Club Well No. 2050-01: The exploratory drilling to develop water from the alluvium and the Nuuanu basalt was unsuccessful. As before, we oppose a water use permit to develop potable water from the basal aquifer for golf course irrigation. We again suggest use of surface water and/or capture of runoff for irrigation.

2. Haseko Inc. Well No. 1902-01: We have no objections to a water use permit for this caprock well.

3. Gentry Development Co. Well No. 2001-10: We do not object to a water use permit for this well except that it should be conditioned on evidence that it does not adversely affect yield or quality of the Department of Parks and Recreation Well No. 2002-13 and Well No. 2002-14.

4. Campbell Estate Well No. 4258-09: We have no objection to a water use permit for this caprock well for aquaculture.

If you have any questions, please call Herbert H. Minakami at 527-6183.

cc: Mayor Frank F. Fasi
Mr. Keith Ahue, Chairperson  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Subject: Water Use Permits for Oahu Country Club Well No. 2051-01, Haseko Well No. [redacted], Gentry Well No. 2001-10, and Campbell Estate Well No. 4258-09

We have the following comments on applications for water use permits for these wells and return the covers appropriately marked and signed:

1. Oahu Country Club Well No. 2051-01: The exploratory well was unsuccessful in development of sufficient water from the alluvium and the Nuuanu basalt. As before, we oppose a water use permit for tapping into the Koolau aquifer and use of potable water for golf course irrigation. We again suggest use of surface water and/or capture of runoff for golf course irrigation.

2. Haseko Inc. Well No. 1902-01: We have no objection to a water use permit for this caprock well.

3. Gentry Development Co. Well No. 2001-01: We do not object to a water use permit for this caprock well except that it should be conditioned on evidence there will be no adverse impact on the quality and quantity of water from the Department of Parks and Recreation Well Nos. 2002-13 and 14.

4. Campbell Estate Well No. 4258-09: We have no objection to a water use permit for this caprock well used for aquaculture.

If you have any questions, please call Herbert H. Minakami at 527-6183.

Very truly yours,

KAZU HAYASHIDA  
Manager and Chief Engineer
TO: Mrs. Hoaliku L. Drake, Director
Department of Hawaiian Home Lands

Dr. Peter A. Sybinsky, Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Mr. Kazu Hayashida, Manager & Chief Engineer
Honolulu Board of Water Supply

Donald A. Clegg, Director
Department of Land Utilization

Robin Foster, Chief Planning Officer
Planning Department

FROM: Keith W. Ahue, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: Herbert H. Minakami Phone: 527-6183

() We have no comments
() We have no objections
() Comments attached
() Additional information requested
() Extended review period requested

Signed: KAZU HAYASHIDA
Manager and Chief Engineer

Date: 7/6/94
Mr. Keith W. Ahue  
Department of Land and Natural Resources  
Commission on Water Resources Management  
P.O. Box 621  
Honolulu, HI  96809

Dear Mr. Ahue:

Thank you for the opportunity to review the water use permit application for Haseko (Ewa), Inc. for Well 1902-01, EP 27.

The Office of Hawaiian Affairs urges the Commission on Water Resource Management to halt the granting of this and all water use permits concerning water presently allocated to sugarcane lands. In dealing with the issue of water resources being released as the sugarcane industry phases out, the Commission must produce a comprehensive long-term plan which envisions the allocation of water reserves for groups which presently have virtually no access to existing water resources. Without that plan, there is a real danger that the present vacuum in land and water use planning could provide ripe opportunities for people and organizations seeking water use monopoly.

Sincerely yours,

Dante K. Carpenter  
Administrator

LM:lm
TO: Mrs. Hoaliku L. Drake, Director  
Department of Hawaiian Home Lands  
Dr. Peter A. Sybinsky, Director  
Department of Health  
Mr. Clayton H. W. Hee, Chairperson  
Office of Hawaiian Affairs  
Mr. Kazu Hayashida, Manager & Chief Engineer  
Honolulu Board of Water Supply  
Donald A. Clegg, Director  
Department of Land Utilization  
Robin Foster, Chief Planning Officer  
Planning Department

FROM: Keith W. Ahue, Chairperson  
Commission on Water Resource Management

SUBJECT: Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: Luis A. Manrique Phone: 589-1935

( ) We have no comments
( ) We have no objections
( X) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: Luis A. Manrique Date: 07/05/94
JUN 21 1994

REF: WRM-KY

TO:  Mrs. Hoaliku L. Drake, Director
     Department of Hawaiian Home Lands

     Dr. Peter A. Sybinsky, Director
     Department of Health

     Mr. Clayton H. W. Hee, Chairperson
     Office of Hawaiian Affairs

     Mr. Kazu Hayashida, Manager & Chief Engineer
     Honolulu Board of Water Supply

     Donald A. Clegg, Director
     Department of Land Utilization

     Robin Foster, Chief Planning Officer
     Planning Department

FROM: Keith W. Ahue, Chairperson
     Commission on Water Resource Management

SUBJECT: Water Use Permit Application
         Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN: ky

Attachments

Response: Contact person: Darrell Yagodich
           Administrator, Planning Office
           Phone: 586-3837

   () We have no comments
   () We have no objections
   () Comments attached
   () Additional information requested -- See attached sheet
   () Extended review period requested

Signed:  Darrell Yagodich Date: 7/4/94
Attachment
Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Haseko (Ewa), Inc., Well No. 1902-01
Gentry Development Co., Well No. 2001-10

Additional information requested:

(1) How does project impact sustainable yield?

(2) How does it conform to an overall strategy for water quality protection for this aquifer?

(3) How does it fit into overall reallocation of land uses over the aquifer?
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Application for Water Use Permit,
Haseko (Ewa), Inc. for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu
Honouliuli, 'Ewa, O'ahu
TMK: 9-1-12:005

Thank you for the opportunity to review this project. The applicant proposes to use water from an existing source. Since an approved permit will not authorize any ground disturbing activities we believe that there will be "no effect" on historic sites.

EJ:jk
TO: Mrs. Hoaliku L. Drake, Director
Department of Hawaiian Home Lands

FROM: Keith W. Ahue, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

Response: Contact person: Bill Ong Phone: 586-4258

We have no comments
() We have no objections
() Comments attached
() Additional information requested
() Extended review period requested

Signed: Bill Ong Date: 7/1/94
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development  

FROM: Rae M. Loui, Deputy Director  

SUBJECT: Request for Comments  
Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: ______________________ Phone: ______________________

( ) We have no comments
( ) We have no objections  
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ______________________ Date: 6/9/94
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Henry Sakuda, Administrator
Division of Aquatic Resources

SUBJECT: Comments on Water Use Permit Application by Haseko (Ewa) Inc. for Well No. 1902-01 in the Puuloa Ground Water Management Area, Oahu

The application requests a transfer in water use from Oahu Sugar Company (OSCO) to Haseko when the OSCO lease with OSCO ends in October. Approximately 1.5 million gallons of pumped brackish ground water currently being used for sugar cane irrigation will be shifted to golf course irrigation, roadway landscaping, and dust control. We have no objections from the aquatic biological resources standpoint.
TO: Aquatic Resources
   Forestry and Wildlife/Natural Area Reserve System
   Historic Preservation
   Land Management
   Office of Conservation and Environmental Affairs
   State Parks
   Water and Land Development

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN: ky

Attachments

Response: Contact person: Phone: 587 0218

We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: Date: 6/28/94
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development  

FROM: Rae M. Loui, Deputy Director  

SUBJECT: Request for Comments  
Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu  

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994. See attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky  
Attachments

Response: Contact person: Wayne Ching  
Phone: 587-0166

☐ We have no comments  
☐ We have no objections  
☐ Comments attached  
☐ Additional information requested  
☐ Extended review period requested

Signed: MICHAEL G. BUCK  
Administrator  
Date: 7/11/94
TO:  
Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM:  
Rae M. Loui, Deputy Director

SUBJECT:  
Request for Comments  
Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response:  
Contact person:  Steve Togawa  
Phone: 587-0385  

( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested

Signed:  
Date: 6/29/94
Mr. Alan Suwa  
Haseko (Ewa), Inc.  
820 Mililani St., Ste. 810  
Honolulu, HI 96813

Dear Mr. Suwa:

Your completed water use permit application for the Haseko Well No. 1 (Well No. 1902-01) was filed on May 18, 1994.

Enclosed is a copy of the public notice for your water use permit application that will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994.

Please be aware that there may be objections to your application. If objections are made, the objector is required to file such objections with the Commission and is also required to send you a copy of the objections.

You, or any other party, may respond to objections by filing a brief in support of your application with the Commission within ten (10) days of the filing of an objection. You, or the other party, must also send a copy of the response to the objector.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI  
Deputy Director

LN:ky

Enc.
PUBLIC NOTICE

Applications for Water Use Permit
Ground Water Management Areas, Oahu

Applications for the following water use permits have been received and are hereby made public in accordance with Department of Land and Natural Resources Administrative Rules 13-171, "Designation and Regulation of Water Management Areas."

OCC Irrigation (Well No. 2050-01)
Applicant: Oahu Country Club
P.O. Box 0
Waipahu, HI 96817
Date Completed Application Received: June 9, 1994
Aquifer: Mauanu System, Honolulu Sector, Oahu
Well Source: OCC Irrigation Well, Well No. 2050-01, at 150 Country Club Rd, Oahu at Tax Map Key: 1-9-6:1
Quantity Requested: 200,000 gallons per day.
Existing Water Use: Irrigation for 187-acre golf course
Place of Water Use: 150 Country Club Rd, Oahu at Tax Map Key: 1-9-6:1

Haseko Well No. 1 (Well No. 1902-01)
Applicant: Haseko (Ewa), Inc.
820 Mililani St., Ste.810
Honolulu, HI 96813
Date Completed Application Received: May 18, 1994
Aquifer: Puuloa System, Ewa Caprock Sector, Oahu
Well Source: Haseko Well No. 1 Well, Well No. 1902-01, at Ewa Marina project site, Oahu at Tax Map Key: 9-1-12:5
Quantity Requested: 1,500,000 gallons per day.
New Water Use: Irrigation for 270-acre golf course, roadway landscape irrigation, and maintenance irrigation/dust control for fallow fields surrounding the golf course area
Place of Water Use: Ewa Marina project site at Tax Map Key: 9-1-12:5,6,7

Gentry Golf Course Irrigation (Well No. 2001-10)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: June 9, 1994
Aquifer: Puuloa System, Ewa Caprock Sector, Oahu
Well Source: Gentry Golf Course Irrigation Well, Well No. 2001-10, at Ewa By Gentry, Oahu at Tax Map Key: 9-1-61:2
Quantity Requested: 238,000 gallons per day.
New Water Use: Temporary irrigation for 31.4-acre sump (proposed golf course site); irrigation for 12 acres landscaped area
Place of Water Use: Ewa By Gentry development at Tax Map Key: 9-1-61:2 & 54
Pacific Sea 4 (Well No. 4258-09)

Applicant: Campbell Estate
828 Fort St., Suite 500
Honolulu, HI 96813

Date Completed Application Received: April 28, 1994

Aquifer: Koolauloa System, Windward Sector, Oahu
Well Source: Pacific Sea 4 Well, Well No. 4258-09, at Kahuku, Oahu at Tax Map Key: 5-6-3:9
Quantity Requested: 2,000,000 gallons per day.

New Water Use: Salt water shrimp aquaculture
Place of Water Use: Kahuku at Tax Map Key: 5-6-3:9

Written objections or comments on the applications for water use permits may be filed by any person who has property interest in any land within the hydrologic unit of the source of water supply, any person who will be directly and immediately affected by the proposed water use, or any other interested person. Written objections shall: (1) state property or other interest in the matter (provide TMK information); (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; and (3) state all grounds for objections to the proposed permits. Written objections must be received by July 7, 1994. Objections must be sent to 1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809 and 2) a copy of the objection letter(s) to the applicant at the above address.

COMMISSION ON WATER RESOURCE MANAGEMENT

RAE M. LOUI for
KEITH W. AHUE
Chairperson

Dated: JUN -9 1994

TO: Interested Parties
FROM: Rae M. Loui, Deputy Director
SUBJECT: Request for Comments
Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994, see attached.

We would appreciate your review of the attached application. Your objections to the proposed permit must be filed by the July 7, 1994 deadline for filing and should be made in accordance with Section 13-171-18 of our Administrative Rules.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: __________________________ Phone: ___________________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: __________________________ Date: _______________
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Commission on Water Resource Management
Honolulu, Hawaii

JUN 21 1994

TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
    Water Use Permit Application
    Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: ________________ Phone: ________________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ____________________________ Date: ________________
TO: Mrs. Hoaliku L. Drake, Director
Department of Hawaiian Home Lands

Dr. Peter A. Sybinsky, Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Mr. Kazu Hayashida, Manager & Chief Engineer
Honolulu Board of Water Supply

Donald A. Clegg, Director
Department of Land Utilization

Robin Foster, Chief Planning Officer
Planning Department

FROM: Keith W. Ahue, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: ________________ Phone: ________________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ____________________________ Date: __________________
Honorable Frank F. Fasi, Mayor  
City & County of Honolulu  
City Hall  
Honolulu, HI 96813  

Attn: Mr. Jeremy Harris  

Dear Mayor Fasi:  

Notice of an Application for a Water Use Permit  
Puuloa Ground Water Management Area, Oahu  

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-171-17(a), we are sending you a copy of the public notice for the water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01, which will be published in the Honolulu Star Bulletin.

In addition, Section 13-171-13(b), of our Administrative Rules, states:

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."

We have attached a copy of the application for your review and would appreciate receiving your comments, within the next sixty (60) days, on whether this water use is consistent with county plans and policies.

Very truly yours,

Keith W. Ahue  
Chairperson  

Enc.
May 17, 1994

Ms. Rae M. Loui  
Deputy Director  
Department of Land and Natural Resources  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, Hawaii  96809

Dear Ms. Loui:

Subject:  Application for a Water Use Permit  
Haseko Well No. 1 (Well No. 1902-01)  
Puuloa Ground Water Management Area, Oahu

The following is the additional information requested in your letter of May 5, 1994 to complete the subject application:

1. Table 1 (attached) has been revised to clarify that the projected water use for "Dust Control and Maintenance" is intended for the same use and area as the "Irrigation for OSCO Fields." Former OSCO fields which lie fallow outside of the proposed golf course construction area will require dust control and maintenance irrigation of ground cover to prevent erosion. Dust control and maintenance for golf course construction is included as part of the total golf course water requirement. Please replace the back page in the application you hold with the attached sheet showing the revised table.

2. The annual breakdown of the information presented in Table 1 for the four year period from 1994 through 1997 remains the same for each year at 100 percent of the total need as previously requested.

Although the initial mass grading of the golf course and roadways will require less water than the total requested, remaining water requirements for final grading, onsite nursery, and landscaping may be needed as early as 1995. To ensure greater flexibility in the construction schedule, we are
requesting the full amount of allocation for each year over the next four years. If further breakdown is needed, about .36 mgd would be needed for the first six months of mass grading, followed by about .79 mgd for nine months of final grading and installation of landscaping. The full allocation would be needed within 21 months for the landscape grow-in period.

The water needed for dust control and maintenance irrigation of the OSCO fields will begin immediately after October 1994 and continue thereafter until such time that construction occurs over the area.

3. Attached is the City and County Zoning Map No. 12 showing the zoned uses which were approved for our project on December 13, 1993 to verify that the zoning codes in the revised Table 1 are current. The golf course construction area and the maintenance irrigation needed for the fallow OSCO fields area are identified on the same map for reference.

We wish to also clarify that we are not seeking a transfer of Oahu Sugar’s water use permit to HASEKO pursuant to HRS 174C-59 and HAR 13-171-25. Our use of the term in our submittal of the application was merely to indicate our understanding that Oahu Sugar would no longer be using water from that well for sugar cane cultivation at the time that HASEKO would need the water, and, therefore, the water and well use would be available for HASEKO’s use at that time. In light of the implications that the word "transfer" conveys, we should not have used that terminology. We regret the confusion and inconvenience it may have caused.

I hope that the information provided is sufficient to complete the application and acceptable to begin processing. Should you have any questions or comments, please feel free to call me at 599-1444.

Sincerely,

HASEKO (Ewa), Inc.

Alan Suwa
Project Manager

AS:jn

Attachments
16. REMARKS, EXPLANATIONS (cont’d):

Oahu Sugar Company (OSCO) will be harvesting fields within the Ewa Marina project site which are irrigated by EP 27 up to October 1994 when its lease with HASEKO ends (refer to the harvesting schedule below). This means that use of EP 27 will diminish through 1994 and end in October 1994. OSCO has indicated its willingness to transfer its use of Well 1902-01 to HASEKO to accommodate irrigation requirements of the Ewa Marina project. The first use for Ewa Marina will be for dust control during construction of the golf course. This work is scheduled to begin in the fourth quarter of 1994. Other irrigation requirements are for the golf course turfgrass, roadway landscaping, and maintenance irrigation of fallow fields outside of the golf course area.

Harvesting Schedule of Fields Irrigated by EP 27

<table>
<thead>
<tr>
<th>Field No</th>
<th>Acres</th>
<th>Harvest Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>088</td>
<td>124.8</td>
<td>May 6, 1993</td>
</tr>
<tr>
<td>091</td>
<td>117.8</td>
<td>March 24, 1994</td>
</tr>
<tr>
<td>071</td>
<td>123.3</td>
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</table>

TABLE 1. MULTIPLE TMKs TO USE REQUESTED WATER

<table>
<thead>
<tr>
<th>Project Name</th>
<th>TMK</th>
<th>Current County Zoning Code</th>
<th>Net Acres</th>
<th>GPD/Acre</th>
<th>Total GPD</th>
<th>% of Total To Be Used Over Next 4 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golf Course (27 holes)</td>
<td>9-1-12:5, 6, &amp; 7</td>
<td>P-2</td>
<td>270</td>
<td>4,000</td>
<td>1,080,000</td>
<td>100</td>
</tr>
<tr>
<td>Roadway Landscaping</td>
<td>9-1-12:5 &amp; 7</td>
<td>A-1, P-2, &amp; R-5</td>
<td>35</td>
<td>3,000</td>
<td>105,000</td>
<td>100</td>
</tr>
<tr>
<td>Maintenance Irrigation and Dust Control for OSCO Fields</td>
<td>9-1-12:5 &amp; 7</td>
<td>A-1, P-2, &amp; R-5</td>
<td>315</td>
<td>1,000</td>
<td>315,000</td>
<td>100</td>
</tr>
</tbody>
</table>
LEGEND:

1. FR: AG-2 & R-5 to P-2 (25' height limit)
2. FR: AG-2 to R-5 (25' height limit)
3. FR: AG-2 to A-1 (30' height limit)
4. FR: AG-2 & R-5 to B-2 (60' height limit)
5. FR: AG-2 & R-5 to A-2 (60' height limit)
6. FR: AG-2 to RESORT (90' height limit)
7. FR: AG-2 & R-5 to I-3 (60' height limit)
8. FR: R-5 to I-3 (60' height limit)

NOTE: Existing AG-2 & R-5 (25' height limit)

PORTION OF ZONING MAP NO. 12
(EWA BEACH - IROQUOIS POINT)

Land situated approximately 3000 ft. Southwesterly from the intersection of Fort Weaver Rd. and Puuloa Rd.

APPLICANT: HASEKO (EWA), INC.
TAX MAP KEY: 9-1-12: POR. 2, 3, POR. 5, 6, POR. 7, 8 THRU 17 & 23
FOLDER NO.: 92/Z-15
LAND AREA: 909.8 ACRES
PREPARED BY: DEPARTMENT OF LAND UTILIZATION
PUBLIC HEARING: PLANNING COMMISSION CITY COUNCIL
6/30/93 10/20/93

EXHIBIT A
Mr. Alan Suwa
Haseko (Ewa), Inc.
820 Millilani St., Suite 810
Honolulu, HI 96813

Dear Mr. Suwa:

Application for a Water Use Permit
Puuloa Ground Water Management Area, Oahu

We acknowledge receipt of your water use permit application for the Haseko Well No. 1 (Well No. 1902-01) on March 31, 1994. However, the following information is required to complete your application:

1. Updated zoning, acreage, and projected water use for dust control and maintenance (see attached Table 1).

2. An annual breakdown of the information presented in Table 1 for the four-year period from 1994 through 1997.

Yearly projections are necessary because, due to the uncertainties regarding the immediate and long-term viability and sustainable yield of the Ewa Caprock Aquifer, the Commission has been granting temporary permits, valid for one year, based on the annual projections for authorized planned nonpotable uses. As such, please verify that the zoning codes in Table 1 are current. Your estimates of daily demand per acre for the golf course (4,000 gpd/ac), roadway landscaping (3,000 gpd/ac), and maintenance of fallow fields (1,000 gpd) are reasonable and consistent with other similar uses in the area. A suggested value for dust control is 1,000 gpd/ac.

Upon receipt of the requested information, your application will be accepted as complete. You will receive a copy of the public notice and any further information regarding the status of your application.

Your intent to "transfer" the permitted use from Oahu Sugar Co.'s EP 27 Well upon termination of their lease with Haseko would require two separate actions: 1) revocation of Oahu Sugar Co.'s water use permit pursuant to §13-171-24; and 2) approval of your application for a new water use permit. Section 13-171-25 of our Administrative Rules, Transfer of a Water Use Permit, does not apply if the conditions of the use, including place, quantity, and type of water use are modified or changed.
Lastly, all temporary one-year permits are subject to the Conservation Conditions for Ewa Caprock Water Use Permits (see attached). If you have developed any plans or programs to encourage water conservation in the Ewa Marina development or any plans for conversion to an alternative non-potable source other than the Ewa Caprock Aquifer, should the reliability of the aquifer be diminished, these may be submitted to support your application. These plans are not required to complete your application, but will be required should your application be approved.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

RAE M. LOUI
Deputy Director

LN:ko
Attach.
Oahu Sugar Company (OSCO) will be harvesting fields within the Ewa Marina project site which are irrigated by EP 27 up to October 1994 when its lease with HASEKO ends (refer to the harvesting schedule below). This means that use of EP 27 will diminish through 1994 and end in October 1994. OSCO has indicated its willingness to transfer its use of Well 1902-01 to HASEKO to accommodate irrigation requirements of the Ewa Marina project. The first use for Ewa Marina will be for dust control during construction of the golf course. This work is scheduled to begin in the fourth quarter of 1994. Other irrigation requirements are for the golf course turfgrass, roadway landscaping, and maintenance irrigation of fallow fields outside of the golf course area.

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</tr>
<tr>
<td>Dust Control &amp; Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>100</td>
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</table>
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.
   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.
   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

ATTACHMENT C
March 30, 1994

Ms. Rae Loui, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Loui:

Subject: Application for Water Use Permit
Golf Course and Roadway Landscaping for the Ewa Marina Community Development Project in the Ewa Caprock Groundwater Management Area, Ewa, Oahu

Transmitted herewith are the permit application and filing fee which requests nonpotable water use for the subject project.

We are requesting a total of 1.5 million gallons per day (mgd) from the Ewa Caprock Aquifer. This allocation request is to provide nonpotable water for the construction and operation of a 27-hole golf course and roadway landscaping for the Ewa Marina Project, including interim usage for dust control during construction and maintenance irrigation of lands being withdrawn from sugar production.

Our intent is to transfer use of existing State Well No. 1902-01 (EP 27) from Oahu Sugar Company (OSCo) upon termination of their lease with HASEKO to accommodate irrigation requirements for the Ewa Marina project. We have attached a letter from OSCo stating their support for continued use of the well for such irrigation purposes.

If you have any questions or require additional information, please contact our Project Manager Alan Suwa at 599-1444.

Sincerely,

HASEKO (EWA), INC.

Nelson W.G. Lee
Executive Vice President

Attachments

cc: Angela Fong, Esq., Oshima, Chun, Fong & Chung
March 17, 1994

Mr. Raymond Kanna
Haseko (Ewa), Inc.
820 Mililani Street, 8th Floor
Honolulu, Hawaii 96813

Subject: HASEKO's Proposed Use of Well No. 1902-01 (EP27)

Dear Mr. Kanna:

In the past, Oahu Sugar Company has used its EP 27 facility (State Well No. 1902-01) to irrigate fields 71, 74, 84, 86, 88, 91, 92 and 93 in Ewa. Two of these fields, Nos. 92 and 93, are being converted to residential and golf course use in Ewa by Gentry. Harvesting of the remaining fields will be completed by October 1994. This date also coincides with the end of our lease with HASEKO for fields 71, 84, 86, 88, and a portion of 91.

The EP27 facility is an open skimming well developed in an old quarry site on land now owned by HASEKO. The well presently has an allocation of 4.16 MGD for agricultural use. It is our understanding that HASEKO would like to use this well for dust control and irrigation of its golf course and other landscaping starting in November 1994. Oahu Sugar feels that this is an appropriate use of this well and does not oppose HASEKO's water use permit application for that purpose.

Sincerely yours,

A. James Wriston, III
Field Engineer/Land Manager

AJW:lo

cc: R. Heiserman
    B. Hatton
    H. Morita
    T. Nance
APPLICATION FOR WATER USE PERMIT

3-23-94

PERMITTEE INFORMATION

1. (a) APPLICANT
   HASEKO (Ewa), Inc.
   Contact Person: Alan Suwa
   Address: 820 Millan St., Suite 810
   Honolulu, Hawaii 96813-2938

2. LANDOWNER OF SOURCE
   HASEKO (Ewa), Inc.
   Contact Person: Alan Suwa
   Address: 820 Millan St., Suite 810
   Honolulu, Hawaii 96813-2938

SOURCE INFORMATION

3. WATER MANAGEMENT AREA: Pearl Harbor Groundwater Management Area
   Island: Oahu

4. LOCATION: Ewa Field O88, Ewa, Oahu
   Tax Map Key: 9-1-12-5
   Address: Ewa Marina - golf course and roadways

5. SOURCE TYPE: Stream
   PROPOSED USE: Irrigation
   METHOD OF TAKING WATER: Well & Pump
   QUANTITY OF WATER REQUESTED: 1,500,000 gallons per day
   QTY OF WATER REQUESTED: None

6. METHOD OF MEASUREMENT: Flowmeter
   QUALITY OF WATER REQUESTED: Fresh
   QUALITY OF WATER REQUESTED: None

7. PROPOSED USE: Municipal
   Source: Metropolitan Water
   METHOD OF TAKING WATER: Pump
   QUANTITY OF WATER REQUESTED: 1,500,000 gallons per day
   QTY OF WATER REQUESTED: None

8. METHOD OF MEASUREMENT: Flowmeter
   QUALITY OF WATER REQUESTED: Fresh
   QUALITY OF WATER REQUESTED: None

9. METHOD OF TAKING WATER: Pump
   QUANTITY OF WATER REQUESTED: 1,500,000 gallons per day
   QTY OF WATER REQUESTED: None

10. REMARKS, EXPLANATIONS:

   For questions 12 & 13: If multiple TMKs are involved, please complete Table 1 on back of application.

   TOTAL NUMBER OF RESIDENCES TO BE SERVED: None

   TOTAL ACRES TO BE IRRIGATED AND TYPE OF CROP: As required throughout the day

   PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION: As required throughout the day

   (daytime hours of operation, ex. 7 a.m. to 2 p.m.)

   APPLICANT MUST BRIEFLY DESCRIBE FOLLOWING POTENTIAL RESTRICTIONS ON WATER USE:

   (a) Impact on Sustainable yield (7):
       No

   (b) Instream Flow Standards affected (7):
       No

   (c) Hawaiian Home Lands use affected (7):
       No

   (d) Other existing legal uses affected (7):
       None

   (e) Other (pending permits, EIS, etc., (7):
       None

   REMARKS, EXPLANATIONS:

   (if more space is needed, continue on back side)

   NOTE: Signing below indicates that applicant understands that, if a water use permit is granted by the Commissioner on Water Resource Management, a permit is subject to prior existing permits of the applicant in suitable water and irrigation flow standards. Revisions may be as defined by the Commissioner, and Hawaiian Home Lands Water use. In addition, applicant understands that, upon permit approval, a water shortage plan must be submitted should the Commission require one.

   Applicant (Print): NELSON W. Lee
   Signature: __________________________
   Date: 3/30/94

   Landowner (Print): NELSON W. Lee
   Signature: __________________________
   Date: 3/30/94

   For Official Use Only:
   Date Received: _______________________
   Hydrologic Unit No. __________________
   Diversion Works No. __________________
16. REMARKS, EXPLANATIONS (cont'd):

Oahu Sugar Company (OSCO) will be harvesting fields within the Ewa Marina project site which are irrigated by EP 27 up to October 1994 when its lease with HASEKO ends (refer to the harvesting schedule below). This means that use of EP 27 will diminish through 1994 and end in October 1994. OSCO has indicated its willingness to transfer its use of Well 1902-01 to HASEKO to accommodate irrigation requirements of the Ewa Marina project. The first use for Ewa Marina will be for dust control during construction of the golf course. This work is scheduled to begin in the fourth quarter of 1994. Other irrigation requirements are for the golf course turfgrass, roadway landscaping, and maintenance irrigation of fallow fields outside of the golf course area.

Harvesting Schedule of Fields Irrigated by EP 27

<table>
<thead>
<tr>
<th>Field No.</th>
<th>Acres</th>
<th>Harvest Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>088</td>
<td>124.8</td>
<td>May 6, 1993</td>
</tr>
<tr>
<td>091</td>
<td>117.8</td>
<td>March 24, 1994</td>
</tr>
<tr>
<td>071</td>
<td>123.3</td>
<td>October 11, 1994</td>
</tr>
<tr>
<td>084</td>
<td>125.4</td>
<td>October 15, 1994</td>
</tr>
<tr>
<td>086</td>
<td>119.0</td>
<td>October 23, 1994</td>
</tr>
</tbody>
</table>

TABLE 1. MULTIPLE TMKs TO USE REQUESTED WATER

<table>
<thead>
<tr>
<th>Project Name</th>
<th>T M K</th>
<th>Current County Zoning Code</th>
<th>Net Acres</th>
<th>GPD/Acre</th>
<th>Total GPD</th>
<th>% of Total To Be Used Over Next 4 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golf Course (27 holes)</td>
<td>9-1-12:5, 6, &amp; 7</td>
<td>P-2</td>
<td>270</td>
<td>4,000</td>
<td>1,080,000</td>
<td>100</td>
</tr>
<tr>
<td>Roadway Landscaping</td>
<td>9-1-12:5 &amp; 7</td>
<td>A-1, P-2, &amp; R-5</td>
<td>35</td>
<td>3,000</td>
<td>105,000</td>
<td>100</td>
</tr>
<tr>
<td>Dust Control &amp; Maintenance Irrigation for OSCO Fields</td>
<td>9-1-12:5 &amp; 7</td>
<td>A-1, P-2, &amp; R-5</td>
<td>315</td>
<td>1,000</td>
<td>315,000</td>
<td>100</td>
</tr>
</tbody>
</table>
Pay: Twenty-five dollars and no cents

PAY TO THE ORDER OF

DEPARTMENT OF LAND & NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HI 96809

DATE
March 30, 1994

CHECK NO.
3683

AMOUNT
$**********25.00**

WATER USE PERMIT APPLICATION (92-0)
Mr. Keith W. Ahue  
Chairperson  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, HI 96809

Dear Mr. Ahue:

Subject: Progress Report on Metering Oahu Sugar Company's (OSCo) Ewa Caprock Aquifer Wells

Pursuant to the conditions of the water use permits for OSCo's Ewa Caprock wells (well numbers 1900-01, 1900-13, 1901-01, 1902-01, 2000-01, 2001-01) approved by the Commission on December 16, 1992, Oahu Sugar Company is required to meter its pumps that draw water from the wells. The following outlines the progress to date on metering these pumps:

<table>
<thead>
<tr>
<th>Well No.</th>
<th>Pump No.</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900-01</td>
<td>EP20</td>
<td>Meters have arrived at OSCo; installation scheduled for summer of 1993.</td>
</tr>
<tr>
<td>1900-13</td>
<td>EP30</td>
<td></td>
</tr>
<tr>
<td>1901-01</td>
<td>EP24</td>
<td></td>
</tr>
<tr>
<td>1902-01</td>
<td>EP28</td>
<td></td>
</tr>
<tr>
<td>1902-01</td>
<td>EP29</td>
<td></td>
</tr>
<tr>
<td>2000-01</td>
<td>EP21</td>
<td></td>
</tr>
<tr>
<td>1902-01</td>
<td>EP27A, 27B</td>
<td>Approval to purchase meter pending</td>
</tr>
<tr>
<td>2001-01</td>
<td>EP23</td>
<td>Approval to purchase meter pending.</td>
</tr>
</tbody>
</table>

We anticipate completion of metering by December 31, 1993. Should you need any more information or have questions, please call me.

Very truly yours,

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

WDB/HM:yk
June 9, 1993

Mr. Keith W. Ahue
Chairperson
Commission on Water Resource Management
P. O. Box 621
Honolulu, HI 96809

Dear Mr. Ahue:

Subject: Oahu Sugar Company (OSCo) Schedule of Anticipated Withdrawal of Fields from Cultivation

Pursuant to the conditions of the water use permits for OSCo's Ewa Caprock wells (well numbers 1900-01, 1900-13, 1901-01, 1902-01, 2000-01, 2001-01) approved by the Commission on December 16, 1992, Oahu Sugar Company is required to submit to the Commission a schedule identifying when fields specified in the permits will be taken out of cultivation permanently.

As of this date there is no definite time for withdrawal of these fields. Lease considerations are still not complete and until that process is completed, no dates can be determined.

Should you desire further information, please call me.

Very truly yours,

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

WDB/HM:yk
Mr. Keith W. Ahue
Chairperson
Commission on Water Resource Management
P. O. Box 621
Honolulu, HI 96809

Dear Mr. Ahue:

Subject: Oahu Sugar Company (OSCo) Ewa Caprock Aquifer Water Shortage Plan

Pursuant to the conditions of the water use permits for OSCo's Ewa Caprock wells (well numbers 1900-01, 1900-13, 1901-01, 1902-01, 2000-01, 2001-01) approved by the Commission on December 16, 1992, the following outlines OSCo's plans to reduce pumpage from the Ewa Caprock aquifer should the Commission declare a water shortage pursuant to subchapter 4 of chapter 13-171, Hawaii Administrative Rules.

BACKGROUND

The Ewa Caprock aquifer is a shallow body of brackish water, residing in the coral/limestone formations underlying the Ewa Plain. It is generally agreed that utility of the Ewa Caprock aquifer was created and is sustained by the Ewa Plantation Company and its successor, Oahu Sugar Company, via recharge from its irrigation operations. Without sugarcane cultivation, the usable water yield of the aquifer for irrigation purposes would be close to zero. The salinity of the water is not suitable for potable use, but may be used on crops that have a relatively high salt tolerance.

In the past, OSCo's sugarcane was the only major land use on the Ewa Plain and the only major user of Ewa Caprock water; however, recently there has been significant urbanization of the Ewa Plain, with the subsequent use of the Ewa Caprock aquifer for landscape irrigation purposes. There is a potential for an Ewa Caprock aquifer water shortage in the future because of the displacement of sugarcane land overlying the caprock (which reduces recharge) and the drawing of water from the aquifer by the developments that replaced the sugarcane.
It is OSCo's view that as the utility of the source was created and is sustained by OSCo, as OSCo has been until recently the sole long time existing user of the water, and as other current uses of the water are for aesthetics (landscape) while OSCo's use is for productive sugarcane cultivation, use of water from the caprock aquifer in a water shortage should primarily be reserved for OSCo's operations, and secondarily for recently arrived developers that have not contributed to creation and sustenance of the source.

SUGARCANE WATER REQUIREMENTS

OSCo's weekly irrigation usage is determined by computer, by multiplying the evaporation from a Weather Bureau Class "A" type evaporation pan located in the caprock area by a factor that varies with age and season, to estimate the amount of water used by the sugarcane plant during the previous week. This amount is deducted from the amount of water believed to be stored in the root zone of the sugarcane plant. The difference between field capacity and the current soil moisture stored in the root zone is the amount of net irrigation required for the ensuing week. The gross irrigation amount is determined by adjusting the net amount to reflect the irrigation system's delivery efficiency. This method is referred to as "OSCo's Water Balance" Computer Irrigation Scheduling.

The sugarcane plant goes through five stages or periods during which water stress affects ultimate sugar yield to different degrees. Providing optimum quantities of water to the sugarcane plant is especially critical at planting (0 to 3 months of age) and during the period just prior to harvest (ripening--18 to 24 months of age). The next critical period is during the sugarcane plant's "boom" stage (8 to 14 months of age) when the plant is growing the fastest. The least critical stages are the transition stages between planting and the boom stage and between the boom stage and harvest.

WATER SHORTAGE REDUCED USE

While OSCo does not believe it is right to penalize OSCo by restricting its use during a water shortage for the benefit of newly arrived developments and golf courses, during a water shortage declared by the Water Commission pursuant to chapter 13-171, subchapter 4, OSCo will do its part to reduce its usage from the Ewa Caprock aquifer. Upon notification of a duly declared water shortage, and upon specific instruction by the Commission,
OSCo shall restrict its irrigation of its caprock irrigated fields to the following schedule:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Approx. Age</th>
<th>Application Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly Planted</td>
<td>0-3 months</td>
<td>100% of required irrigation</td>
</tr>
<tr>
<td>Transition</td>
<td>4-7 months</td>
<td>90% of scheduled irrigation</td>
</tr>
<tr>
<td>Boom</td>
<td>8-14 months</td>
<td>95% of scheduled irrigation</td>
</tr>
<tr>
<td>Transition</td>
<td>15-17 months</td>
<td>90% of scheduled irrigation</td>
</tr>
<tr>
<td>Ripening</td>
<td>18-24 months</td>
<td>100% of required irrigation</td>
</tr>
</tbody>
</table>

During the water shortage period, if required by the Commission, OSCo will provide the Commission with copies of its water balance printouts, so that the Commission may verify OSCo's compliance with the curtailed irrigation schedule.

CONSEQUENCES

The consequence of implementing OSCo's caprock shortage plan for any prolonged period of time would be a significant loss of sugar produced from its caprock fields, a resulting loss of revenue, and an increase in its cost of production; the combination of which could make it unprofitable to farm the caprock area and further threaten OSCo's profitability. Sugar yield could be reduced on the order of ten to twenty percent of normal, depending on duration and seasonal timing of the water shortage period.

EWA MARINA

A discussion of potential Ewa Caprock aquifer water shortages would not be complete without comment on the Ewa Marina project. OSCo has concerns that excavation of the Ewa Marina by HASEKO (Hawaii), Inc., could cause a short to intermediate term Ewa Caprock aquifer water shortage by breaching the hydrologic barrier that restrains caprock water flow into the ocean. It is understood that the Water Commission will be involved in the regulation and monitoring of the project's construction. OSCo urges the Commission to be mindful of the potential for significant localized and immediate degradation of the caprock aquifer in the immediate vicinity of the project following breaching of the shoreline by the excavation; and urges that the Commission be prepared to exercise control over the construction to protect existing adjacent wells.
Thank you for the consideration of our plans, views and comments. Should you have any questions or need further information, please call me.

Very truly yours,

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

cc: Haseko (Hawaii), Inc.
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Water Use Permit Application, Puuloa
Ground Water Management Area,
Well No. 1902-01 (Oahu Sugar Co., Ltd.)
Honouliuli, 'Ewa, O'ahu
TMK: 9-1-12: 5

HISTORIC PRESERVATION PROGRAM CONCERNS:

Thank you for the opportunity to review this project. This application proposes use of water from an existing well. Therefore we believe that any permit granted this application will have "no effect" on historic sites.

TD: amk
Mr. Locricchio stated that the Circuit Court has found that the MCA does have standing with regard to all matters concerning the Royal Hawaiian Country Club. If the application is accepted for action, the MCA would ask for a contested case hearing.

Mr. Yanoviak said the applicant's proposal to put the utility buildings (which will be holding pesticides) in the flood plain adjacent to Makawao Stream should not be permitted. The Commission "should have higher principles over the City and County of Honolulu" and not let the project continue. He reminded the Commission that a determination was made by Chairperson Paty that no permits would be granted after-the-fact with regard to this particular developer. In regards to the cease and desist order, the applicant has not been conscientious in removing their excess boulders, fill materials, and creosote railroad ties which have been stored on site. Mr. Yanoviak asked that Chairperson Paty write to the developer asking them for their help to work together with the government and community.

Mr. Cox asked the following:

(1) Did the cease and desist order restrict the developer from cleaning out the boulders and railroad ties?

Mr. Higa responded as follows:

(1) The railroad ties are not in the stream channel, therefore the state has no jurisdiction. The boulders are in the flood plain but not the stream channel.

Mr. Ron Jackson commented on written testimony he submitted earlier this year in regards to flood information from USGS gaging stations. It showed peak heights of flood stages approximately every two years. The temporary bridge is proposed in an abrupt turn in the stream channel. Topographically, there may be risk of erosion at that point. He suggested an engineer could review that possibility.

Mr. Martin felt the definition of stream channel was pertinent to this decision. It seemed that a staff recommendation was being developed and asked what steps and timeline are going to be made. He felt that this was a declaratory ruling matter which needs attorney general opinion and rule making processes need to be observed.

Chairperson Paty stated that after further deliberation and staff review, Mr. Martin's questions will be addressed. At this point, those questions cannot be answered.

Declaration by the Chairperson was made to defer action on this application due to the contested case request and subsequent written requests expected in regards to determination of standing.

**ITEM 4**

KUMCHA LAGUA, STREAM CHANNEL ALTERATION PERMIT FOR CONSTRUCTION OF A CHAIN LINK FENCE AT WAIPILOPILO GULCH, HAULUA, OAHU

Unanimously approved (Fujimura/Nakata).

**ITEM 5**

OAHU SUGAR CO., LTD., APPLICATIONS FOR WATER USE PERMITS, PUULOA WATER MANAGEMENT AREA, WAIPAHU, OAHU

Additional information was distributed and explained by Mr. Hardy. The following amendment was made to the Recommendation:

...specified under the above actual five-year average use information from...

Mr. Fujimura asked for clarification if the water would be allocated to the third decimal point. Mr. Hardy replied that water would be allocated to a thousand
gallon per day as has been done in the past. Discussion followed regarding how the additional water use permit applications that have been submitted would be handled. Ms. Loui added that staff would be coming to the Commission in January with recommendations for the other pending permits, but the first step would be to handle Oahu Sugar Co. (OSCo.) permits because they were the long-term users. Mr. Hardy said public hearings will be scheduled to specify aquifer system boundaries for the entire Oahu area.

Mr. Tam said that would raise a legal point and an additional Recommendation 10 should be added to the submittal:

10. The amount authorized could be reduced in the future. It should be taken into account the possibility that should the surface recharge be diminished substantially, the Commission may relook at the use of the wells given the uncertainty of future caprock recharge.

By using the five-year average in terms of determining the amount of allocation, Mr. Fujimura asked if OSCo. was being penalized by being taken at a different standard from everyone else.

Mr. Hardy stated that within the Code in regards to projected use by future users, should the projected use be inflated and the actual use comes in under the projected use within a four-year period the Commission can reduce it. Mr. Tam suggested that the Commission may wish to set a ceiling and deal with the actual uses after setting a time period.

Mr. Hugh Morita representing OSCo. stated they did not agree with the reduction on the permit recommended by staff. They believed that they (OSCo. and the Ewa Plantation) created the Ewa Caprock Aquifer by reason of basal recharge over the caprock margin, which was also mentioned by Mr. Hardy and in a previous report by DLNR. Regarding their irrigation requirements, these were requested based on a pan evaporation model and methods used. Mr. Morita gave a description of the model. Discussion followed on Mr. Morita's presentation.

Mr. Fujimura asked what would happen if OSCo. were to monitor the actual usage rather than inferred figure and if five years would be adequate time to determine the accuracy of water use. Mr. Morita replied that the usage would be a more accurate figure of OSCo. usage. They would assure that maintenance on the meters were accurate so they would not lose any accounting of water use. Assuming the acreage remained the same, five years would be adequate time.

Mr. Martin submitted testimony (see office file) for NHAC commenting on staff's recommendation. He also asked for clarification on the approach used by staff on the water use in regard to the process.

Mr. Fujimura moved to restore the original water use numbers requested by the applicant and the actual pumpage be monitored over a five-year period and that at the end of the equivalent five-year period the permit numbers may be modified to reflect the original intent of using a five-year average.

Mr. Cox said he would second the amendment with the addition that Recommendation 10 be added as suggested by Mr. Tam. Mr. Cox asked if it would be appropriate to ask for data on salinity and asked Mr. Morita if OSCo. gets salinity measurements.

Mr. Morita replied they do have that information. Ms. Loui questioned if the salinity information was necessary because it is a requirement of the rules. Mr. Cox felt it was necessary because one of the concerns of the Commission is the salinity which is getting higher in the Ewa Caprock. Ms. Loui explained that the data is important but it is in the Administrative Rules that all wells provide that information so does not need to be in the permit.
Mr. Tam brought to the Commission's attention that the submittal suggests the unofficial sustainable yield for the area is between 10 and 15 mgd and Mr. Fujimura's revised number for approval is 16 mgd. He inquired of the staff on the sustainable yield level because technically the Commission would be approving a use in excess of the yield.

Mr. Hardy explained that staff is working with a range. Ms. Loui added that the lines of the sectors are artificial. The Puuloa System exists and is separate from the next. When the public hearings are held in January, staff will be recommending the adoption of the larger sector but not necessarily the "hard numbers" for the systems.

Mr. Tam had no problem with the explanation if the Commission was satisfied but wanted to assure that the records reflect that the separation of the districts are geographically artificial and that the real consideration is that the larger area still comes within the overall sustainable yield.

Ms. Joyce Brown of NHAC asked if by using the five-year average would it encourage the user to waste water to show they are using a higher amount of water. Mr. Fujimura said if it was anyone other than OSCo., they may question it but in previous discussions information supplied was reviewed in detail. They are not water wasters and the whole system was water conservation oriented. He therefore had a very high confidence level where OSCo. was concerned. Mr. Cox agreed with Mr. Fujimura and added that the numbers were based upon the needs of the plant.

Unanimously approved as amended (Fujimura/Cox).

**ITEM 6**  
MINAMI GROUP (USA), INC., APPLICATION FOR A WATER USE PERMIT, MINAMI 1 WELL, Koolaupoko Ground Water Management Area, Kaneohe, Oahu

Mr. Nakata stated he was in conflict on this item because he sits on the Board of the Minami Foundation.

Mr. Sean Houlihan, Golf Course Superintendent, stated that he was notified several hours before the meeting that staff was not in agreement with the quantity requested by Minami Group. He explained that their water numbers were taken from 1992. January through July 1992 had been their driest period in the 3 1/2 years they had been working on the project. They had a significantly wet fall and their numbers were very low since September and have not irrigated the course since September. He stated they were comfortable with 150,000 gallons per day as an average number and would need to use conservation methods at certain times of the year to stay with that amount.

Deferred due to lack of quorum.

**ITEM 7**  
REVISION - HONOLULU BOARD OF WATER SUPPLY APPLICATION FOR A WATER USE PERMIT, HAWAIIAN ELECTRIC COMPANY WAIAU TUNNEL, WAIAU, OAHU

Amendments made to submittal by staff:

Under Action Requested:

Hawaiian Electric Company 1 mgd for industrial use through BWS
Honolulu BWS [3 to 5 mgd] 1 mgd for municipal use

Under Recommendation:

...a water use permit to use [five to seven mgd] three mgd from the tunnel...
Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Oahu Sugar Co., Ltd.
Applications for Water Use Permits
Puuloa Water Management Area, Waipahu, Oahu

Applicant: Oahu Sugar Co., Ltd.
P.O. Box O
Waipahu, HI 96797

Well: 1900-01 1901-01 1900-13 2001-01 1902-01 2000-01
Landowner: Hawaii Prince Hotel Corp. 2237 Kuhio Ave. Honolulu, HI 96815
Haseko Hawaii, Inc. 820 Mililani St., Ste 610 Honolulu, HI 96813
Campbell Estate 828 Fort St Mall, Ste 500 Honolulu, HI 96813

Background

Completed applications were submitted to the Commission on September 21 &
October 16 (1902-01 only), 1992. The applications are for existing wells with the
following hydrologic information:

Source Information

All sources are dug wells which withdraw water from the Puuloa (unofficial)
Aquifer System, Ewa Caprock Aquifer Sector, Oahu. The following information is
pertinent for this Aquifer System:
Chairperson and Members  
Commission on Water Resource Management

December 16, 1992

Puuloa System, Ewa Caprock Aquifer Sector, Oahu

10 to 15 mgd

1.76 mgd

8.24 to 13.24 mgd

3.14 mgd

Existing dug wells applied for have the following physical characteristics and are shown in Exhibit 1:

<table>
<thead>
<tr>
<th>Well:</th>
<th>Location:</th>
<th>Year Drilled:</th>
<th>Intake Pipe Diameter:</th>
<th>Water Level:</th>
<th>Ground:</th>
<th>Bottom of Open Hole:</th>
<th>Total Depth:</th>
</tr>
</thead>
</table>
Use Information

All requested use from the dug well sources are for agricultural irrigation of sugarcane. Specific information for each well is listed as follows:

<table>
<thead>
<tr>
<th>Well</th>
<th>Place of water use</th>
<th>Requested mgd</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900-01</td>
<td>OSCO Fields 75 &amp; 76 at TMK: 9-1-10:7</td>
<td>1.550</td>
</tr>
<tr>
<td>1900-13</td>
<td>OSCO Field 90 at TMK: 9-1-10:11</td>
<td>1.320</td>
</tr>
<tr>
<td>1901-01</td>
<td>OSCO Field 74 at TMK: 9-1-12:5</td>
<td>1.194</td>
</tr>
<tr>
<td>1902-01</td>
<td>OSCO Fields 71,84,86,88,91 at TMK: 9-1-1:various, 12:various, 13:various</td>
<td>4.160</td>
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<tr>
<td>2000-01</td>
<td>OSCO Fields 80 &amp; 90 at TMK: 9-1-10:7</td>
<td>2.080</td>
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<tr>
<td>2001-01</td>
<td>OSCO Fields 60 TO 64 &amp; 66 at TMK: 9-1-10:2</td>
<td>5.890 10.304</td>
</tr>
</tbody>
</table>

Nearby Surrounding Wells

There are 51 other wells within a mile of these wells. (see Exhibit 1.) 25 of these wells are currently in use.

Public Notice

In accordance with HAR §§13-171-17, a public notice was published in the Star Bulletin on October 26 & November 2, 1992 for Wells EP 20, 21, 24, 23, & 30 and on November 9 & 16, 1992 for EP 27A&B, 28, & 29. Copies of these notices were sent to the Mayor's office and the Board of Water Supply. Additional notice copies were sent to the County Council and Department of Water Supply. Copies of the completed
Chairperson and Members
Commission on Water Resource Management

December 16, 1992

Application were sent to the Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, Aquatic Resources & Historic Preservation Divisions of the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by November 18, 1992 & December 1, 1992, respectively.

Objections

There were no objections filed by any person who has property interest in any land within the hydrologic unit of the source of water supply or any person who will be directly and immediately affected by the proposed water use. Other objections to the application were submitted by:

<table>
<thead>
<tr>
<th>Objector</th>
<th>Objection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Hawaiian Advisory Council</td>
<td>No objection specific to application but rather objections to general water use permit process.</td>
</tr>
</tbody>
</table>

Field Investigation

The water sources and existing uses were investigated and verified on November 20, 1992.

Analysis

These existing sources have used brackish caprock water for agricultural irrigation of sugarcane for approximately sixty (60) years. Impact on other local wells should not be any different than it has been over the past sixty (60) years. No specific objections to these applications have been submitted to the Commission.

RECOMMENDATION:

That the Commission approve the issuance of water use permits to Oahu Sugar Co., Ltd. for each well and its corresponding use as specified under the above use information from the Puuolua Aquifer System. These permits are subject to the following:

1. The water use authorized by the permit must be for the reasonable-beneficial use and from the source described in the permit.

2. That OSCO. shall submit a schedule identifying when fields specified in these applications will be taken out of cultivation permanently.
3. The water use and withdrawal shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards.

4. The water use will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act.

5. The applicant shall provide and maintain an approved meter for measuring and reporting total water usage on a monthly basis.

6. Prior to issuance of the permit, the applicant shall submit a water shortage plan, as required by §13-171-42(c), that identifies what the applicant is willing to do should the Commission declare a water shortage in the Ewa Caprock Ground Water Management Area.

7. Modification of any permit condition shall be approved by the Commission. Modification of any permit condition without notification may result in the revocation of the water use permit.

8. The applicant shall update and modify permit when necessary to comply with all applicable laws, rules, and ordinances.

9. The final permit shall be issued only after review by the Attorney General.

Respectfully submitted,

RAE M. LOUI
Deputy Director

Attach.

APPROVED FOR SUBMITTAL:

WILLIAM W. PATY, Chairperson
Ms. Rae M. Loui
Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Loui:

Subject: Your Letter of November 17, 1992 on Water Use Permit for Oahu Sugar Caprock Well No. 1902-01

Thank you for the opportunity to comment on the application. We have no objections to issuance of a water use permit as long as the pumpages from the well do not exceed the sustainable yield of the groundwater basin.

If you have any questions, please call Herbert H. Minakami at 527-6183.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer
DECLARANT (FILE REF.): OAHU SUGAR DATE: November 20, 1992
PRESENT: Susan Swanson, DLNR

SOURCES: Ewa Plantation (EP) Caprock Wells:
EP 20 - State Well # 1900-01
EP 21 - State Well # 2000-01
EP 23 - State Well # 2001-01
EP 24 - State Well # 1901-01
EP 27a,b, 28, 29 - State Well # 1902-01
EP 30 - State Well # 1900-13

USE: Irrigation of sugar cane fields.

FIELD NOTES: Hugh Morita, Irrigation Engineer, met me at the Oahu Sugar Co. Ltd. offices in Waipahu on November 20, 1992 at 9:00 am for a field inspection of Oahu Sugar Co.'s caprock wells. These shallow dug wells are uncased and provide brackish water used in cultivation of sugar cane.

We went to each of six sites, photographed the wells and recorded information pertaining to the pumps, if available. Mr. Morita gave me a field map defining the area irrigated by each well. Many of these wells were developed for sugar cane production in the 1930's.

Oahu Sugar Co. leases land and uses wells from several different owners to cultivate sugar cane. Wells # 20 & 24 are located on land that was previously leased to Oahu Sugar Co. The land around wells 20 and 24 is now a golf course; but water from these wells is used solely for sugar cane production. The inspection was complete at 11:30 am.

Since my inspection, the Commission on Water Resource Management met and approved Oahu Sugar's water use permits to withdraw a total average annual gpd of 16,194,000 gallons.

Attachments for each well: Checklist, Photographs, A map showing locations of wells and irrigated fields, USGS maps, copies of the tax map and copies of the water use declaration and ground water management zone permit applications.
EP 30

State Well # 1900-13
PART I: USE OF WATER

The frequency and duration of irrigation depends on rainfall. The sugar cane is irrigated and fertilized by drip irrigation. The pumps operate more or less 24 hours/day for 21, 22 months of the sugar cane’s life cycle. In the last month, water is withheld so that the sugar cane will dry out, so that the field can be burnt. After harvesting the scorched sugar cane, within two weeks, the keiki sugar cane is planted, and the cycle starts again.

GWMZ Applicant: Oahu Sugar Co. Ltd.

Water Use Decl. File Ref.: Oahu Sugar Co. Ltd.

State Well # 1900-13 Name: Caprock Wells, Ewa Plantation Pump # 30

1. Tax Map Key where the water is used: TMK: 9-1-10:11
   Does the applicant own this land? NO.

2. What is the water used for? Irrigation of 131.73 acres of sugar cane.

3. Is the quantity of water use being measured? NO, but there is a water specialties meter installed that is not functioning. The meter was frozen on the reading: 42655100.

4. If this person takes from a multi-user pipe or ditch system? NO

PART II: WATER SOURCE

1. Where does the water come from/what kind of source is this? Excavated well in bottom of borrow pit.

2. Show the source location on maps, determine latitude and longitude, and document the nature of source development by measurements, sketches, and photographs.
   How is the water taken? manually controlled, electric vertical shaft 40 hp Worthington pump, serial # EAJ519495.
   What is the capacity for taking (gpm)? 1110 gpm
   How often is it taken (used)? almost continuously.

3. Tax Map Key at the source: TMK: 9-1-10:13
   Determine applicant’s relation to source. Does the applicant:
   1) Operate and maintain the source? YES
   2) Own the land at the source? NO
   3) Use the water from this source? YES
   4) Own the land where the water is being used? NO, the Federal Government owns the land.

4. Does anyone else also use water from this source? NO

REMARKS: In December, 1992, The Commission on Water Resource Management approved Oahu Sugar Co.’s water use permit to withdraw an average annual gallons/day of 1,320,000.

Verified By: Susan Swanson Date of Inspection: 11/20/92
PHOTO # 15 & 16
Two views of pumps 27a and 27b which draw brackish water from shallow pools in a corral pit.
Both of these pumps are 60 hp Worthington vertical shaft pumps with capacities of 1838 gpm.
PHOTO # 17 & 18

View looking toward pumps 28 & 29. Located in the vicinity of pumps 27 a & b. Pumps 28 and 29 draw water from the same corral pit. Pump 28 is a 50 hp Worthington vertical shaft pump @ 1577 gpm. Pump 29 is a 100 hp Allis Chalmer Centrifugal pump with a capacity of 2078 gpm. These four pumps irrigate 731.43 acres of sugar cane. The Water Commission approved Oahu Sugar Co's use permit to withdraw an average gallons/day of 4,160,000.
TAX MAP REDUCED TO SAME SCALE AS OAHU SUGAR CO.'S FIELD MAP, 1" = 4000', SHOWING LOCATIONS OF THE WELLS AND THE FIELDS IRRIGATED BY EACH WELL.
APPLICATION FOR WATER USE PERMIT

Instructions: Please print or type and send completed application with attachments to the Div. of Water Resource Management, P.O. Box 373, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-1643, Hydrology/Geology Section for assistance.

1. WATER MANAGEMENT AREA: Pearl Harbor

2. (a) WELL/DIVERSION OWNER:
   Firm Name: Oahu Sugar Co., Ltd.
   Contact Person: W. D. Balfour, Jr.
   Address: P.O. Box "O", Waipahu, Hawaii 96797

   (b) LANDOWNER:
   Firm Name: United States Navy
   Contact Person: Director Real Estate Division
   Address: Naval Facilities Engineering Command
   Pearl Harbor, HI 96860

3. SOURCE TYPE:
   - [ ] Spring
   - [ ] Stream
   - [ ] Basal
   - [ ] Dike-confined
   - [ ] Perched
   - [ ] Caprock

4. SOURCE NAME AND NUMBER:
   - [ ] EP30
   - [ ] State Well No. 1900-13
   (well or stream diversion name/number)

5. SOURCE LOCATION:
   - Island: Oahu
   - Tax Map Key: 9-1-10:11
   - Address: Punalu, Ewa District
   (Attach a USGS map, scale 1"=2000", and a properly tax map showing source location referenced to established property boundaries.)

6. LOCATION OF PROPOSED WATER USE (if different from #3):
   - O'Co Field 090
   (Indicate location of water use on same map showing source location.)

7. QUANTITY OF WATER REQUESTED:
   - 1,320,000 gallons per day

8. QUALITY OF WATER REQUESTED:
   - [ ] Fresh
   - [ ] Brackish
   - [ ] Salt
   - [ ] Potable
   - [ ] Non-Potable

9. PROPOSED USE:
   - [ ] Domestic (including hotels, stores, etc.)
   - [ ] Military
   - [ ] Irrigation (specify)
     - Sugarcane
   - [ ] Other (specify)

10. DESCRIBE ANY POTENTIAL RESTRICTIONS ON USE (i.e., instream standards, seasonal variations): None

11. PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION:
    - 24 hours/day continuous operation
    (Indicate hours of operation)

12. PROPOSED METHOD OF TAKING THE WATER:
    - [ ] Artesian Flow
    - [ ] Submersible Pump
    - [ ] Diverted Flow
    - [ ] Vertical Turbine Pump
    - [ ] Centrifugal Pump

13. NUMBER OF RESIDENTIAL OR COMMERCIAL UNITS TO BE SERVED (specify):
    - None

14. TOTAL ACRES PROPOSED FOR IRRIGATION AND TYPE OF CROP:
    - 131.73
    - Sugarcane
    (acres) (crop)

15. REMARKS, EXPLANATIONS:
   Submittal of this water use permit application is pursuant to the directives of the Water Commission's Chairperson's letter.
   (If more space is needed, continue on back side)

Owner (print):
Oahu Sugar Co., Ltd.
Signature: W. D. Balfour, Jr.
Date: December 5, 1991

Landowner (print):
Signature:
Date: 8 AUG 1992

U.S. Navy

Diverstion Works No.
State Well No.
**STATE OF HAWAII**

**COMMISSION ON WATER RESOURCE MANAGEMENT**

**DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF WATER RESOURCE MANAGEMENT**

**REGISTRATION OF WELL AND DECLARATION OF WATER USE**

**INSTRUCTIONS:** Please type or print. If information is not available or not applicable, indicate as N/A. Fill out as completely as possible, sign, and file form with the Division of Water Resource Management, P.O. Box 373, Honolulu, Hawaii 96809. Phone 548-2948 or 548-7543 for assistance.

**BATTERY OF WELLS:** For a battery of wells, on the surface, in a tunnel, or in a shaft, submit a registration form for each well together with a single map or plot plan showing layout of wells.

---

**STATE WELL NO.: 1900-13**

**ISLAND: Oahu**

**WELL NAME OR DESIGNATION:** Ewa Plantation EP30

**SOURCE OR STATION NAME (for a battery of wells):** Ewa Pump 30 (EP30)

---

**A. WELL OPERATOR**

**Firm name:** Oahu Sugar Company, Ltd.

**Contact person:** W.D. Balfour, Jr.

**Address:** P.O. Box "O"

**Waipahu, Hawaii 96797**

**Zip:** 96797 **Phone:** 677-3577

---

**B. OWNER OF WELL SITE**

**Firm name:** Oahu Sugar Company, Ltd.

**Contact person:** W.D. Balfour, Jr.

**Address:** P.O. Box "O"

**Waipahu, Hawaii 96797**

**Zip:** 96797 **Phone:** 677-3577

---

**C. WELL LOCATION**

**Tax Map Key:** 9-1-10:11

**Town, Place, District:** Puuolah, Ewa District

**Attach USGS "Quad" map (scale 1:24,000), tax map, or other map showing the well location.**

---

**D. WELL DATA**

**Excavated well at the bottom of borrow pit.**

**For Drilled Wells, submit "as-built" drawing, driller’s log, and pump test results, and complete items below.**

For Tunnels and Shafts, submit construction drawings, plot plan, or sketch map.

**Ground elevation (Mean sea level):** about 5 ft.

**Reference point (used to measure depth to water):**

**Elevation:** N/A ft.

**Description:** N/A

**Depth to water (Below reference point):** N/A ft.

**Maximum recorded chloride:** 1110 ppm

**Minimum recorded chloride:** 477 ppm

**Maximum chloride in 1987:** 1010 ppm

---

**E. INSTALLED PUMP DATA**

**Pump type:** Vertical shaft

**Centrifugal**

**Other (specify):**

**Power:** Diesel, 11 HP

**Gas, ** HP

**Electric, 40 HP**

**Other (specify):**

**Pump capacity:** 1110 gallons per minute

**Pump installation contractor:** Oahu Sugar Company

---

**For Official Use Only:**

**Date received:**

**Date accepted:**

**Field checked by:**

**Date:** 17/09/92

**Latitude:** 21°45'9"

**Longitude:** 158°06'22"

**Hydrologic Unit:**

**State Well No.: 1900-13**

---

References: Hawaii Revised Statutes, Chapter 174C.

Hawaii Administrative Rules, Chapters 13-167 to 13-171.
F. DECLARATION OF WATER USE

NOTE: The purpose of the Declaration of Water Use is to obtain information necessary for the management of the State's water resources. The Declaration does not confer a legal right to water or its use.

Water use data are recorded: □ Daily □ Weekly □ Monthly □ Other (describe): ______________

Method of measurement: □ Flow Meter □ Orifice □ Other (describe): Pump Run Time x Pump Capacity

Quantity of Use (Report measured or estimated monthly water use from the well described on the reverse side of this form, for the calendar years 1983 through 1987. For a battery of wells which are not individually metered, but which are connected to a single meter or other measuring device, report total use from the battery.):

WATER USE, IN GALLONS x 1000

<table>
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<tr>
<th>Date</th>
<th>April</th>
<th>June</th>
<th>September</th>
<th>December</th>
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<tr>
<td>1983</td>
<td>42480</td>
<td>24900</td>
<td>47400</td>
<td>20900</td>
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<td>1985</td>
<td>40800</td>
<td>22000</td>
<td>44300</td>
<td>17600</td>
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<td>1986</td>
<td>39600</td>
<td>20400</td>
<td>42300</td>
<td>15700</td>
</tr>
<tr>
<td>1987</td>
<td>38100</td>
<td>18500</td>
<td>40300</td>
<td>13900</td>
</tr>
</tbody>
</table>

Minimum day's use: 22300 gallons Maximum day's use: 1,598,000 gallons

Typical times of usage: Constant usage throughout the day

Type of Use (Check all categories that apply and provide additional information as indicated):

□ Municipal (including resorts, hotels, businesses)
□ Domestic (systems serving 25 people or less)
□ Irrigation
□ Industrial
□ Military
□ Other

Additional Information

Acres Irrigated: 148 acres
Crop(s): □ Sugar □ Pineapple □ Other (specify): ______________
Non-Crop: □ Landscape □ Golf Course □ Other (specify): ______________
Method: □ Drip □ Furrow □ Sprinkler

□ Cooling □ Manufacturing □ Mill □ Other (specify): ______________

Specify (livestock, aquaculture, etc.): ______________

I declare that the contents of the above Declaration of Water Use are, to the best of my knowledge and belief, true, correct, and complete.

Water User's Signature: W. D. Balfour Date: 5/5/89
Printed Name: W. D. Balfour, Jr.
Firm or Title (Well Operator, etc.): Oahu Sugar Company, Ltd.
MEMORANDUM

TO: Interested State Agencies & Other Parties

FROM: Rae M. Loui, Deputy Director, Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01.

If you have any objections or comments on the above application, please submit them to us in writing by December 1, 1992.

Should you have any questions, please contact the Commission on Water Resource Management at 587-0225.

RH:ko
Enc.
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Henry Sakuda, Administrator
Division of Aquatic Resources

SUBJECT: Comments on Water Use Permit Application for Puuloa Ground Water Management Area, Oahu

The application by Oahu Sugar Company for Well No. 1902-01 at Ewa, Oahu involves pumping 4.16 million gallons per day of non-potable caprock water for surface irrigation use. The application requests formalization of an existing use.

There appears to be no potential for impact on surface waters. We therefore have no objections with reference to the potential effects on the aquatic biota.
Mr. W.D. Balfour, Jr.
President & Manager
Oahu Sugar Co., Ltd.
P.O. Box O
Waipahu, HI 96797

Dear Mr. Balfour:

Enclosed is a copy of the public notice for your water use permit application which was published in the Honolulu Star Bulletin, issues of November 9 & 16, 1992.

Please be aware that there may be objections to your application. If objections are made, the objector is required to file such objections with the Commission and is also required to send you a copy of the objections.

You, or any other party, may respond to objections by filing a brief in support of your application with the Commission within ten (10) days of the filing of an objection. You, or the other party, must also send a copy of the response to the objector.

If you have any questions, please contact Roy Hardy at 587-0225.

Sincerely,

RAE M. LOUI
Deputy Director

RH:ko
Encl.
Mr. W.D. Balfour, Jr.
President & Manager
Oahu Sugar C., Ltd.
P.O. BOX O
Waipahu, HI 96797

Dear Mr. Balfour:

Application for a Water Use Permit
Puuloa Ground Water Management Area, Oahu

We acknowledge receipt, on October 16, 1992, of your completed water use permit application for the EP 27A,27B,28,29 Well (Well No. 1902-01). You can expect your application to be processed within ninety (90) days from the date of receipt unless there are objections to your application.

We will be sending you a copy of the public notice for your application and any further information regarding the status of your application. In addition, we may need to visit and verify your proposed water source and use sites, if we have not done so already under our registration program.

If you have any questions, please contact Roy Hardy at 587-0225.

Sincerely,

RAE M. LOUI
Deputy Director

RH:ko
MEMORANDUM

TO: Interested State Agencies & Other Parties

FROM: Rae M. Loui, Deputy Director
       Commission on Water Resource Management

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If you have any objections or comments on the above application, please submit them to us in writing by December 1, 1992.

Should you have any questions, please contact the Commission on Water Resource Management at 587-0225.

RH:ko
Enc.
MEMORANDUM

TO: Honorable Hoaliku L. Drake, Director
   Department of Hawaiian Home Lands

FROM: William W. Paty, Chairperson
      Commission on Water Resource Management

SUBJECT: Water Use Permit Application
         Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01.

If you have any objections or comments on the above application, please submit them to us in writing by December 1, 1992.

Should you have any questions, please contact the Commission on Water Resource Management at 587-0225.

RH:ko
Enc.
Mr. Clayton H. W. Hee  
Chairman & Trustee At Large  
Office of Hawaiian Affairs  
711 Kapiolani Blvd., Suite 500  
Honolulu, Hawaii 96813-5249  

Attn: Ms. Linda Delaney, Land & Natural Resources Division

Dear Mr. Hee:

Notice of an Application for a Water Use Permit  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01.

If you have any objections or comments on the above application, please submit them to us in writing by December 1, 1992.

Should you have any questions, please contact the Commission on Water Resource Management at 587-0225.

Very truly yours,

[Signature]  

WILLIAM W. PATY

Enc.
Honorable Frank F. Fasi, Mayor
City & County of Honolulu
City Hall
Honolulu, Hawaii 96813

Attn: Mr. Jeremy Harris

Dear Mayor Fasi:

Notice of an Application for a Water Use Permit
Puuloa Ground Water Management Area, Oahu

In accordance with the Department of Land and Natural Resource Administrative Rule, Section 13-171-17(a), we are sending you a copy of the public notice for the water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01, which was published in the Star Bulletin.

In addition, Section 13-171-13(b) of our Administrative Rules states:

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."

We have attached a copy of the application for your review and would appreciate receiving your comments, within the next sixty (60) days, on whether this water use is consistent with county plans and policies.

Very truly yours,

[Signature]

WILLIAM W. PATY

Enc.
Honorable Gary Gill, Chair  
City Council  
City & County of Honolulu  
City Hall  
Honolulu, Hawaii 96813  

Dear Mr. Gill:

Notice of an Application for a Water Use Permit  
Puuloa Ground Water Management Area, Oahu

In accordance with the Department of Land and Natural Resource Administrative Rule, Section 13-171-17(a), we are sending you a copy of the public notice for the water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01, which was published in the Star Bulletin.

In addition, Section 13-171-13(b) of our Administrative Rules states:

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."

We have attached a copy of the application for your review and would appreciate receiving your comments, within the next sixty (60) days, on whether this water use is consistent with county plans and policies.

Very truly yours,

WILLIAM W. PATY

Enc.
November 10, 1992

Ms. Rae M. Loui
Deputy Director
Commission on Water Resource Management
P. O. Box 621
Honolulu, HI 96809

Dear Ms. Loui:

Subject: Oahu Sugar Company's (OSCo) Ewa Caprock Wells Water Use Permit Applications

We acknowledge receipt of your letter regarding the public notice of the permit applications in the Honolulu Star Bulletin issues of October 26 and November 2, 1992.

We are concerned about the implications contained in your letter--that OSCo's permit application is lumped together with all the other applications.

It has been our understanding that the Water Commission and, to a large degree, the staff and the major land developers view OSCo's use of the Ewa Caprock Aquifer as being grandfathered. We have used and maintained the aquifer for many years while the other applications have just arrived on the scene. When it becomes necessary to issue water use permits for the Ewa Caprock Aquifer, Oahu's legitimate needs should be satisfied prior to the needs of the newcomers.

If this presumption is not accurate, I would appreciate a call at 677-3577 so we may discuss the issue further. Thank you.

Very truly yours,

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

WDB/WM:yk
FACSIMILE TRANSMITTAL PAGE

Please deliver the following pages to:

Name: Hawaii Newspaper Agency

Company: Honolulu Star Bulletin Attn: Legal Advertising

From: Commission on Water Resource Management

Dept. of Land & Natural Resources

Date: Nov. 4, 1992 Time: 9:20 am

Message: PUBLIC NOTICE - Applications for Water Use Permits

Ground Water Management Areas

Total number of pages (Including Transmittal Page): 4

If you do not receive all of the pages legibly, please call back: (808) 587-0225

Sending Facsimile Number: (808) 587-0219

Receiving Facsimile Number: (808) 525-7669

TRANSMISSION REPORT

THIS DOCUMENT (REDUCED SAMPLE ABOVE) WAS SENT

** COUNT **

# 4

*** SEND ***

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XEROX TELECOPIER 7020
FACSIMILE TRANSMITTAL PAGE

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Total number of pages (including Transmittal Page): 4

* * * * * * * *

If you do not receive all of the pages legibly, please call back: (808) 587-0225

Sending Facsimile Number: (808) 587-0219
Receiving Facsimile Number: (808) 525-7449
PUBUC NOTICE

Applications for Water Use Permits
Ground Water Management Areas

Applications for the following water use permits have been received and are hereby made public, in accordance with Department of Land and Natural Resources Administrative Rules 13-171, "Designation and Regulation of Water Management Areas".

KUNIA BY GENTRY (Well No. 2402-04)

Applicant: GENTRY DEVELOPMENT CO.
560 N. Nimitz Hwy.
Honolulu, HI 96817
Date Completed Application Received: October 8, 1992
Aquifer: Waipahu System, Pearl Harbor Sector, Oahu
Well Source: Kunia by Gentry, Well No. 2402-04, Honouliuli, Ewa, Oahu, at
Tax Map Key: 9-2-1:1
Quantity Requested: 500,000 gallons per day
Proposed Water Use: Municipal use for Kunia by Gentry project
Place of Water Use: Kunia by Gentry at Tax Map Key: 9-2-2:0

EP 27A,27B,28,29 (Well No. 1902-01)

Applicant: OAHU SUGAR CO., LTD.
P.O. Box 0
Waipahu, HI 96797
Date Completed Application Received: October 16, 1992
Aquifer: Puuloa System, Ewa Caprock Sector, Oahu
Tax Map Key: 9-1-12:5
Quantity Requested: 4,160,000 gallons per day
Proposed Water Use: Irrigation of 713.43 acres of sugarcane
Place of Water Use: Fields 71,84,86,88,91 at Tax Map Key: 9-1-12:0

MANOA-BISHOP ESTATE (Well No. 1948-03)

Applicant: BISHOP ESTATE
567 South King St.
Honolulu, HI 96801
Date Completed Application Received: October 16, 1992
Aquifer: Nuuanu System, Honolulu Sector, Oahu
Well Source: Manoa Bishop Estate, Well No. 1948-03, end of Kumulani St., Oahu at
Tax Map Key: 2-9-55:4
Quantity Requested: 1,000,000 gallons per day
Proposed Water Use: Municipal water for 1600 houselots
Place of Water Use: Municipal system at Tax Map Key: 2-9-55:0

(more)
McKINLEY AQUACULTURE (Well No. 1850-29)

Applicant: McKINLEY HIGH SCHOOL
1039 S.King St.
Honolulu, HI 96814
Date Completed Application Received: October 6, 1992
Aquifer: Nuuanu System, Honolulu Sector, Oahu
Well Source: McKinley Aquaculture, Well No. 1850-28, 1039 S. King St., Oahu at
Tax Map: 2-3-9:1
Quantity Requested: 85,000 gallons per day
Proposed Water Use: Educational demonstrations of aquaculture
Place of Water Use: 1039 S. King St. at Tax Map Key: 2-3-9:1

Written objections or comments on the application for water use may be filed by any person who has property interest in any land within the hydrologic unit of the source of water supply, any person who will be directly and immediately affected by the proposed water use, or any other interested person. Written objections shall: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; and (3) state all grounds for objections to the proposed permits. Send written objections by DECEMBER 1, 1992 to 1) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809, and 2) a copy of the objection letter to the applicant at the above address.

COMMISSION ON WATER RESOURCE MANAGEMENT

WILLIAM W. PATY, Chairperson

Dated: NOV 4 1992

NOTICE TO VENDORS
Conditions of purchase are listed on the back side of this purchase order. Please read carefully. Payments may be delayed if all steps are not followed.

Hawaii Newspaper Agency
Honolulu Star Bulletin
P.O. Box 3350
Honolulu, HI 96801 Attn: Legal Ad

The State of Hawaii is an EQUAL EMPLOYMENT OPPORTUNITY and AFFIRMATIVE ACTION employer. We encourage the participation of women and minorities in all phases of employment.

PUBLIC NOTICE
Applications for Water Use Permits
Ground Water Management Areas
Publish in issues of Nov. 9 & 16, 1992
(see attached notice)
Price List No. FL 92-66

QUAN. UNIT DESCRIPTION OBJECT UNIT PRICE AMOUNT

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Price List No. FL 92-66

REQUISITIONER
Kay
TELEPHONE NUMBER 587-0225

AUTHENTICATED BY: A. FUR扃CHI

FOR DEPARTMENT USE ONLY

AUTHORIZED SIGNATURE

COPY #1 - VENDOR
APPLICATION FOR WATER USE PERMIT

Ground Water or Surface Water

(a) WELL/DIVERSION OWNER:
Firm Name: Oahu Sugar Co., Ltd.
Contact Person: M. D. Halsey, Jr.
Address: P.O. Box 0, Waipahu, Hawaii 96797
Phone: (808) 677-3577

(b) LANDOWNER:
Firm Name: Haseko Hawaii, Inc.
Contact Person: Hyles Nishiroma
Address: 820 Mililani St., Suite 610
Honolulu, HI 96813
Phone: 522-5025

SOURCE TYPE:
Spring or Stream or Surface Water

SOURCE NAME AND NUMBER:
(Attach a USGS map, scale 1"=2000", and a property tax map showing source location referenced to established property boundaries.)

SOURCE LOCATION:
Island: Oahu
Tax Map Key: 9-1: 12:5
Location: Ewa Beach, Ewa District

LOCATION OF PROPOSED WATER USE (if different from (a)): OCSO Fields 71, 84, 86, 88, 91

QUANTITY OF WATER REQUESTED: 4,160,000 gallons per day

QUALITY OF WATER REQUESTED: Fresh or Brackish or Salt or Potable or Non-Potable

PROPOSED USE: Municipal (including hotels, stores, etc.) or Military or Domestic (individual, noncommercial water use) or Industrial or Irrigation (specify) or Sugarcane or Sugar or Other (specify)

PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION: 24 hours/day continuous operation

PROPOSED METHOD OF TAKING THE WATER:
Artesian Flow or Submersible Pump or Diverted Flow or Vertical Turbine Pump or Centrifugal Pump

NUMBER OF RESIDENTIAL OR COMMERCIAL UNITS TO BE SERVED (specify): none

TODAY PROPOSED FOR IRRIGATION AND TYPE OF CROP: 731.43 Sugarcane

REMARKS, EXPLANATIONS: (If more space is needed, continue on back side)

Owner (print): Oahu Sugar Co., Ltd.
Signature: Date: December 5, 1991

Signatory: Landowner (print): Haseko Hawaii, Inc.
Signature: Date: 10/7/91

Hydrologic Unit: Diversion Works No.

Owner (print): Oahu Sugar Co., Ltd.
Signature: Date: December 5, 1991

Signatory: Landowner (print): Haseko Hawaii, Inc.
Signature: Date: 10/7/91

Hydrologic Unit: Diversion Works No.
15. REMARKS, EXPLANATIONS: of August 26, 1991 (attached). This use is a long standing existing use. Since establishment of the Pearl Harbor Groundwater Control Area and the Water Management Area, the BLNR and the Water Commission have recognized this existing use, but has not officially certified it. This is due in part to the attention paid to regulating the basal aquifers of the control area; and in part to the lack of an officially established sustainable yield for the caprock aquifer. It is OSCo's understanding that after due process, its caprock aquifer uses will be officially certified and water use permits officially issued.
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**CHECK NUMBER** 081980

10/13/92

GROSS TOTAL 25.00

Oahu Sugar Company Ltd.

DETACH BEFORE DEPOSITING

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**Amfac SUGAR & AGRIBUSINESS, INC.**

**Check Number** 081980

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$25.00 DOLLARS AND 00 CENTS

AUTHORIZED SIGNATURE

M. Camus

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**Amfac AGROCOMPANY, INC.**

P.O. BOX 3230 HONOLULU, HAWAII 96813 PHONE (808) 945-8111

VENDOR

PAY TO THE ORDER OF

DEPT. OF LAND & NATURAL RESOURCES
P.O. BOX 621
HONOLULU, HI. 96809

Bank of Hawaii
MAIN BRANCH

[Signature]

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FOR YOUR:

- M. TAGOMORI
- L. Nanbu

- Approval
- Signature
- Information
TO:      ATTN: RAE M. LOUI
          Commission on Water Resource Management

DATE:   October 14, 1992

SUBJECT: Oahu Sugar Company Application for Water Use Permit, Well No. 1902-01

( ) For your review and comment
( ) For your information
( ) For signature
( ) Status please
( ) Per our conversation

( ) For your approval
( ) For your files
( ) Please handle
( ) Please return to me
( ) RUSH

REMARKS: Please call Jim Wriston at 671-4869 or me at 671-4861 should you have any questions.

[Signature]

Sender
APPLICATION FOR WATER USE PERMIT

Ground Water or Surface Water

Instructions: Please print or type and send completed application with attachments to the Div. of Water Resource Management, P.O. Box 779, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $12.00 payable to the Dept. of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-7643, Hydrology/Geology Section for assistance.

1. WATER MANAGEMENT AREA: Pearl Harbor

2. (a) WELL/DIVERSION OWNER:
   Firm Name: Oahu Sugar Co., Ltd.
   Contact Person: H. D. Balfour, Jr.
   Address: P.O. Box "O", Waipahu
   Hawaii 96797 Ph. (808) 677-3577

   (b) LANDOWNER:
   Firm Name: Haseko Hawaii, Inc.
   Contact Person: Myes Nishijima
   Address: 820 Millian St., Suite 610
   Honolulu, HI 96813 Ph. 522-5025

3. SOURCE TYPE: Spring, Stream, Basal, Dike-Diverted, Perched, Caprock

4. SOURCE NAME AND NUMBER: 27A, 27B, 28, 29 State Well No. 1902-01 (well or stream diversion name/number)

5. SOURCE LOCATION: Island of Oahu
   Tax Map Key: 9-1-12:5
   Address: Ewa Beach, Ewa District
   (Attach a USGS map, scale 1"=2000", and a property tax map showing source location referenced to established property boundaries.)

6. LOCATION OF PROPOSED WATER USE (if different from #4): OSCo Fields 71, 84, 86, 88, 91
   (Indicate location of water use on same map showing source location.)

7. QUANTITY OF WATER REQUESTED: 4,160,000 gallons per day

8. QUALITY OF WATER REQUESTED: Fresh, Brackish, Salt, Potable, Non-Potable

9. PROPOSED USE: Municipal (including hotels, stores, etc.), Military, Domestic (individual, noncommercial water use), Sugar cane, Industrial, Irrigation (specify), Other (specify)

   (Specify type of crop.)

10. DESCRIBE ANY POTENTIAL RESTRICTIONS ON USE (i.e., instream standards, seasonal variations):

11. PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION: 24 hours/day continuous operation (Indicate hours of operation)

12. PROPOSED METHOD OF TAKING THE WATER:
   Artesian Flow, Submersible Pump, Diverted Flow, Vertical Turbine Pump, Centrifugal Pump

13. NUMBER OF RESIDENTIAL OR COMMERCIAL UNITS TO BE SERVED (specify):
   None

14. TOTAL ACRES PROPOSED FOR IRRIGATION AND TYPE OF CROP: 731.43 Sugarcane
   (Acres) (Crop)

   Submittal of this water use permit application is pursuant to the directives of the Water Commission's Chairperson's letter.

15. REMARKS, EXPLANATIONS:

   (If more space is needed, continue on back side)

Owner (print) Dahu Sugar Co., Ltd.
Signature ___________________________ Date December 5, 1991

For Official Use Only:
Date Received ___________________________ Hydrologic Unit ___________________________
Date Accepted ___________________________ Diversion Works No. ___________________________

Landowner (print) Haseko Hawaii, Inc.
Signature ___________________________ Date 10/19/91

State Well No. ___________________________
15. REMARKS, EXPLANATIONS: of August 26, 1991 (attached). This use is a long-standing existing use. Since establishment of the Pearl Harbor Groundwater Control Area and the Water Management Area, the BLNR and the Water Commission have recognized this existing use, but has not officially certified it. This is due in part to the attention paid to regulating the basal aquifers of the control area, and in part to the lack of an officially established sustainable yield for the caprock aquifer. It is OSCo's understanding that after due process, its caprock aquifer uses will be officially certified and water use permits officially issued.
ATTACHMENT FOR ITEM 5
Tax Map for 1-9-1-12:5
Showing Water Source Location

[Map Image]
Mr. W. D. Balfour, Jr.
Vice President and Manager
Oahu Sugar
P.O. Box "O"
Waipahu, HI 96797

Dear Mr. Balfour:

Thank you for your letter of August 1, 1991, expressing your concern over the water use permit applications being reviewed by the Commission on Water Resource Management for the Caprock Aquifer of the Pearl Harbor Water Management Area.

We agree with your assessment that "the utility of the Caprock Aquifer was created and is maintained primarily by Oahu Sugar Company through irrigation recharge of lands overlying the aquifer". We are presently looking at ways to encourage water users to increase recharge to the Caprock Aquifer.

In order to better assess the water use situation in the Caprock Aquifer, we would like Oahu Sugar Company to submit applications for water use permits for its existing ground-water sources in the Caprock Aquifer. After due process, as required by our administrative rules, we plan to issue water use permits for your existing Caprock Aquifer sources before acting on any of the new applications. We have enclosed the water use permit application forms for your use.

Please call Mr. Manabu Tagomori at 548-7533 if you have any questions.

Very truly yours,

WILLIAM W. PATY
Chairperson

Enc.
EWA MARINA GOLF COURSE
WATER CONSERVATION PLAN

Prepared by:
Belt Collins Hawaii
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

May 1995
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Figure 1  Location Map

**Appendices**

Appendix A  Conservation Conditions, Ewa Caprock Water Use Permits
Appendix B  Summary of State Department of Health’s Guidelines for Use of Reclaimed Water
EWA MARINA GOLF COURSE
WATER CONSERVATION PLAN

1.0 INTRODUCTION

The Ewa Marina Golf Course will be constructed on approximately 270 acres of land along the mauka side of HASEKO (Ewa), Inc.’s 1,100-acre Ewa Marina Community project (Figure 1). The course is being developed independently of the marina from which the project derives its name. Construction of the course is slated to begin in 1996 and will continue for approximately two years.

This document was prepared pursuant to directives from the Commission on Water Resource Management to all users of Ewa caprock water (Appendix A). It describes water conservation measures that will be implemented during the design and operation of the proposed golf course. The discussion begins with a brief description of the environmental setting; emphasis is placed on aspects of the natural environment relevant to golf course irrigation needs and irrigation system design.

2.0 SITE DESCRIPTION

The proposed Ewa Marina Golf Course (the “site”) will be a 27-hole championship course located within the Ewa Marina community development on the Ewa plain of Oahu. It is surrounded by Barbers Point Naval Air Station and its golf course to the west and northwest, cane land (to be developed as housing and a golf course by Gentry) to the north, the Hawaii Prince Golf Course to the east (across Fort Weaver Road), and the proposed Ewa Marina and Ewa Beach residential area to the east and south. The site was cultivated for sugarcane until the spring of 1995; it is now fallow land overgrown with weeds.

3.0 NATURAL SETTING

3.1 Climate

Hawaii is at the northern extreme of the tropical climate zone, within a belt of cooling northeasterly trade winds. The climate is mild throughout the year, with average monthly air temperature ranging from 72.4°F to 79.4°F. The maximum and minimum temperatures of record at Honolulu International Airport (only six miles east of the site) are 94°F and 43°F, respectively (Armstrong, 1973). Northeasterly trade winds are common over Oahu at all times of the year, but are more persistent in summer than in winter. At the airport, trade wind frequency is about 65 percent, with wind speeds of 4 to 24 mph (Armstrong, 1973). Moderate to strong southerly winds associated with kona frontal passages are dominant from November through March.
Annual rainfall in the Hawaiian Islands is highly variable and is dependent upon altitude and leeward or windward location. The site is in leeward Oahu at no more than 25 feet above mean sea level (+25 msl). Its annual rainfall over the past 40 years averaged 21 inches (CDM, 1993). Winter is typically wetter than summer. Average January rainfall in Ewa is 3.79 inches, and average June rainfall is 0.23 inches. With an average annual pan evaporation rate of approximately 80 inches per year (CDM, 1993), the rate of evapotranspiration in Ewa is nearly four times the average annual rainfall.

### 3.2 Geology and Soil

Bedrock at the site is highly permeable, pitted coralline (reef) rock mixed with alluvium; it is locally known as “caprock.” The caprock is underlain by basalt at least 500 feet below ground surface (Macdonald et al., 1983). Both rock types function as aquifers. The deep basalt aquifer is separated from the caprock aquifer by an impermeable layer of clay. The upper, caprock aquifer is brackish and is recharged principally by rainfall. Until recently, it was also recharged by irrigation return water from sugarcane cultivation. Salinity ranges from 800 to 1000 parts per million (ppm) chloride (Murdoch and Green, 1994). The water table has a head of approximately 1.5 feet and is about 22 feet below grade at the site. Groundwater flow in the caprock aquifer is south towards the ocean (TNWRE, 1991). This aquifer has been pumped heavily over the last century by sugarcane irrigation methods. The caprock aquifer will be used for golf course irrigation.

Soils at the site consist of 6 to 50 inches of reddish-brown silty clay loam. According to the Soil Conservation Service, 6 to 24 inches of sugarcane waste mixed with crushed coral dredge spoils were used as fill in various portions of the site (SCS, 1972). All site soil exhibits moderate permeability, slow runoff, and slight erosion hazard.

During site development, coral outcrop at the west end of the site will be filled with soils excavated from other portions of the site. Topsoil will be added to provide suitable turf rooting depth.

### 3.3 Topography and Drainage

The topography of the Ewa plain is relatively level, with an average gradient toward the ocean of less than one percent. Elevations at the site range between +10 and +23 msl. The combination of low relief, low rainfall, and permeable soil and rock results in minimal surface drainage. There is no existing storm drain at the site. Stormwater drains directly into the underlying coralline rock or runs across the site to drain into a sinkhole in the rock.
3.4 Vegetation

Only plants adapted to low rainfall conditions flourish on the Ewa plain. Until the spring of 1995, vegetation at the site was dominated by sugarcane cultivated by Oahu Sugar Company with heavy irrigation from the caprock and basalt aquifers. Surrounding vegetation would normally consist of koa haole, kiawe, and associated underbrush. The last sugarcane crop has been harvested, and the site is now fallow, with miscellaneous grasses and shrubs growing sporadically in the old cane fields.

4.0 SOURCES OF WATER SUPPLY

The Ewa Marina Golf Course will use potable water for domestic water and nonpotable water for irrigation.

4.1 Potable Water

An Ewa Water Master Plan (1987) approved by the Board of Water Supply (BWS) has allocated 3.2937 million gallons per day (mgd) of potable water from the BWS system for Ewa Marina (Tyrone, 1991). The golf course clubhouse and associated domestic water uses will utilize an estimated 40,000 to 50,000 gpd of that allocation, which will be supplied via the BWS Waianae District water system (Tyrone, 1991). Potable water will not be used for golf course irrigation.

4.2 Nonpotable Water

Consistent with State and City policies, the Ewa Marina Golf Course is committed to using nonpotable water for irrigation purposes. Potential sources of nonpotable water include the Ewa caprock aquifer, reclaimed water, and desalinized seawater. The caprock aquifer is the preferred nonpotable source; reclaimed water will be used if this becomes unfeasible. Desalination is too costly at the present time to be a viable alternative.

4.2.1 Caprock Aquifer Water

The Ewa Marina Golf Course is expected to use about 1.35 mgd of nonpotable groundwater from the caprock aquifer (Tyrone, 1991). This water will come from the irrigation well and pump station (Well No. 3-1902-01, also known as EP27). This skimming well was installed by Oahu Sugar Company in 1964 and until recently was used to irrigate sugarcane at the site. Over the entire Ewa Marina project, the change from sugarcane cultivation to golf course and landscape irrigation will reduce pumping from the caprock aquifer by approximately 5.0 mgd.
4.2.2 Reclaimed Water

Wastewater treatment plant effluent may be reused—or "reclaimed"—for irrigation, conserving existing groundwater resources. New DOH regulations regulate the use of reclaimed water (Appendix B). Reclaimed water, for the purpose of this report, is wastewater treatment plant effluent. The Honouliuli wastewater treatment plant is presently the only public source of reclaimed water in the Ewa Plain. If caprock water sources were not available in sufficient quantity (e.g., if salinity in the caprock aquifer were to rise above usable levels), reclaimed water would become the most economically viable source at the site.

DOH guidelines for the use of effluent are included in Chapter 11-62-25 of the Hawaii Revised Statutes. The main points are summarized here to indicate the type and magnitude of restrictions on effluent reuse.

Reclaimed water under the DOH regulations is classified as follows:

- **R-1:** Virtually pathogen-free effluent
- **R-2:** Disinfected secondary effluent
- **R-3:** Undisinfected secondary effluent

The Honouliuli Wastewater Treatment Plant will provide Class R-2 reclaimed water.

Regulatory requirements have been proposed relative to design, operation, and maintenance of facilities for reclaimed water. Water used to irrigate golf courses and landscaped areas may be Class R-1, R-2, or R-3. The following restrictions apply, however:

Golf courses associated with residences:

- **R-1:** Any type of irrigation system
- **R-2:** Subsurface irrigation only

Restricted access golf courses:

- **R-1:** Any type of irrigation system
- **R-2:** Subsurface irrigation only

Non-edible vegetation and freeway landscaping with limited public access:

- **R-1 and R-2:** Any type of irrigation system
- **R-3:** Subsurface irrigation only
4.3 Evaluation of Nonpotable Water Supply Alternatives

Various water sources were considered for irrigation of the Ewa Marina Golf Course. Use of potable water was ruled out. Brackish water from the caprock aquifer is the preferred source, because it is a proven resource for golf course irrigation. Turf species will be selected for tolerance of existing salinity of the caprock water (see Section 5.1).

However, there is a possibility of increased salinity in the aquifer over time, due to the loss of freshwater recharge from sugarcane irrigation. If salinity were to rise above acceptable levels, reclaimed wastewater would be a preferred source of irrigation water.

Therefore, it is important to minimize water use through conservation measures. Such measures are discussed in Section 5.

5.0 WATER CONSERVATION MEASURES

Population growth and resultant development, especially in the relatively dry Ewa plain, have acutely increased awareness of the high value of water and the need to conserve it. Although potable water use at the golf course represents only a tiny fraction of total water use, low-flow plumbing fixtures will be installed and guests will be invited to cooperate in conserving potable water.

Golf course irrigation water use can be minimized by three primary practices. The first is selection and maintenance of plant materials and plumbing fixtures with the lowest water requirements. The second is providing necessary water using the most efficient possible irrigation system and practices. The third is maximum possible use of nonpotable and reclaimed water. As discussed below, selection of turfgrass and other plant materials, golf course design, and operation and maintenance will be undertaken with all of these factors in mind.

5.1 Selection and Maintenance of Plant Materials

The amount of water needed to maintain plant health varies widely among different species of turfgrass and other plants typically used on golf courses. In order to minimize water use at the proposed Ewa Marina Golf Course, plants with relatively low water use will be selected. Salt-tolerant species will be preferred, to maximize use of the brackish caprock water and to minimize the need for fertilizers and biocides. The final choice of turfgrass species will not be made until construction plans are being prepared for the golf course. However, the following species with proven ability to grow well under the anticipated conditions are being considered:
Trees
- Sea Grape
- Silver Buttonwood
- Royal Poinciana
- Indian Coral
- Beach Heliotrope
- Milo
- Monkey Pod
- Paperbark

Shrubs
- Canna Lily
- Carissa (Natal Plum)
- Spiderlily
- Lantana
- Naupaka
- Hibiscus

Grasses
- Saint Augustine
- Centipede
- Seashore Paspallum
- Zoysin (Zoysin japonica)
- Hybrid Bermuda

Water use can also be reduced through a variety of horticultural practices. For example, many plants require more water during their early growth stages and less water once they are well established. This is due to a number of factors, including the additional ground shading provided by mature foliage, the effect fully grown plants have on near-ground wind speeds (and, therefore, on evaporation rates), and the lower photosynthetic rate that occurs once plantings have matured. The operators of the Ewa Marina Golf Course will carefully maintain plant materials at the golf course to ensure the longest feasible life, thereby minimizing the maturation period during which higher-than-average watering rates are needed.

Trees and other landscaping plantings that will be used on the Ewa Marina Golf Course and in the landscaping surrounding the entrance driveway, the clubhouse, and other golf course facilities, will be mulched with organic material to minimize water loss from the area immediately surrounding them.

5.2 Irrigation System Design and Operation

The Ewa Marina Golf Course irrigation system will be designed and operated to eliminate unnecessary water use, in accordance with Condition 2(b) of the Conservation Conditions, Ewa Caprock Water Use Permits (Appendix A). The overall approach, including physical design features and irrigation management policies and practices, is discussed below.

5.2.1 Irrigation System Design

The irrigation system will include many features that help avoid unnecessary water use. The most important of these are listed below:

- Sprinkler heads will be carefully spaced to ensure even application of irrigation water, thereby avoiding wasteful double-coverage of any areas.
• Sprinkler heads will be selected which perform well under the sometimes windy conditions that prevail at the site; this will maximize the volume of irrigation water which actually reaches the turf.

• Sprinkler heads which minimize clogging will be selected to ensure that the water needs of plants can be met without over-watering some areas.

• The irrigation control system will provide information on temperature, relative humidity, wind speed and, most importantly, soil moisture, to the irrigation manager. Tensiometers and/or other devices for measuring soil moisture will be located at numerous locations. This will provide the golf course manager with information needed to adjust irrigation water application rates so that they are closely aligned with each area's needs.

• Meters will be located strategically throughout the system to assist in the identification of unusual water use patterns and leaks.

• Irrigation water storage ponds will be designed to limit evaporative losses. To the extent practicable, this will be accomplished by maintaining adequate water depth and minimizing the water surface area. Where appropriate, storage ponds will be sited in conjunction with vegetative screens to reduce the wind speed across the pond surfaces and to provide shade (further minimizing evaporation).

• The irrigation system will be designed to facilitate the use of reclaimed water if that should become necessary.

5.2.2 Irrigation Practices and Maintenance

Irrigation water will be applied to the golf course in a fashion which avoids waste. Factors such as temperature, wind, insolation, forecast precipitation, and the water-holding capacity of the soil will be considered in making the decision. Specific guidelines include the following:

• Irrigation water will be applied only to the extent necessary to maintain adequate soil moisture for healthy plant growth. Weather and soil moisture monitoring devices described above will provide the information needed to accomplish this objective.

• Except as needed to prevent plant damage, the course will be irrigated only during the late evening and early morning hours. This is the period when irrigation is most effective from an agronomic standpoint and when potential losses to the atmosphere are lowest.

• To the extent practicable, the turf will be irrigated only when wind speed is in the design range of the sprinkler system. This will prevent unnecessary drift losses.
Increased irrigation water usage can result from a number of factors, including normal wear, debris clogging sprinkler nozzles, accidental damage to sprinkler heads or piping that result in leaks, leaking storage ponds, and other factors. Unnecessary water use from these will be controlled by the following measures:

- The system will be inspected regularly while in operation to detect broken or malfunctioning sprinkler heads, reduced coverage resulting from vegetation growth, poorly programmed control systems, and other deficiencies. Correction of these deficiencies will be made a maintenance priority.

- Water meters located throughout the irrigation system will be read regularly to track water use rates over time; unusual patterns indicative of leaks or other problems will be investigated, and corrective action will be taken as necessary.

- The irrigation system will be checked regularly to ensure that it has not been tampered with and that settings designed to conserve water have not been altered by the staff or others.

The operators of the Ewa Marina Golf Course will emphasize the need for careful and wise water use practices through a systematic program of staff education and training. Staff will be made aware of Ewa Marina’s conservation goals and the measures taken to achieve them. Staff will be encouraged to identify improvements in irrigation facilities and/or practices that could further reduce water use. Examples of water conservation techniques that will be covered by the training include:

- The use of sweeping in lieu of hosing for cleaning;

- The use of controllable nozzles on all hoses to ensure that they are shut off when not being used for the intended purpose; and

- The use of high-pressure/low volume systems for cleaning and other uses, where this is appropriate.

The staff will be thoroughly trained in water conservation techniques. Their full participation and support in implementing water conservation measures will be encouraged though incentives that reward wise water use practices. Supervisors and management will be instructed to solicit and act upon water-saving recommendations made by the field staff.
6.0 REFERENCES


FIGURE 1
Site Location
APPENDIX A
Conservation Conditions, Ewa Caprock Water Use Permits
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   
a. Reduce the demand for non-potable water by:
      
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

ATTACHMENT C
APPENDIX B

Summary of State Department of Health’s Guidelines for Use of Reclaimed Water
GUIDELINES FOR THE USE OF RECLAIMED WATER

The information summarized in this Appendix is based on the Hawaii Department of Health (DOH) Guidelines For the Treatment and Use of Reclaimed Water dated November 22, 1993. The intent of the regulations is to protect public health, prevent degradation of aquifers and surface waters, and to facilitate and delineate use of reclaimed water. DOH allowable uses for reclaimed water are summarized in Table C-1. The items summarized herein are those required for submittal to DOH for approval of effluent reuse. The primary items are listed below and further detailed in the remainder of this Appendix.

A. Basis of Design Report for Reclamation Treatment Facility
B. Engineering Design Report for Reclamation Treatment Facility
C. Construction Plans for Reclamation Treatment Facility
D. Basis of Design Report for Water Reclamation Reuse
E. Engineering Design Report for Water Reclamation Reuse
F. Construction Plans for Water Reclamation Reuse

A. BASIS OF DESIGN REPORT FOR RECLAMATION TREATMENT FACILITY

This report requires:

1. Population and flow projections;
2. Wastewater characterization, including wastewater, effluent, and non-domestic waste;
3. Optimization for coagulants and polymers;
4. Water reclamation site selection, including existing and proposed collection systems, existing and proposed zoning and land use, wind rose, land availability, location with respect to floor plan, soil characteristics, geology, and topography;
5. Development and evaluation of treatment alternatives, which address treatment levels compatible with reuse proposals and unit processes with respect to hydraulic and wastewater loadings;
6. An institution plan, including development of reclamation standards, metering program, rates and charges, inspection program to assure
conformance to plans, inspection protocol and standards, regulations and policies regarding cross connections, sewers, and industrial pretreatment, and identifying the owner and entity with authority over work.

B. ENGINEERING DESIGN REPORT FOR RECLAMATION TREATMENT FACILITY

This report is to include:

1. Summary of "Basis of Design Report";

2. Selection of treatment processes, including schematics of the treatment train, descriptions and calculations for significant treatment processes, mass balances, and staging schedules of future changes;

3. Descriptions of how each of the "Treatment Design Parameters" contained in Chapter IV of the Guidelines are incorporated into the facility design, including secondary treatment, coagulation, filtration, disinfection, alarms, power supply, flexibility, reliability, storage impoundments, and emergency backup systems.

4. Development of an operations plan which incorporates intended design parameters, operation parameters, and the training of personnel to reliably produce the optimal water quality for the designated product level;

5. A treatment monitoring program which includes frequency and location of sampling.

C. CONSTRUCTION PLANS FOR RECLAMATION TREATMENT FACILITY

Required submittals include:

1. General layout plan: location and size of facility, site improvements, schematic flow diagrams, piping, hydraulic profiles, elevations of high and low water levels, requirements of Section 12.3.1 (Chapter 10 - "Plans of Wastewater Pump Station-General Layout"), bench mark elevation, and basis of bearings with description;

2. Detailed construction drawings: requirements of Section 12.3.2 (Chapter 10 - "Plans of Wastewater Pump Station-Details Plan"), location, dimensions, and elevations of facility units, and type, size, pertinent features, and rated capacity of all pumps, blowers, motors, and other mechanical devices.
D. BASIS OF DESIGN REPORT FOR WATER RECLAMATION REUSE

This report is to include:

1. Descriptions of the project area, properties of the raw and reclaimed wastewater, supplemental water supply, and transmission and distribution systems. Project area boundaries, present and anticipated land use within one mile of site boundaries, and project area drainage and soil survey are required. Data must be collected on the maximum daily permeability rate, design application rate, water balance, macro nutrient balance, total dissolved solids balance, and other constituents like heavy metals. Further, a vegetation cover monitoring and maintenance plan, and consumptive rates of water, nitrogen, phosphorus, and potassium are needed.

2. A Monitoring Plan which includes establishment of a baseline groundwater and coastal water quality, and a monitoring schedule (the frequency and type of monitoring depend on project location, depth to groundwater, etc.);

3. A Project Evaluation Plan which assesses the overall long-term effects of the proposed project on environmental resources in the area. The evaluation is to include changes in water table elevations due to natural fluctuations and application of reclaimed water, prediction of the rate and direction of movement of the applied water, and changes in the area associated with the project.

E. ENGINEERING DESIGN REPORT FOR WATER RECLAMATION REUSE

This report requires:

1. Irrigation Plan, which delineates the methods and controls to be used in the irrigation system such that no runoff or ponding will occur. The irrigation plan shall minimally describe the following components:

   a. The exact boundaries of the proposed use area, and delineated irrigation areas within these boundaries;

   b. Amount and type of reclaimed water available for irrigation and the associated maximum and minimum average gallons per day;

   c. Location and characteristics of the transmission line from the reclamation treatment facility to the proposed use area or storage reservoir;
d. Design data for storage reservoirs or impoundments (if needed);

e. All pertinent data for materials use in the system including types and size of pipes, meters, pumps, valves, and sprinklers; sprinkler pattern, height, and radius; flow, application rates, and periods; operating pressure, uniformity coefficient of irrigation distribution, and data on surface irrigation systems where used;

f. Identification of measures to prevent runoff to areas not under owner's control;

g. Location plan for area drinking water fountains.

2. Management Reuse Plan, which establishes and delineates responsibilities of operation and maintenance. This includes procedures and restrictions for distributors and users, operation criteria for irrigation, quality control, and provisions for a contingency plan that shall identify actions and precautions to be taken to protect public health in the event of a non-approved use;

3. Public Education Plan, to inform persons likely to come in contact with reclamation water, including signage, fencing, advisories, etc;

4. Employee Training Plan;

5. Vector Control Plan, which establishes conditions necessary to limit mosquito production in impoundments, conveyance facilities, and wetlands;


F. CONSTRUCTION PLANS FOR WATER RECLAMATION REUSE

The plans are to detail the piping system, including irrigation components. They are generally to conform to the requirements of Section 12 "Construction Plans" of Chapter 10, Design Standards of the Division of Wastewater Management, Vol. 1, except for section 12.2 which will be substituted by Section 9 - Construction Plans, Water System Standards. Additional details include a bench mark, bearings, and color coding of pipes.

G. OTHER SUBMITTALS

1. An Operations and Maintenance Manual is required to ensure that all equipment is kept in a reliable operating condition. A written statement is needed from the engineer responsible for the Operation and Maintenance
Manual that all applicable effluent requirements are met by operating under manual guidelines.

2. Contingency Plan, to be designed to assure that inadequately treated reclaimed water is not delivered to the user. The Contingency Plan shall include:

   a. A list of conditions which would require an immediate diversion to take place;

   b. A description of the diversion procedures;

   c. Designation of the diversion system components. If storage basins are used, they must be sized to prevent any overflows or discharges of effluent when the irrigation system is not in operation or when effluent quantities exceed the irrigation requirements, only basins with impervious impoundments are allowed. A minimum emergency storage of 20 days should be provided unless demonstrated otherwise. The system storage capacity should proved adequate retention under adverse weather conditions, based on a 50-year storm recurrence interval.

   d. A plan for the disposal of any inadequately treated effluent. Reclaimed water produced at the treatment facility that fails to meet the criteria established in the guidelines is not to be discharged into the system storage or to the distribution system. Substandard reclaimed water shall be either stored for subsequent-additional treatment or shall be discharged to another reuse system requiring lower levels of treatment or a DOH approved effluent disposal facility.

   e. A plan for notifying the reclaimed water user, DOH Wastewater Branch, and other appropriate agencies.

3. Compliance Report and Submittals:

   The items include:

   a. Conforming to the Sampling and Analysis Plan with submittal to DOH on a regular basis.
b. An annual report to DOH describing the quality and quantity of water reclaimed, method of irrigation and areas irrigated, rates of application, total application and climatic conditions, corrective actions taken, and monitoring reports.

c. Monthly operating records to be filed with DOH.

d. Inspection, supervision, employee training and record keeping requirements for operation of the system.

There are also infrastructure requirements for irrigation systems. Cross connection control must be provided for the reclaimed water system where the supply is supplemented with potable water supply or from irrigation wells. Below grade piping separations and concrete jacketing requirements apply to reclaimed water and potable water lines. All reclaimed water piping, valves, and outlets are to be permanently labeled to differentiate them from potable or other water.
Table C-1: Summary of Suitable Uses for Reclaimed Water

<table>
<thead>
<tr>
<th>SUITABLE USES OF RECLAIMED WATER¹</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRRIGATION: (S)pray, (D)rip &amp; Surface, S(U)bsurface, (A)ll = S D &amp; U, Spray with (B)uffer, (N)ot allowed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golf course landscapes</td>
<td>A</td>
<td>UB</td>
<td>N</td>
</tr>
<tr>
<td>Freeway and cemetery landscapes</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Parks, elementary schoolyards, athletic fields and landscapes around some residential property</td>
<td>A</td>
<td>U</td>
<td>N</td>
</tr>
<tr>
<td>Roadside and median landscapes</td>
<td>A</td>
<td>UB</td>
<td>N</td>
</tr>
<tr>
<td>Non-edible vegetation in areas with limited public exposure</td>
<td>A</td>
<td>DUB</td>
<td>U</td>
</tr>
<tr>
<td>Sod farms</td>
<td>A</td>
<td>DUB</td>
<td>U</td>
</tr>
<tr>
<td>Ornamental plants for commercial use</td>
<td>A</td>
<td>DUB</td>
<td>U</td>
</tr>
<tr>
<td>Food crops above ground &amp; not contacted by irrigation</td>
<td>A</td>
<td>U</td>
<td>N</td>
</tr>
<tr>
<td>Pastures for milking and other animals</td>
<td>A</td>
<td>U</td>
<td>N</td>
</tr>
<tr>
<td>Fodder, fiber, and seed crops not eaten by humans</td>
<td>A</td>
<td>DUB</td>
<td>DU</td>
</tr>
<tr>
<td>Orchards and vineyards bearing food crops</td>
<td>A</td>
<td>DU</td>
<td>DU</td>
</tr>
<tr>
<td>Orchards and vineyards not bearing food crops during irrigation</td>
<td>A</td>
<td>DUB</td>
<td>DU</td>
</tr>
<tr>
<td>Timber and trees not bearing food crops</td>
<td>A</td>
<td>DUB</td>
<td>DU</td>
</tr>
<tr>
<td>Food crops undergoing commercial pathogen destroying process before consumption</td>
<td>A</td>
<td>DUB</td>
<td>DU</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUPPLY TO IMPOUNDMENTS: (A)llowed (N)ot allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted recreational impoundments</td>
</tr>
<tr>
<td>Basin at fish hatcheries</td>
</tr>
<tr>
<td>Landscape impoundments without decorative fountain</td>
</tr>
<tr>
<td>Landscape impoundments with decorative fountain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUITABLE USES OF RECLAIMED WATER</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUPPLY TO OTHER USES: (A)llowed (N)ot allowed</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flushing toilets and urnals</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Fire fighting</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Commercial and public laundries</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Cooling saws while cutting pavement</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Decorative fountains</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Washing yards, lots and sidewalks</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Flushing sanitary sewers</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>High pressure water blasting to clean surfaces</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Industrial process without exposure of workers</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Industrial process with exposure of workers</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Cooling or air conditioning system without tower, evaporative condenser, spraying or other features that emit vapor or droplets</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Industrial boiler feed</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Water jetting for consolidation of backfill material around potable water piping during water shortages</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Water jetting for consolidation of backfill material around piping for reclaimed water, sewage, storm drainage, and gas and electrical conduits</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Washing aggregate and making concrete</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Dampening roads and other surfaces for dust control</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Dampening brushes and street surfaces in street sweeping</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
</tbody>
</table>
PROJECT TITLE: EWA CAPROCK GROUNDWATER QUALITY SURVEY

WELL DESCRIPTION:
Well Name: EP 27 A&B, 28 & 29
Well I.D. No.: 3-1902-01
Well Location: Lat. 21° 19' 03" N
Long. 158° 02' 33" W
Well Owner: Oahu Sugar
Contact Person: Hugh Morita
Type: Irrigation
Flow: 5.1 mgd
Remarks: Dug well, open pit near old pump site

WELL CONSTRUCTION:
Casing Stick Up (A) none ft.
Ground Elevation (B) 5 ft.
Diameter of Boring (C) varies in.
Total Depth of Boring (D) 8 ft.
Grouted Interval (E) none ft.
Filter-Pack Interval (F) none ft.
Msr'd Dpth to Wtr Tbl/ Approx Elev/ Elev Per DLNR Indx (G) / / 2.0 ft.

<table>
<thead>
<tr>
<th></th>
<th>DIAMETER (IN)</th>
<th>LENGTH (FT)</th>
<th>TOP/BOT.ELEV.(FT)</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Casing (H)</td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Perforated Casing (I)</td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Open Hole (J)</td>
<td>varies</td>
<td>8</td>
<td>5/-3</td>
<td>coralline</td>
</tr>
</tbody>
</table>

JOURNAL OF SAMPLE COLLECTIONS:
Time               | 10:20 a.m.       | 10:38 a.m.       | 1:15 p.m.         | 10:30 a.m.    |
Person             | GT, CH, NU       | JR, CH          | JT, JR, CH, NU    | NU, KW, JR    |
Weather            | Fair             | Fair            | Fair              | Fair         |
Remarks            | Sampled from manifold | Sampled from manifold | Sampled from manifold | Sampled from manifold |

### EP 27 A&B, 28 & 29

<table>
<thead>
<tr>
<th>Date of Sample Collection</th>
<th>12/02/92</th>
<th>02/11/93</th>
<th>02/23/93</th>
<th>06/15/93</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANALYTICAL PARAMETERS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Dissolved Solids (mg/l)</td>
<td>2017</td>
<td>1819</td>
<td>2192</td>
<td></td>
</tr>
<tr>
<td>Total Suspended Solids (mg/l)</td>
<td>&lt;0.5</td>
<td>2</td>
<td>1</td>
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</tr>
<tr>
<td>Chlorides (mg/l)</td>
<td>1150</td>
<td>1062</td>
<td>1254</td>
<td></td>
</tr>
<tr>
<td>Specific Conductance (mmho/cm)</td>
<td>3350</td>
<td>3380</td>
<td>3410</td>
<td></td>
</tr>
<tr>
<td>Hardness (mg equiv. Ca CO3/l)</td>
<td>755</td>
<td>726</td>
<td>741</td>
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</tr>
<tr>
<td>Alkalinity (as Ca CO3) (mg/l)</td>
<td>280</td>
<td>281</td>
<td>287</td>
<td></td>
</tr>
<tr>
<td>pH (std. unit)</td>
<td>7.3</td>
<td>7.07</td>
<td>7.27</td>
<td>7.10</td>
</tr>
<tr>
<td>Temperature (°C/F)</td>
<td>24.6/76.2</td>
<td>77.8/25.5</td>
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<tr>
<td>Turbidity (NTU)</td>
<td>0.65</td>
<td>0.65</td>
<td>0.40</td>
<td></td>
</tr>
<tr>
<td>Dissolved Oxygen (mg/l)</td>
<td>4.9</td>
<td>5.6</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>Total Residual Chlorine (mg/l)</td>
<td>0.1</td>
<td>0.07</td>
<td>0.18</td>
<td>0.10</td>
</tr>
<tr>
<td>Ammonia (N) (mg/l)</td>
<td>&lt;0.05</td>
<td>0.03</td>
<td>&lt;0.03</td>
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<tr>
<td>Total Kjeldahl Nitrogen (mg/l)</td>
<td>&lt;0.1</td>
<td>1.65</td>
<td>0.05</td>
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<tr>
<td>Total Phosphorus (mg/l)</td>
<td>0.043</td>
<td>0.03</td>
<td>0.02</td>
<td></td>
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<tr>
<td>Orthophosphate (mg/l)</td>
<td>0.026</td>
<td>0.03</td>
<td>0.02</td>
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<tr>
<td>Total Organic Carbon (mg/l)</td>
<td>1.9</td>
<td></td>
<td>&lt;0.5</td>
<td></td>
</tr>
<tr>
<td>Biochemical Oxygen Demand-5 Day (mg/l)</td>
<td>&lt;2.0</td>
<td>&lt;1.0</td>
<td>&lt;1</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Chemical Oxygen Demand (mg/l)</td>
<td>10.3</td>
<td></td>
<td>&lt;10</td>
<td></td>
</tr>
<tr>
<td>Total Coliform (COL/100ml)</td>
<td>TNTC (a)</td>
<td>TNTC (a)</td>
<td>TNTC (a)</td>
<td></td>
</tr>
<tr>
<td>Vinyl Chloride (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>1,1-Dichloroethylene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>1,1,1-Trichloroethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>Carbon Tetrachloride (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Benzene (ppb)</td>
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<tr>
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</table>

(a) - Fecal Positive
(b) - Fecal Negative
(c) - Sample Holding Time Exceeded
(d) - Lost in Extraction

TNTC - Too Numerous To Count
NF - None Found

DRAFT
<table>
<thead>
<tr>
<th>Date of Sample Collection</th>
<th>12/02/92</th>
<th>02/11/93</th>
<th>02/23/93</th>
<th>06/15/93</th>
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<tbody>
<tr>
<td><strong>ANALYTICAL PARAMETERS</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Methylene Chloride (ppb)</td>
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<td>Chloroform (ppb)</td>
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<tr>
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<td>Bromoform (ppb)</td>
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<tr>
<td>Bromobenzene (ppb)</td>
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<tr>
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<tr>
<td>Arsenic (ppm)</td>
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<tr>
<td>Selenium (ppm)</td>
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<td>&lt;0.05</td>
<td>&lt;0.0005</td>
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<td>Mercury (ppm)</td>
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<td>Cadmium (ppm)</td>
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<td>Lead (ppm)</td>
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<td>&lt;0.01</td>
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<tr>
<td>Chromium (ppm)</td>
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<td>0.047</td>
<td>0.077</td>
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<tr>
<td>Barium (ppm)</td>
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<tr>
<td>Silver (ppm)</td>
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<td>6.0</td>
<td>7.5/6.6*</td>
<td>7.5/6.6*</td>
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<td>Nitrate (as N) (ppm)</td>
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<td>Nitrite (as N) (ppm)</td>
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<td>Fluoride (ppm)</td>
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<td>430</td>
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<td>534</td>
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<td>Sodium (ppm)</td>
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<td>Copper (ppm)</td>
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</tbody>
</table>

(a) - Fecal Positive  
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TNTC - Too Numerous To Count  
NF - None Found  
* - Field Test (Hach NI-12)
<table>
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<tr>
<th>Date of Sample Collection</th>
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<tr>
<td><strong>ANALYTICAL PARAMETERS</strong></td>
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<td>Aldicarb</td>
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<td>Picloram</td>
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<td>Lindane</td>
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<td>Alachlor</td>
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<td>Toxaphene</td>
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<td>Mevinphos</td>
<td>&lt;2.40 (c)</td>
<td>&lt;5.0</td>
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</tr>
</tbody>
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(a) - Fecal Positive  
(b) - Fecal Negative  
(c) - Sample Holding Time Exceeded  
(d) - Lost in Extraction  

TNTC - Too Numerous To Count  
NF - None Found  
* - Found 0.914 ppb Atrazine
PROJECT TITLE  EWA CAPROCK GROUNDWATER QUALITY SURVEY

WELL DESCRIPTION:
Well Name: Ewa Beach EP-24
Well I.D. No.: 3-1901-01
Well Location: Lat. 21° 19' 47" N
Long. 158° 01' 17" W
Well Owner: Gahu Sugar
Contact Person: Hugh Morita
Type: Irrigation
Flow 0.1 mgd
Remarks: Dug well, well head not readily accessible, sampled at downstream port

WELL CONSTRUCTION:
Casing Stick Up (A) none ft.
Ground Elevation (B) 24 ft.
Diameter of Boring (C) in.
Total Depth of Boring (D) 29 ft.
Grouted Interval (E) none ft.
Filter-Pack Interval (F) none ft.
Msrd Dpth to Wtr Tbl/ Approx Elev/ Elev Per DLNR Indx (G) / / 1.8 ft.

<table>
<thead>
<tr>
<th>DIAmETER (IN)</th>
<th>LENGTH (FT)</th>
<th>TOP/BOT.ELEV.(FT)</th>
<th>MATERIAL</th>
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<td>Perforated Casing (I)</td>
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<td>Open Hole (J)</td>
<td>24/-5</td>
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</table>

JOURNAL OF SAMPLE COLLECTIONS:
Time | 10:25 a.m. | 8:41 a.m. | 12:40 p.m. | 11:10 a.m.
Person | JT, KW, MB, HM | JR, CH | JT, JR, CH, NU | NU, KW, JR
Weather | Fair | Fair | Fair | Fair
Remarks | | | | |
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<td>Total Suspended Solids</td>
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<td>Chlorides</td>
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<td>Specific Conductance</td>
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<td>Alkalinity (as Ca CO3)</td>
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**RESULTS**

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<td>(ppb)</td>
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(a) - Fecal Positive
(b) - Fecal Negative
(c) - Sample Holding Time Exceeded
(d) - Lost in Extraction

TNTC - Too Numerous To Count
NF - None Found
ND - Non Detect

**DRAFT**
<table>
<thead>
<tr>
<th>Date of Sample Collection</th>
<th>12/02/92</th>
<th>02/11/93</th>
<th>02/23/93</th>
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<td><strong>ANALYTICAL PARAMETERS</strong></td>
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<td>Methylene Chloride (ppb)</td>
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</table>

(a) - Fecal Positive
(b) - Fecal Negative
(c) - Sample Holding Time Exceeded
(d) - Lost in Extraction

TNTC - Too Numerous To Count
NF - None Found
* - Field Test (Hach NI-12)
<table>
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<th>Date of Sample Collection</th>
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<th>02/11/93</th>
<th>02/23/93</th>
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<td>Alachlor</td>
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(a) - Fecal Positive  
(b) - Fecal Negative  
(c) - Sample Holding Time Exceeded  
(d) - Lost in Extraction  

TNTC - Too Numerous To Count  
NF - None Found  

DRAFT
Caprock Wells Sampled

Major and Secondary Roads

Seaward (Makai) Areas of the Underground Injection Control (UIC) Line
CHLORIDE TITRATION RECORD

EP Co.

for Dug Well 40 (No.)

3-1902-01

Island Project or Job No. 19

Titrations conducted by E. P. Brues, USGS

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<th>AgNO₃ (ml)</th>
<th>AgNO₃ - .2 ml</th>
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# CHLORIDE TITRATION RECORD

**E.P.C.**

_Dug Well 40_ 3-19-02-01

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**Titriations conducted by**

SRB - USGS. Ground Water

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Data furnished by City & County, Board of Water Supply.

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**Remarks:**
- Ewa Plantation Co., Pump No.
- Ewa Caprock

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<td>Pump 29 8/10/64 655 15.2 Coral, Not Operating</td>
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FILE CLOSED 5-15-03

SEE FOLDER FOR

1901-06, 1902-01, 09 #11
Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, Hawaii 96813

(WUP No. 650)

2. Article Number (Copy from service label)

PS Form 3811, July 1999
May 15, 2003

Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

This is in response to your April 25, 2003 letter, requesting administrative modification of Water Use Permit (WUP) Nos. 192 and 347 for EP 27 (Well No. 1902-01) pursuant to Declaratory Ruling No. DEC-ADM97-A1 and administrative modification of the water use permit issued in Contested Case No. CCH-OA96-1 (Marina permit) pursuant to Administrative Rule 13-171-23(b).

The first part of the request by Haseko Ewa, Inc. (HASEKO) is to administratively modify WUP Nos. 192 and 347 by transferring the allocations from EP 27 to a battery of wells consisting of EP 27 and four proposed wells. From the map provided, we have assigned the four proposed wells Well Nos. 1902-09,10,11 and 1901-06, going from west to east. We find that HASEKO’s request meets the criteria for administrative modification under DEC-ADM97-A1. Please find attached Well Construction Permit application forms for the four proposed wells.

The second part of HASEKO’s request is to administratively modify Special Conditions (b) and (c) in the Commission on Water Resource Management’s Decision and Order (D&O) in the matter of the Water Use Permit Application for the Ewa Marina Contested Case Hearing (Case No. CCH-OA96-1) pursuant to Administrative Rule 13-171-23(b). In effect, Special Conditions (b) and (c) limit the durations of WUP Nos. 192 and 347 to coincide with the start of marina construction and orders the use of reclaimed water as an alternate nonpotable source upon cancellation of WUP Nos. 192 and 347.

HASEKO is requesting modification of Special Conditions (b) and (c) because marina construction is ready to commence, however, reclaimed water is not available in sufficient supply for HASEKO’s nonpotable needs. We have confirmed with the Board of Water Supply that HASEKO has received only a limited amount of reclaimed water for use at the park site.
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<td>Total Postage &amp; Fees</td>
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**Postmark**

Here

**MAY 19 2003**

**Sent To**

Mr. Nelson W.G. Lee

820 Mililani St., Ste. 810

Honolulu, HI 96813
RETURN MAIL SERVICES:

1. Complete and attach Return Receipt for your mailpiece.
2. Signature on delivery.
3. Insured or Registered Mail.
4. Certified Mail available for any class of international mail.
5. NO INSURANCE COVERAGE IS PROVIDED with Certified Mail. For insured or registered mail.
6. A Return Receipt may be requested to provide proof of delivery. To request a Return Receipt service, please complete and attach a Return Receipt Requested Affixed to the article and add applicable postage to cover the additional expense. To receive a fee waiver for the Return Receipt, a USPS postmark on your Certified Mail receipt is required.

or an expedited fee delivery may be restricted to the addressee or agent. Advise the clerk or mark the mailpiece with the assistance of a USPS postmarking machine. If a postmark on the Certified Mail receipt is desired, please present the article at the post office for postmarking. If a postmark on the Certified Mail receipt is desired, attach a Return Receipt and present it when making an inquiry.

IMPORTANT: Save this receipt and present it when making an inquiry.

USPS Form 3860 January 2011 (Reverse) 102595-07-M-1049
nearest the mauka boundary of HASEKO’s property. We understand that additional water will still be needed to supply the golf course, landscaping, and for dust control and that the nonpotable transmission system still does not exist. Absent the ability to use caprock ground water or reclaimed water, the only other available alternative would be potable water from the municipal water system, which would not result in the most efficient utilization of available resources.

In light of these changed conditions, that were unanticipated at the time the D&O was issued, and in consideration of the efficiency of water use, we find that HASEKO’s proposal falls within the provisions of Administrative Rule 13-171-23(b).

Further, we note that, subsequent to the D&O (issued September 25, 1998), on July 18, 2001, the Commission on Water Resource Management (Commission) extended all other interim water use permits in the Puuloa and Kapolei Ground Water Management Areas to: 1) July 1, 2006, or 2) until treated wastewater is available and acceptable for use, or 3) until such time that a significant change in permitted, actual, or projected uses or water supply occurs. We believe that this duration is also appropriate for the proposed EP 27 well battery.

We have combined WUP Nos. 192 and 347, which have been cancelled, under a single new water use permit, WUP No. 650 (attached). The terms and conditions of WUP No. 650 are identical to those approved for other interim water use permits in the Puuloa and Kapolei Aquifer Systems.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

ERNEST Y.W. LAU
Deputy Director

LN:ss
Attachments
May 15, 2003

Ref: 650.wup

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well Nos. 1901-06, 1902-01, 09, 10, 11
Puuloa Ground-Water Management Area, Oahu

This letter transmits your water use permit for the EP 27 Battery (Well No. 1901-06, 1902-01, 09, 10, 11) for use of 3.300 million gallons per day (mgd) of water on a 12-month moving average basis that was administratively modified by the Commission on Water Resource Management (Commission) per Declaratory Ruling DEC-ADM97-A1 and Administrative Rule 13-171-23(b). This water use permit, WUP No. 650, supersedes WUP Nos. 192 and 347, which have been cancelled. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 19:

Special Conditions

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
Mr. Nelson W.G. Lee  
Page 2  
May 15, 2003

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment A and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment B.

i. In the event a water shortage is declared by the Commission, permittees in the Puuoloa Aquifer System shall comply with the Puuoloa Water Shortage Plan adopted by the Commission.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit.

We draw your attention to two key conditions of your permit that require your response. First, you are required to keep a record of your monthly total pumpage, water level, salinity, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

Second, you are required to submit a water shortage plan to the Commission within thirty (30) days of the issuance date of this permit. Your water shortage plan simply identifies what you are willing to do should the Commission declare a water shortage situation in the Puuoloa Ground-Water Management Area and can be as short as a one page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from all sources. The Commission is required, by law, to formulate a plan to implement such area-wide reductions, which should accommodate, include, and be consistent with your plans. Therefore, your help, by submitting your water shortage plan, is greatly needed in formulating the Commission's overall Water Shortage Plan.

If you have any questions, please call Lenore Y. Nakama of the Commission staff at 587-0218.

Sincerely,

[Signature]

Peter T. Young  
Chairperson

Attachments
GROUND-WATER USE PERMIT  
WUP NO. 650

PERMITTEE

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PERMITTED SOURCE INFORMATION

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<tr>
<th>Island</th>
<th>Oahu</th>
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<tr>
<td>Water Management Area</td>
<td>Ewa Caprock</td>
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<td>Aquifer Sector</td>
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<tr>
<td>System Sustainable Yield</td>
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<td>Well Name</td>
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<tr>
<td>State Well No.</td>
<td>1901-06, 1902-01, 09, 10, 11</td>
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PERMITTED USE INFORMATION

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<tr>
<th>Reasonable beneficial use</th>
<th>Dust Control, Golf Course and Landscaping Irrigation</th>
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<tbody>
<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>3.300 mgd</td>
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<td>Location of water use</td>
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<td>Address</td>
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<td>State land use classification</td>
<td>Urban</td>
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<td>County zoning classification</td>
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Pursuant to Hawaii’s State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the permittee is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial use means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 and July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. ensure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.
14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Attachment
April 25, 2003

Ernest Lau, Deputy Director
Commission on Water Resource Management
State of Hawaii
Department of Land and Natural Resources
Attn.: Lenore Nakama
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Re: Water Use Permits Nos. 192 and 347 (EP 27)
State Well No. 1902-01

In re the Matter of the Water Use Permit Application
For the Ewa Marina Contested Case Hearing
Case No. CCH-OA96-1

Dear Mr. Lau:

HASEKO Ewa, Inc. (HASEKO), is the holder of each of the above-referenced water use permits and seeks modification of the permits as follows. First, HASEKO requests that the Chairperson approve the administrative transfer of Water Use Permit (WUP) nos. 192 and 347 from State Well No. 1902-01 to a battery of wells located on HASEKO's property pursuant to Commission on Water Resource Management (CWRM) Declaratory Ruling No. DEC-ADM97-A1. Second, HASEKO requests that the Commission modify the WUP issued in Contested Case No. CCH-OA96-1 (Marina Permit), without a hearing, pursuant to Rule §13-171-23(b) of Hawaii Administrative Rules (HAR).

1. MODIFICATION OF WATER USE PERMIT NOS. 192 AND 347. On December 16, 1992, CWRM issued WUP no. 192 to Oahu Sugar Company, Ltd. (OSCO), and HASEKO allowing for the existing use of 4.160 million gallons per day (mgd). On July 13, 1994, CWRM modified WUP no. 192 to allow for 2.660 mgd of agricultural use and issued WUP no. 347 to allow for 1.5 mgd of urban use. On May 14, 1997, CWRM modified WUP nos. 192 to allow for 1.8 mgd of agricultural use. On July 18, 2001, CWRM extended the permits to July 1, 2006, until treated wastewater became available and acceptable for use, or a significant change in water use or supply occurred. On March 12, 2003, pursuant to a request by HASEKO, CWRM issued a variance to HASEKO granting it relief from the 1,000 mg/l chloride limit for Well No. 1902-01.

CWRM Declaratory Ruling No. DEC-ADM97-A1 issued January 5, 1998, provides that the CWRM Chairperson has been delegated the authority to approve allocation adjustments where a) the net change in permitted use within the aquifer is zero, b) the modification would result in more efficient and
optimal operation of multiple sources under a single operator, c) no adverse impacts to water resources or other existing legal uses are anticipated, and d) end use location and type remain unchanged.

In order to address the increased chloride levels at EP 27 and to continue to provide non-potable water for the same uses at the HASEKO parcel, HASEKO requests that the Chairperson approve the administrative transfer of WUP nos. 192 and 347 to a battery of wells set forth in the map prepared by Tom Nance, P.E., a true and accurate copy of which is attached hereto as Exhibit A. HASEKO further anticipates that it will be submitting well drilling permits for these proposed wells. HASEKO believes that this requested modification meets each of the criteria set forth in the declaratory ruling as follows:

a) **Net Change in Permitted Use with Aquifer is Zero.** As noted in the attached map, the proposed wells are all located on the HASEKO parcel and are within the Ewa Caprock aquifer. The total withdrawn under WUP nos. 192 and 347 would remain unchanged.

b) **Modification would Result in More Efficient and Optimal Operation of Multiple Sources Under a Single Operator.** In order to address the increased chloride levels encountered at EP 27, the proposed battery of wells will lessen the drawdown occurring at EP 27 and will utilize shallow wells at sites across the HASEKO property. It is believed that this reduction in pumpage at EP 27 will result in an overall reduction in the chloride levels of the water withdrawn. Additionally, it is noted that the Board of Water Supply’s (BWS) reclaimed wastewater system has not yet been extended into the HASEKO parcel. HASEKO has applied to the BWS for reclaimed water and it is anticipated that the amounts that are presently available will be used at the district park site located on the mauka edge of its property.

c) **No Adverse Effects on Water Resources or Other Existing Legal Uses.** As the HASEKO property and well sites are located on the makai edge of the Ewa Plain, it is noted that there are no downgradient wells and thus there will be no adverse impact to the resource or other users.

d) **End Use Location and Type Remain Unchanged.** The water withdrawn will continue to be used by HASEKO for dust control on its parcel and for irrigation at its turf farm.

Based upon the foregoing, HASEKO requests that the Chairperson modify the terms of WUP 192 and 347 to allow for withdrawal of the allocated amounts from the well sites described in the attached map.

2. **MODIFICATION OF THE MARINA WATER USE PERMIT.** The Marina Permit, issued by CWRM on September 25, 1998, provides at specials conditions (b) and (c) that WUP nos. 192 and 347 shall be cancelled with HASEKO’s written consent upon the start of marina construction and that upon cancellation, HASEKO shall use reclaimed water for its non-potable needs. HASEKO is preparing to excavate the marina and anticipates that construction will begin shortly. The BWS’ reclaimed wastewater system has been extended to a point near the mauka-Diamond Head (northeast) corner of the HASEKO parcel. HASEKO has requested that reclaimed water be supplied to the Ocean Pointe development and the BWS has agreed to supply 100,000 gallons per day (gpd) to HASEKO for irrigation purposes at the district park site located alongside Ft. Weaver Road. HASEKO still requires non-potable water for dust control at locations across its property and for irrigation of its sod farm operation.
HAR §13-171-23(b) provides in relevant part:

All permit applications shall be treated as initial permit applications and be subject to sections 13-171-12 to 13-171-22; except that if the proposed modification involves an increase in the quantity of water not exceeding an average amount per month as set forth in section 13-171-14, the commission, at its discretion, may approve the proposed modification without a hearing provided that the permittee establishes that:

(1) A change in conditions has resulted in the water allowed under the permit becoming inadequate for the permittee’s proposed needs; or

(2) The proposed modification would result in a more efficient utilization of water than is possible under the existing permit.

HASEKO requests that the Commission approve the modification of the Marina Permit, without a hearing, to allow HASEKO to defer surrender of WUP nos. 192 and 347 until reclaimed water becomes available and acceptable for use on the HASEKO parcel, and then to allow HASEKO to retain the allocation for use as a supply of backup or supplemental non-potable water in the event that reclaimed water becomes unavailable in quantities sufficient for HASEKO’s non-potable needs. HASEKO believes that the Commission has the authority to grant this request as the same falls within the exemption set forth in HAR §13-171-23(b) as follows.

First, the modification seeks an increase in water allocation, e.g. from a surrender of the entire permitted amount to the present interim allocated amount of 3.166 mgd, with the same being less than amount originally allocated from EP 27 as an existing use pursuant to HAR §13-171-14. In this case, the original existing use allocated by CWRM to OSCO on December 16, 1992, was 4.160 mgd. The amount presently allocated and sought to be retained is actually less than that permitted as an existing use.

Second, HASEKO observes that there has been a change in circumstances from those envisioned by CWRM when the Marina Permit was issued. As noted in the Marina Permit, it was envisioned that upon the commencement of marina construction, reclaimed water would be available in sufficient quantities to HASEKO for its non-potable needs. As of this date, HASEKO has applied for and received approval for only a limited amount of reclaimed wastewater with all of the allocation being slated for use at the park site nearest to the transmission line that terminates mauka of the HASEKO property. There is presently insufficient reclaimed water available for the remainder of HASEKO’s non-potable needs.

In addition to the lack of supply, it is observed that the transmission system for the reclaimed water does not extend throughout the HASEKO property. While development plans do call for non-potable lines to extend to the golf course, parks, and landscaping located throughout the development, the transmission system needed to deliver the water to the points of use does not exist.

Further, as the EP 27 water is presently being used for dust control, it is noted that areas under construction where dust control is needed are adjacent to residential communities. It is contemplated that residents in these adjacent areas will oppose use of reclaimed water in aerosol form especially where such water could reach their property either through overspray or runoff.
Finally it is noted that when the condition was originally imposed on Haseko, it was unknown what the source, quality, and quantity of, and transmission system for, the reclaimed water would be. Now it is known that the reclaimed water system is a single source plant capable of producing only limited quantities of R-1 quality water. In the event that there is a disruption in service (plant maintenance, low supply of seed wastewater, etc.), users of reclaimed water will need a supply of back up water. It is noted that this situation differs significantly from the BWS potable supply as there is no unified multiple source delivery system in place. It is also believed that the other reclaimed water users in the caprock have been allowed to retain their caprock allocations for the purposes of back up supply. HASEKO simply requests that this same accommodation given to other reclaimed water users be extended to it when reclaimed water becomes available.

Third, and in the unlikely event that the Commission finds that there has not been a change in circumstances justifying the modification, the proposed modification operates to make more efficient use of the resource. As noted above, reclaimed water is neither available in sufficient quantities nor is there a transmission system in place capable of delivering the reclaimed water to the planned points of use. In the absence of either reclaimed water or non-potable caprock water from EP 27 (or the proposed battery of wells described in Part 1, above), HASEKO will have no option other than to use potable water from the BWS system to satisfy its non-potable water needs.

Thank you for your attention to this matter. Should you have any questions or concerns regarding the foregoing, please contact me at (808) 536-3711 or our attorneys Angela Fong and Randall K. Ishikawa at (808) 528-4200.

Very truly yours,

Nelson W. G. Lee
Executive Vice-President

closures
March 12, 2003

Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813-2938

Dear Mr. Lee:

This is in response to your February 20, 2003 letter, requesting a variance from the 1,000 mg/l chloride limit for Well No. 1902-01. Our review of the reported chlorides from the well shows that the chlorides have fluctuated about the 1,000 mg/l limit for the last two years.

The Commission’s July 18, 2001 action to extend interim caprock water use permits delegated the authority to the Chairperson to approve variances from the chloride limit, with consideration to the well’s proximity to the ocean and to other wells, its history of chloride and pumpage, the availability of alternative sources of water and possibility for conversion.

Well No. 1902-01 is near the ocean, and there are no other wells downgradient. Haseko (Ewa), Inc. (Haseko) owns the land from the well site to the shoreline. Since the cessation of sugarcane agriculture on the Ewa plain, the chloride concentration of the well water has gradually increased, as was expected with the loss of imported basal irrigation water. We understand that Haseko is currently in negotiations with the Board of Water Supply, the purveyor of reclaimed water from the Honoouliuli Wastewater Reclamation Plant, and will convert to reclaimed water when it becomes available, replacing the use of the well for irrigation and dust control.

For the above reasons, the variance request is approved. The variance shall expire six (6) months after the first date of reclaimed water service delivery.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

DEAN A. NAKANO
Acting Deputy Director

LN:ss
I. STATUS AND UPDATE OF PROJECT (See Attached Old & Current Master Plan)
   A. Residential / Commercial
   B. Marina

II. WATER USE PERMITS
   A. EP-27
      (1) Chloride Variance (See Attached February 20, 2003 Letter)
      (2) WUP 347 (1.5 mgd for Urban)
      (3) WUP 192 (1.8 mgd for Agricultural)
   B. Marina Water Use Permit
      (1) Preconstruction Work with COE (See Attached Condition e)
      (2) Waiver of Conditions b and c (See Attached)
         (a) Reclaimed water is not sufficiently available
         (b) Prefers not to use reclaimed water near residences
         (c) Potable water should not be used for dust control
         (d) Back up supply is needed

III. DISCUSSION
These materials are based on the current development plans for Ocean Points. They are conceptual in nature and there are no guarantees that all or any of the components will be developed or that the components will be developed as depicted here.

09/24/02
February 20, 2003

Mr. Dean Nakano, Acting Deputy Director  
Commission on Water Resource Management  
1151 Punchbowl Street, Room 227  
Honolulu, Hawaii  96809

Re: Water Use Permit No. 347, Well No. 1902-01  
Variance from the 1000 mg/l Chloride Limit

Dear Mr. Nakano:

The Commission on Water Resource Management’s July 18, 2001 submittal indicated that operators of wells that have exceeded the 1,000 mg/l chloride limit should seek a variance from the Commission. In an exhibit to that staff submittal, Mr. Glenn Bauer noted that Haseko’s EP-27 well has had chlorides ranging from 800-900 mg/l and had stabilized at approximately 900 mg/l. See page 2-3 of Exhibit 7.

However, a recent review of readings from the EP-27 well indicates that the chlorides from the well have exceeded the 1,000 mg/l chloride limit. We, therefore, are seeking a variance from the 1000 mg/l chloride limit. Certain operational steps are being implemented to reduce the chloride levels below the 1,000 mg/l chloride limit during your consideration and hoped for approval of this variance request.

We also hope that in the next couple of weeks we will be able to schedule a briefing with you and your staff to update you and your staff on the caprock modeling and current activities and on our updated plans for caprock water and reclaimed water for the Ocean Pointe (formally known as the Ewa Marina) project. We will contact you to set up an appointment. Thank you for your kind consideration of this request, it is greatly appreciated. If you have any questions or need further information about our request, please do not hesitate to contact me at 536-3771, ext. 225.

Sincerely,

Nelson W.G. Lee  
Executive Vice President
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII

In the Matter of the Water Use Permit Application for the Ewa Marina Contested Case Hearing

Case No. CCH-OA96-1

FINDINGS OF FACT
CONCLUSIONS OF LAW, AND
DECISION AND ORDER
V. DECISION AND ORDER

The Commission approves the issuance of a water use permit to Haseko (Ewa), Inc. for the reasonable and beneficial "use" of Puuloa Aquifer System ground water for the proposed excavation of the Ewa Marina, subject to the standard water use permit conditions listed in Attachment A and the following special conditions:

a. Standard Conditions 9, 10, 11, 12, 16, 17, and 18 are waived.

b. Not later than the start of the construction phase (as described in the Department of the Army Corps of Engineers Permit PODCO 2117) of the marina, the applicant's water use permits, WUP Nos. 192 and 347, for a total allocation of 3.3 mgd, shall be canceled, with the written consent of the permittee, in accordance with Haw. Rev. Stat. § 174C-58.

c. Upon cancellation of WUP Nos. 192 and 347, pursuant to b., above, the applicant shall use reclaimed water for its non-potable needs.

d. This permit shall be subject to the Commission's periodic review of the progress of the construction of the marina and the applicant's compliance with the conditions of this permit. The Commission may initiate action to revoke the permit if construction of the marina is not completed by December 31, 2003, which coincides with the expiration date of the U.S. Army Corps of Engineers permit.

e. The applicant shall submit to the Commission a copy of the complete preconstruction report, required by the Corps, describing the results of the pre-construction activities, the adjustments made to the model, and the predicted behavior of the caprock aquifer when the marina is excavated and opened.

f. During the construction of the marina, the applicant shall submit to the Commission copies of monitoring results and any revised predictions, required by the Corps.

g. To protect the traditional and customary rights exercised in the project area during the construction of the marina, access to the shoreline fronting the project area must be permitted for the reasonable exercise of traditional and customary practices of native Hawaiians to the extent feasible and safe.

h. After the completion of the project, the Applicant will provide public access to the marina waterway and ocean shoreline for the purpose of permitting the reasonable exercise of traditional and customary practices of native Hawaiians.

i. Post construction, the applicant shall submit to the Commission copies of quarterly reports, required by the Corps, analyzing the data to determine impact of the completed marina on the resource value of the Wetland Preservation Area, the habitat value of the anchialine pools, and the ground-water levels and salinity gradients on the caprock aquifer.

j. The applicant shall comply with all other applicable statutes, ordinances, and regulations of the Federal, State, and City and County of Honolulu governments.
February 20, 2003

Mr. Dean Nakano, Acting Deputy Director  
Commission on Water Resource Management  
1151 Punchbowl Street, Room 227  
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347, Well No. 1902-01  
Variance from the 1000 mg/l Chloride Limit

Dear Mr. Nakano:

The Commission on Water Resource Management’s July 18, 2001 submittal indicated that operators of wells that have exceeded the 1,000 mg/l chloride limit should seek a variance from the Commission. In an exhibit to that staff submittal, Mr. Glenn Bauer noted that Haseko’s EP-27 well has had chlorides ranging from 800-900 mg/l and had stabilized at approximately 900 mg/l. See page 2-3 of Exhibit 7.

However, a recent review of readings from the EP-27 well indicates that the chlorides from the well have exceeded the 1,000 mg/l chloride limit. We, therefore, are seeking a variance from the 1000 mg/l chloride limit. Certain operational steps are being implemented to reduce the chloride levels below the 1,000 mg/l chloride limit during your consideration and hoped for approval of this variance request.

We also hope that in the next couple of weeks we will be able to schedule a briefing with you and your staff to update you and your staff on the caprock modeling and current activities and on our updated plans for caprock water and reclaimed water for the Ocean Pointe (formally known as the Ewa Marina) project. We will contact you to set up an appointment. Thank you for your kind consideration of this request, it is greatly appreciated. If you have any questions or need further information about our request, please do not hesitate to contact me at 536-3771, ext. 225.

Sincerely,

Nelson W.G. Lee  
Executive Vice President
Ref: 1902-01.let

Mr. Nelson W.G. Lee  
Executive Vice President  
Haseko (Ewa), Inc.  
820 Mililani Street, Ste. 820  
Honolulu, HI 96813-2938

Dear Mr. Lee:

This is in response to your June 26, 2002 letter, requesting a variance from the weekly sampling and reporting schedule to a monthly schedule for Well No. 1902-01. Based on our analysis of the data collected at Well No. 1902-01, which indicates that ground-water conditions at the site have stabilized, your request is hereby approved.

If you have any questions please contact Lenore Nakama of the Commission staff at 587-0218.

Sincerely,

LINNEL T. NISHIOKA  
Deputy Director

LN:ss
June 26, 2002

Ms. Linnel T. Nishioka, Deputy Director
Commission of Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347 Well No. 1902-01
Chloride Sampling Protocol

Dear Ms. Nishioka:

The Commission on Water Resource Management Notice Action, dated August 6, 2001 required interim permittees to adhere to a weekly chloride sampling protocol. Since August of last year, Haseko has provided the Commission with weekly chloride sampling reports as requested.

Recent discussions and review between our consultant, Mr. Michael Knight of URS and your staff, seem to indicate from the data collected that it appears the caprock has stabilized sufficiently to warrant sampling monthly rather than weekly.

We, therefore, would like to make a request to relax our sampling frequency from weekly to monthly.

Sincerely,

Nelson W.G. Lee
Executive Vice President

NWGL: dsl
Cc: Michael Knight, URS

820 Millilani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654
Ref: ewa_13e.act
CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Nelson Lee
Haseko (Ewa), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

Notice of Action
Extension of Interim Water Use Permit
Puuloa Ground Water Management Area, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on July 18, 2001, to extend your interim water use permit (WUP No. 347, Well No. 1902-01), subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace former special conditions):

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE. CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES.

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier. 
(No extra charge)

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article RETURN RECEIPT REQUESTED adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse RESTRICTED DELIVERY on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in Item 1 of Form 3811. 

U.S.G.P.O. 1989-234-555
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**SENDER:**

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

1. Addressee's Address
2. Restricted Delivery
3. Article Addressed to:
   - Mr. Nelson Lee
   - Haseko (Ewa), Inc.
   - 820 Mililani St., Ste. 810
   - Honolulu, HI 96813
4. Article Number
   - P 354 448 612
5. Service Type
   - □ Registered
   - □ Certified
   - □ Express Mail
   - □ Insured
   - □ Return Receipt for Merchandise
   - □ COD
6. Date of Delivery
   - 8/7/20
7. Addressee's Address (Only if requested and fee is paid)
8. Addressed to:
   - Deborah Seu Lundin
   - X Deborah Seu Lundin

**Domestic Return Receipt**
f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment C.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

The Commission will suspend the four-year period of nonuse for permittees that convert to reclaimed water service, beginning from the first date of reclaimed water service delivery under an agreement with the Board of Water Supply. The suspension will be for the duration of the interim permit or until the agreement with Board of Water Supply for reclaimed water service delivery ends, whichever comes first.

The Commission decided that interim permittees shall be notified by letter of the Commission action and extended permit duration and that re-issuance of new interim water use permits for these extended permits is unnecessary.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

LN:ky
Attachments
TESTIMONY BY APPLICANT:

Mrs. Harms stated that according to the Hawaii County Department of Water Supply (DWS), she would need 2 hookups per unit and a total of 16 units that require water. She stated that the units are located approximately 100 feet from where the County system terminates at the entrance to Vacationland. Mrs. Harms stated that DWS informed her that only 50 hookups were allowable to the Association meter, and that the association meter was filled to the maximum. At the present, Mrs. Harms stated that she has a temporary hookup of 10 lines with DWS.

MOTION: (RICHARDS/NOBRIGA)
To approve the submittal as amended in Alternate Recommendation #1.
UNANIMOUSLY APPROVED AS AMENDED.

4. Extension Of Interim Water Use Permits, Puuloa and Kapolei Ground Water Management Areas, Oahu

PRESENTATION OF SUBMITTAL: Ms. Lenore Nakama

AMENDED RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 4, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):
   a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.
   b. 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.
   c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted.
   d. The duration of the interim permit shall be
      a) to July 1, 2006, or
      b) until treated wastewater is available and acceptable for use, or
      c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.
e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirements is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Exhibit 9.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. Grant variances from the 1,000 mg/l chloride limit to Hawaii Prince Golf Club (Well Nos. 1900-02, 1900-17 to 20, 1901-03), Pacific Tsunami Warning Center (Well No. 1900-23), and The Estate of James Campbell (Well Nos. 1905-08,10). The variances shall expire six (6) months after the first date of reclaimed water service delivery.

3. Delegate the authority to the Chairperson to approve future variance requests.

4. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

5. Suspend the four-year period of nonuse for the Hawaii Prince Golf Club, Coral Creek Golf Course and Barbers Point Kapolei Golf Course, beginning from the first date of reclaimed water service delivery under their agreement with the Board of Water Supply. The suspension will be for the duration of these interim permits or until the agreement with Honolulu Board of Water Supply for reclaimed water service delivery ends whichever comes first. This condition shall apply to any other interim permittee that converts to reclaimed water service.

TESTIMONY BY APPLICANT:

Ms. Terry Kondo of Watanabe Ing & Kawashima representing Hawaii Prince Golf Course expressed concerns on staff recommendations #2, and 1g.

Mr. Tom Nance stated that when the golf course switches over to the effluent, the wells will not be run weekly. They will be run on occasion to keep them viable for use when effluent is not available. They will not be used on a weekly basis so providing a weekly data will become difficult. In the case of Hawaii Prince, samples that were obtained at one-half to
one-hour intervals were misleading. An internal sample protocol was developed so that all wells have to be run continuously for 24 hours before samples can be obtained. For that reason, Mr. Nance asked if condition 1 g could be modified that reporting be done on a monthly basis. He stated that trends are better noticed on a monthly data report.

Ms. Nakama stated that an administrative waiver was granted for Kapolei Golf Course because the long-term data was so stable. No significant movements were indicated in the water levels. Hawaii Prince and Coral Creek could request an administrative waiver from the weekly chloride-sampling requirement from the Chairperson.

Mr. Glenn Bauer stated that records showed that there were no major differences for Hawaii Prince’s chlorides in the weekly and monthly data. He felt that monthly data reporting would be sufficient.

MOTION: (NOBRIGA/GIRALD)
To approve the submittal as amended.
UNANIMOUSLY APPROVED AS AMENDED.

5. County of Hawaii, Department of Public Works, Application for a Stream Channel Alteration Permit (SCAP-HA-325), Install Three Concrete Culverts and Replace Bridge Structures, Waiakea Stream, Hilo, Hawaii (TMK 2-4-01:007, 010, 122)

PRESENTATION OF SUBMITTAL: Mr. Edwin Sakoda

RECOMMENDATION:

That the Commission:

Approve a stream channel alteration permit for the construction of culverts at Puainako Street and bridge modifications at Komohana Street, Waiakea Stream, Hilo, Hawaii (TMK: 2-4-01:007, 010, 122). The permit shall be valid for two years subject to the standard stream channel alteration permit conditions in Exhibit 5.

MOTION: (NOBRIGA/RICHARDS)
To approve the submittal.
UNANIMOUSLY APPROVED.


PRESENTATION OF SUBMITTAL: Mr. Ryan Imata
EXTENSION OF INTERIM WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

PERMITTEE(S): See Exhibit 1  LANDOWNER(S): See Exhibit 1

LOCATION MAP: See Exhibit 2

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Waiawa, Ewa-Kunia, and Makaiwa Aquifer Systems. Due to uncertainties regarding the caprock’s sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock. Then-current uses were operating under permanent water use permits.

Designation of the Ewa Caprock as a water management area was precipitated by the City and County of Honolulu’s (City) urbanization plans for the Ewa area and a City ordinance requiring dual water systems for all new developments. Potable water was to be provided through the municipal system. Possible sources of non-potable water were brackish ground water from the Ewa Caprock aquifer and reclaimed sewage effluent. The estimated non-potable demand of 25 mgd after full buildout (Kumagai, 1996) far exceeded the estimated natural recharge to the caprock aquifer of less than 16 mgd (Bauer, 1996).

Because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture, in 1993, the Commission began awarding temporary one-year permits for new uses of caprock ground water. In analyzing water availability, the Commission used guidelines for estimating sustainable yields for the Puuloa, Kapolei, and Malakole areas (Yuen & Associates, Inc., 1989).
On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.

At the July 5, 1995 Commission meeting in Honokaa, Hawaii, the Commission extended the permits, which were now called interim permits, until such time that a formal decision could be made on Oahu.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a sustainable yield for the caprock.

Also on March 13, 1996, the Commission adopted the following policy statement, clearing the way for application of reclaimed water on lands overlying the Ewa Caprock Aquifer:

"It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses."

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for individual irrigation wells at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The rationale behind the chloride cap was to limit pumpage in those wells approaching the limit, to prevent a build-up of sodium in the clay soils, and to protect other users adjacent to those pumping higher chloride water. The Commission also adopted the Puuloa, Kapolei, and Malakole Aquifer Systems in the Ewa Caprock Sector and approved pending applications for new and continued irrigation uses. The specified duration of the interim water use permits was to October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincided with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provided a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999.

On October 22, 1998, the Commission extended the interim water use permits, subject to the Standard Conditions of a water use permit and new special conditions (Exhibit 3). The interim permits specified a duration to: 1) July, 2001, or 2) until treated wastewater is available and acceptable for use, or 3) until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The list of interim permits due to expire in July, 2001 is shown in Exhibit 4. The graphs of reported pumpage and chlorides are shown in Exhibit 5.

On July 20, 2000, an agreement was reached between the Honolulu Board of Water Supply (BWS), the City, and U.S. Filter for BWS’ purchase of the Honouliuli Wastewater Reclamation Facility. The agreement includes BWS becoming the purveyor of reuse water, with the task of securing customers for 10 mgd by July 1, 2001. U.S. Filter will operate the facility for BWS under a 20-year service agreement. The City will provide secondary effluent to the facility and will take back 4 mgd of the R-1 water for City reuse applications. Some of the reclaimed water will supply industrial uses at Campbell
Industrial Park. (A briefing by the BWS on their reclamation program is scheduled as a separate item on this agenda.)

ANALYSIS/ISSUES:

A significant change in the water supply picture has been the acquisition of the Honouliuli Wastewater Reclamation Facility by the BWS and BWS' new role as purveyor of reclaimed water. Since their recent acquisition of the plant, BWS has been actively promoting the use of reclaimed water for non-potable needs over the Ewa Caprock Aquifer. Negotiations have been finalized for some City projects (West Loch and Ewa Villages developments) and for some of the golf courses that have interim caprock permits. Currently, we understand that a memorandum of understanding for golf course irrigation has been negotiated with Coral Creek, Hawaii Prince, and Barber's Point. The agreement provides for a set rate to July 1, 2006. The staff feels that this would be a good time to revisit these permits and the progress of the reclaimed water effort.

Even with reclaimed water as the primary irrigation source, ground water would still be used for the golf course water features, to maintain the pumps, and to mitigate potential reclaimed water quality or odor issues that may arise. The long-term goal of the golf courses is to blend reclaimed water with caprock ground water. Until reclaimed water is actually delivered and has been shown to be a reliable and acceptable source, the golf courses have requested that their interim permits be renewed for the same quantities. They have also requested that the Commission suspend the four-year nonuse clause for permit revocation. Section 174C-58 Haw. Rev. Stat. provides for the Commission and permittee to enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year revocation period. The staff feels that the promotion of alternative non-potable sources to meet non-potable needs is a satisfactory reason to suspend the four-year revocation period, given the uncertainties associated with this new source conversion, provided that other users and the resource are adequately protected.

PROTECTION OF THE RESOURCE

The current sustainable yield for the caprock aquifers is defined by a sustainable capacity at all irrigation wells in the Puuloa and Kapolei Aquifer Systems which prohibits individual pumpages that cause the specific well to exceed a 1,000 mg/l chloride cap. Enforcement of the chloride cap provides adequate protection for the aquifer. Management of the resource via a chloride cap was adopted on May 14, 1997 as an interim management plan. The staff feels that this management approach has been effective and is not recommending that the strategy be changed at this time.

MAXIMIZING THE UTILITY OF THE RESOURCE

Maximizing the utility of the caprock is intimately tied to wastewater reuse. As wastewater reuse comes on line, the sustainable yield of the caprock will increase, meaning more pumpage may be sustained under the 1,000 mg/l chloride limit. However, the distribution of reclaimed wastewater is uncertain, which will affect chloride distributions and total nonpotable supply. Of the projected total 13 mgd of R-1 water from the Honouliuli Wastewater Reclamation Plant, 1 mgd is needed for in-plant process water, and 2 mgd is planned for industrial uses at James Campbell Industrial Park. This leaves about 10 mgd available for irrigation needs in the region.
Given the City's current plans, the staff estimates that the potential future supply of nonpotable water for irrigation uses on lands overlying the Puuloa Aquifer System, where the competition for nonpotable irrigation water is most severe, could be up to about 15 mgd: 10 mgd reclaimed water plus approximately 5 mgd natural sustainable yield (Bauer, 1996). This assumes that 100% of the treated effluent will be available for reuse in Puuloa, which is improbable. But the availability of reclaimed water will present permittees with a possible alternative should their wells exceed the 1,000 mg/l chloride limit. Likewise, should the 1,000 mg/l limit not be exceeded, the permittees may continue to pump and may even work out a management plan which would allow for alternating between caprock and wastewater reuse to maximize the economical use of both resources. But ultimately, based on current reclaimed water plans, total allocations for the Puuloa Aquifer System should not exceed 15 mgd. Current allocations in the Puuloa Aquifer System total 14.817.

WELL INTERFERENCE

Since there are no ground-water models (solute-transport) that can predict chloride response to pumpage at individual well sites, close monitoring of the resource and enforcement of the chloride cap is critical to protect the resource in this interim period while the City finalizes plans to fully implement its reclamation program. Exhibit 6 shows that the caprock aquifer was significantly influenced by sugarcane irrigation practices and is still in a state of flux. Currently, all interim permittees are required to submit weekly reports of pumpage, water levels, chlorides, and water temperature (unless a variance from this requirement has been approved). All permittees have been put on notice that the reporting requirement will be strictly enforced.

Although enforcement of the 1,000 mg/l chloride cap at each well site will provide adequate protection for the resource, it may not be sufficient to preclude well interference. However, not only will wastewater reuse further protect the resource, it will also help to reduce the effects of well interference that may cause individual wells to exceed the 1,000 mg/l chloride cap. Special Condition f. has been added to the existing interim permits recommended for extension and will be added to all future caprock permits to put the permittees on notice of the risk of reliance on caprock ground water and its uncertain sustainable yield.

The staff has been sending all interim permittees in Puuloa the monthly bulletin which shows all pending permit applications, which should provide the permittees sufficient notice of new proposed uses of Puuloa Caprock ground water. Permittees should review new applications and water data from other nearby wells to proactively protect their sources. Permittees are encouraged to submit comments or objections in accordance with Administrative Rule 13-171-18 (Objection to Proposed Water Use Permit). Further, the staff has been analyzing the weekly water data reports, and we are continuing to work on triggers to implement a water shortage plan. These triggers may be related to some modification of Exhibit 6. Should valid claims of well interference be raised, either by permittees or as a result of the staff's analysis, the Commission may consider implementing a water shortage plan to address the well interference issue.

At this time, only an informal and incomplete water shortage plan exists. On May 14, 1997, the Commission approved a permit classification system for a water shortage plan for the Puuloa Aquifer System as provided under Administrative Rule 13-171-42:

"(a) The commission shall formulate a plan for implementation during periods of water shortage. As a part of the plan, the commission shall adopt a reasonable system of permit
classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.

(b) In accordance with this chapter, the commission may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

(c) All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission."

For the Puuloa Aquifer System, the Commission established the highest priority of nonpotable use as agriculture because the State's policy is to promote agriculture, and also because agricultural correlative uses are assured through the 1978 Constitutional Amendment. The second priority in water use is golf course irrigation because of the economic impacts that may result from inadequate water supply. The lowest priority in water use is landscape irrigation and dust control.

Water shortage plans were requested from all of the users in Puuloa, with the exception of United States Fish and Wildlife Service. The requirement to submit individual water shortage plans is highlighted in the cover letter that transmits the permit and is also stated in Standard Condition 17. The staff will continue to work with users to develop their individual plans. As part of the May 14, 1997 action, the Commission has also delegated the authority to the Chairperson to approve individual water shortage plans and the regional water shortage plan for the Puuloa Aquifer System.

CHLORIDE CONCENTRATION TRENDS

The Commission staff established a caprock well monitoring network in 1993. Each month, the staff collects water level and chloride data at selected caprock wells. The staff’s analysis of the chloride trends at the individual wells and regionally is attached (Exhibit 7). The data show that the chloride concentration in the caprock water varies significantly from place-to-place and from well to well. Some of the reasons for these disparities include the subsurface geology, distance from the coast, well construction, pump capacity, and pumping schedule. Many of the sources have not exceeded the 1,000 mg/l chloride limit. The baseline data suggest that those wells that have exceeded the limit will continue to pump water exceeding 1,000 mg/l of chloride unless there is an influx of less saline water or a complete cessation of pumpage. The staff recommends that those operators with wells and/or batteries having >1,000 mg/l of chloride should apply for a variance from the established limit. Once reclaimed water is available, these wells should only be used for back-up purposes or for blending with reclaimed water to a quality of 1,000 mg/l of chloride or less.

Currently, variances from the chloride cap have been granted to Hawaii Prince Golf Club (Well Nos. 1900-02, 1901-17 to 20, 1901-03) and Pacific Tsunami Warning Center (Well No. 1900-23). In a letter dated August 7, 2000, The Estate of James Campbell (Campbell) requested that the Commission waive the salinity limit for its two nonpotable wells (Well Nos. 1905-08,10). The Commission denied the request on November 16, 2000 because Campbell was in the process of transferring the nonpotable system to the BWS and an alternative source (reclaimed water) would soon be in place. Negotiations are still ongoing for the transfer of the nonpotable water system. Chloride levels at the Campbell wells are now about 1,200 ppm. The staff is recommending that the Commission approve temporary variances from the chloride limit pending the implementation of the reclaimed water system for those users that have requested variances. Other users whose wells are close to the chloride cap may also request variances. Unless a variance is requested and approved, wells exceeding the chloride limit
must shut down. The staff’s recommendation on a variance request would be made with consideration to the well’s proximity to the ocean and to other wells, its history of chloride and pumpage, the availability of alternative sources of water and possibility for conversion. The staff is recommending that future variance requests be delegated to the Chairperson for disposition.

RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 4, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

   a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

   b. 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.

   c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted.

   d. The duration of the interim permit shall be
      a) to July 1, 2006, or
      b) until treated wastewater is available and acceptable for use, or
      c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

   e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

   f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

   g. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data.

   h. Require adherence to the Conservation Conditions shown in Exhibit 9.

   i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. Grant variances from the 1,000 mg/l chloride limit to Hawaii Prince Golf Club (Well Nos. 1900-02, 1900-17 to 20, 1901-03), Pacific Tsunami Warning Center (Well No. 1900-23), and
The Estate of James Campbell (Well Nos. 1905-08,10). The variances shall expire six (6) months after the first date of reclaimed water service delivery.

3. Delegate the authority to the Chairperson to approve future variance requests.

4. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

5. Suspend the four-year period of nonuse for the Hawaii Prince Golf Club, Coral Creek Golf Course and Barber's Point Golf Course, beginning from the first date of reclaimed water service delivery under their agreement with the Board of Water Supply. The suspension will be for the duration of these interim permits or until the agreement with Honolulu Board of Water Supply for reclaimed water service delivery ends whichever comes first. This condition shall apply to any other interim permittee that converts to reclaimed water service.

Respectfully submitted,

LINNEL T. NISHIOKA
Deputy Director

Attachment(s): A (Standard Conditions for a Water Use Permit)

Exhibit(s): 1 (Interim Permittees and Landowners at the Source Location)
2 (Well Location Map)
3 (Standard and Special Conditions, approved October 28, 1998)
4 (Interim Permitted Uses, Puuloa and Kapolei Aquifer Systems)
5 (Graphs of Reported Pumppage and Chlorides)
6 (Chloride and Pumppage of Ewa Plantation Shallow Wells)
7 (Chloride Concentration Trends)
8 (Chloride Sampling Protocol)
9 (Conservation Conditions)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 20, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:

ATTACHMENT A
a. protect the water sources (quantity or quality);
b. meet other legal obligations including other correlative rights;
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the applicable aquifer system's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the applicable aquifer system, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is reduced and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage
pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the applicable Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
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<td>SAME</td>
<td>650 S. KING ST.</td>
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<tr>
<td>CAMPBELL ESTATE</td>
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<td>SAME</td>
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EXHIBIT 2
EWA CAPROCK INTERIM PERMITS
Special Conditions
(approved on October 22, 1998)

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol (Attachment C) and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions (Attachment D).

EXHIBIT 3
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;

EXHIBIT 3
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;

f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or

g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the Puuloa or Kapolei Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa or Kapolei Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:

a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and

b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance
of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
Aquifer System Water Use Permit Index

**ISLAND OF OAHU**

<table>
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<tr>
<th>WUP No</th>
<th>Approved</th>
<th>Applicant</th>
<th>Well No.</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
<th>12-MAY (mgd)</th>
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Summary for 'SYSTEM' = KAPOLEI (8 detail records)

| WMA Aquifer System: PUULOA | | | | | | |
| 469 | 1/14/98 | HAWAII PRINCE GOLF CLUB | 1900-02 | EP 22 | 0.301 | 0.160 |
| 469 | 1/14/98 | HAWAII PRINCE GOLF CLUB | 1900-17 | WELL 2 | 0.352 | |
| 469 | 1/14/98 | HAWAII PRINCE GOLF CLUB | 1900-18 | WELL 3 | 0.120 | |
| 469 | 1/14/98 | HAWAII PRINCE GOLF CLUB | 1900-19 | WELL 4 | 0.053 | |
| 469 | 1/14/98 | HAWAII PRINCE GOLF CLUB | 1900-20 | WELL 5 | 0.055 | |
| 501 | 8/26/98 | U.S. DOC/NOAA/NWS | 1900-23 | PACIFIC TSUNAMI | 0.023 | N/R |
| 469 | 1/14/98 | HAWAII PRINCE GOLF CLUB | 1901-03 | WELL 1 | 0.369 | |
| 505 | 10/22/98 | GENTRY HOMES, LTD. | 1901-05 | GENTRY AREA 13 | 0.056 | N/R |
| 347 | 5/14/97 | HASEKO (EWA), INC. | 1902-01 | HASEKO WELL NO. | 1.5 | N/R |
| 167 | 5/14/97 | C&C DEPT. OF PARKS & REC | 2001-03 | GEIGER PARK | 0.03 | N/R |
| 302 | 5/14/97 | GENTRY DEVELOPMENT CO. | 2001-04 | SUNRISE APT. | 0.04 | 0.013 (12/00) |
| 450 | 5/14/97 | EWA BY GENTRY COMM ASSOC | 2001-05 | SODA APT. | 0.066 | 0.037 |
| 171 | 5/14/97 | ARBORS ASSOCIATION | 2001-07 | ARBORS | 0.063 | 0.041 (12/00) |
| 168 | 3/13/96 | PALM VILLA II ASSOCIATION | 2001-08 | PALM VILLA 2 | 0.048 | 0.045 |
| 344 | 5/14/97 | GENTRY DEVELOPMENT CO. | 2001-09 | FORT WEAVER APT | 0.023 | 0.023 (12/00) |
| 355 | 5/14/97 | GENTRY DEVELOPMENT CORP | 2001-10 | GENTRY AREA 24 | 0.022 | N/R |
| 504 | 11/18/98 | GENTRY HOMES, LTD. | 2001-12 | KEAUNUI (AREA 30 | 0.249 | N/R |
| 578 | 5/14/97 | CORAL CREEK GOLF, INC. | 2001-13 | CORAL CREEK NO | 0.8 | 0.499 |
| 579 | 5/14/97 | CORAL CREEK GOLF, INC. | 2001-14 | CORAL CREEK NO | 0.892 | N/R |
| 169 | 5/14/97 | PALM COURT ASSOCIATION | 2002-12 | PALM COURT 3 | 0.04 | N/R |
| 579 | 5/14/97 | CORAL CREEK GOLF, INC. | 2002-15 | CORAL CREEK NO | 0.183 | |
| 577 | 5/14/97 | CORAL CREEK GOLF, INC. | 2002-17 | CORAL CREEK NO | 0.498 | 0.150 |
| 579 | 5/14/97 | CORAL CREEK GOLF, INC. | 2002-17 | CORAL CREEK NO | 0.150 | |

Totalling 2.033 1.552

Monday, May 21, 2001
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Summary for 'SYSTEM' = PUULOA (25 detail records)

| Totaling | 4.867 | 3.468 |

Monday, May 21, 2001
Hawaii Prince G.C. Combined Pumpage
(Well Nos. 1900-02, 17 to 20; 1901-03)

EXHIBIT 5

--- 12-MAV
--- WUP
--- combined monthly withdrawal

date (latest lata 04/01)
Haseko (Ewa) Inc. Pumpage (EP27)
Well No. 1902-01
Campbell Estate Caprock Pumpage
Kapolei Irr. Wells 1&2 (1905-08,10)

Combined Monthly Pumpage

12-MAV

WUP

1905-08 Chloride

Combined Monthly Pumpage

12-MAV

WUP

1905-08 Chloride
Ewa By Gentry Community Association
Soda Creek III (Well No. 2001-05)

The diagram shows the monthly values of pumpage (mgd) and chloride (mg/l) from 1995 to 2001. The latest data is from April 2001. The graph includes a line for pumpage, a line for chloride, and a line for the 12-MAV. The monthly values are indicated by circles, and the WUP is represented by a solid line. The chloride values are below the pumpage values, with a peak in 1997.
Gentry Pacific, Ltd. Pumpage
Coronado Well (Well No. 2001-09)

date (latest data 12/00)

monthly values  WUP  12-MAV
Coral Creek Golf Course Withdrawals
Well 4 (2001-13)

pumpage (mgd)

chloride (mg/l)

date (latest data 4/01)

- pumpage (mgd)  - 12-MAV  - max chloride level
Coral Creek Golf Course Withdrawals
Well 1 (2002-15)

Date (latest data 4/01)

- Pumpage (mgd)
- 12-MAV
- Max chloride level
Coral Creek Golf Course Withdrawals
Well 2 (2002-17)

EXHIBIT 5

pumpage (mgd)  12-MAV  max chloride level

date (latest data 4/01)
State HCDCH Kapolei Wells
Well Nos. 2003-04,07 Combined

Pumpage (mgd)

Chloride (mg/l)

Date (latest data 4/01)

Monthly pumpage

12-MAV

2003-04 CI

2003-07 CI

WUP
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Start

Basal (high Cl) irrigation

Initial caprock Cl (average year)

Basal (low Cl) irrigation

Stop

Chloride Concentration (mg/l)

Average Yearly pumpage (mgd)

Year

EP-20

EP-21

EP-22

EP-23

EP-24

Gentry Palm Villa 1

Kapolei Golf B

Ref: CWRM, BWS files, & R-79
MEMORANDUM FOR THE RECORD

FROM: Glenn Bauer

SUBJECT: Chloride Concentration Trends in the Ewa Caprock Aquifer

Background

Commission staff has been collecting water samples from various wells and well batteries within the caprock aquifer from Puuloa to Malakole since 1993. Our baseline sampling effort began before the demise of Oahu Sugar Company in 1994, and was augmented by the required reporting of weekly chlorides by caprock water users.

The end of sugar cultivation on the Ewa Plain brought with it an end to the importation of low to moderate salinity basal ground water for irrigation. Prior to 1994, when drip irrigation practices were employed, the estimated return irrigation component from basal ground water was 16 mgd (Mink, 1989) with 8 mgd going to the Puuloa area and 8 mgd going to the Kapolei-Malakole area. At the same time, the plantation pumped an average of 14 mgd (Bauer, 1996) from their shallow wells. After 1994, ground-water input to the caprock included natural inflow from the basal aquifer into the caprock and direct recharge from rainfall and storm runoff. Various authors report a range of natural inflow into the caprock from the basalt. Most of these numbers were derived by numerical models or by salinity mixing model equations and are small when considered on a flux/mile basis. Estimates range from <1 mgd to 3± mgd/mile (Bauer, 1996). Long-term annual average rainfall input over the Ewa Plain has been estimated to be about 5± mgd (summary of results in Bauer, 1996). In addition, long-term annual average for storm runoff recharge over the caprock from Kaloi and Makakilo Gulches was estimated to be between 1 and 2 mgd (Mink, 1989).

In 1997 the Commission adopted a 1,000 mg/l chloride cap for individual wells developing caprock water. The reasoning behind this cap was to limit pumpage in those wells approaching the limit and to prevent a sodium build-up in the clay soils which would adversely affect the growth of certain grasses for golf courses, and to protect other users adjacent to those using higher chloride water.

Chloride Trends Since 1994 East of Fort Weaver Road

The chloride concentration in the caprock water varies significantly from place-to-place, and from well to well. Some of the reasons for these disparities include the subsurface geology, distance from the coast, well construction, pump capacity, and pumping schedule.

Generally, those pumping batteries that have long-term records, are east and south of Fort Weaver Road and Iroquois Point Road respectively, show a rising trend in
chlorides over time. This trend is partly due to irrigation practices and partly due to the lack of recharge of fresher water into the aquifer and proximity to the shoreline.

Ewa Beach International Golf Club

For Ewa Beach International, chlorides have risen from a low of 1,000 mg/l in late 1996 (due to recharge from a large storm on Election night) to 1,800± mg/l at the present time. CWRM staff samples Well No. 1900-21 at a 1-acre pond (Pond E). Evaporation from the pond undoubtedly affects chloride concentration. Pumpage from this source is less than 1 mgd.

Hawaii Prince Golf Club

Hawaii Prince Golf Club pumps water from 6 wells. Total average pumpage is slightly greater than 1 mgd. CWRM staff typically samples the wells after they have been running for several hours. Hawaii Prince Irrigation Wells 1-5 (1901-03, 1900-17-20) and EP-22 (1900-02). Chloride concentration in Hawaii Prince Wells 1 and 2 have remained relatively stable over the period of record. Well 1 remains about 1,000 mg/l, while Well 2 changed from about 1,000 mg/l in 1994 to 1,200± mg/l at the present time. Wells east of Well 2 are much more saline. The magnitude of the increase in salinity has ranged from 300 mg/l (Well 3) to 500 mg/l (Well 5 and EP-22) over the period of record.

U. S. Fish and Wildlife Well 2101-14

This well is north of Iroquois Point Road. Average pumpage is less than 0.5 mgd. The chloride concentration has shown an improvement since 1996 and remains stable at 1,000± mg/l.

Chloride Trends Since 1994 West of Fort Weaver Road

Gentry Wells

CWRM staff has monitored 5 of the 9 wells developed by Gentry. These wells are low capacity and are used exclusively for irrigation of the common areas within each development. Total Gentry pumpage is less than 0.5 mgd. Since 1997, chloride concentration has remained consistently between 400 and 800 mg/l, well below the 1,000 mg/l cap. The wells monitored are Palm Villa I (2001-06), Palm Villa II (2001-08), Palm Court III (2002-12, monitoring discontinued in 1997), Sunrise (2001-04), and Sun Terra (2001-05). Pump capacities for these wells range from 100-110 gpm.

Haseko EP-27 Well (1902-01)

CWRM staff began monitoring this source in 1994 just after the closing of Oahu Sugar. Static (non-pumping) samples were collected from the open pit near the pump house. Chlorides ranged from 800 to 900 mg/l. In 1997, Haseko began to pump this source at rates approaching 2 mgd. The average rate is about 1 mgd. Chloride
concentration remains stable at 900± mg/l. The stable nature could be that the pumping source skims the top water from the pit.

**Coral Creek Golf Course**

In 1998, several large pits were excavated and noted north and south of Geiger Road just east of the Hoonouliuli STP. These pits and drilled wells became part of the Coral Creek battery. Water from the pits is used for water features and for a back-up source (Lake Well 1, 2002-19). Coral Creek Golf Club irrigates using water from Coral Creek Well 1 (2002-15), Coral Creek Well 2 (2002-17), and Coral Creek Well 4 (2001-13). Pumpage is slightly greater than 1 mgd; however, the chloride concentration from the sources ranges between 1,000 mg/l to almost 4,000 mg/l at Well 2. According to golf course personnel, Well 4 pumps the least amount and is the most stable in terms of chloride concentration. It was also noted by golf course personnel that the longer Well 1 and 2 pumps, the saltier the water becomes. Pump capacities for these wells are high. Coral Creek 1 and 2 have 800 gpm pumps, while Coral Creek 4 has a 1,000 gpm pump.

High evaporation rate (close to 90 inches/year) in the Ewa Plain could cause the salinization of the lakes, which, in turn, could be the reason for the high chlorides localized at Well 1 and 2. However, the chloride samples taken from the Lake Well 1 show concentrations ranging from 1,000 to 1,200 mg/l. At the present time, Coral Creek’s saline water does not seem to affect the Gentry sources to the east.

**Chloride Trends Since 1994 in the Kapolei Region**

**HFDCH Kapolei Golf Course**

The Kapolei Golf Course utilizes Kapolei Irrigation Wells A, B, C, D, E, and C-I (well nos. 2003-01-05, 07). Well C-I is a replacement well for Well C. Chlorides have been remarkably stable, hovering between 200± mg/l to 600 mg/l, with little variation or trends. It is thought that basal ground-water inflow from the Waianae aquifer in conjunction with a thin caprock is responsible for the stability of the water chemistry in this area. Variations in pumpage are seasonal, but average about 1 mgd.

**Kapolei City Wells**

Campbell Estates’ Kapolei City Wells (1905-08, 10) supply irrigation water for Kapolei. Average daily pumpage is less than 0.5 mgd. Since 1995 chloride concentrations in both wells have been rising from 600 mg/l to 1,200-1,400 mg/l at the present time. Well 1905-08 (east well) water quality is slightly better than 1905-10. Duration of pumpage prior to sample collection probably influences the chloride concentration. However, it is evident that the overall trend is upwards.

**Conclusions**
Since the cessation of sugar irrigation the common chloride trend is generally a linear increase for wells that exceed the 1,000 mg/l cap. The long-term prognosis for these wells will be a continued increase in salinity. However, there are several well batteries and wells that do not fit this trend (e.g. U.S. Fish and Wildlife, Gentry, Haseko, HFDCH Kapolei), and exhibit remarkable chloride stability. The scatter of chloride data associated with Coral Creek cannot be easily explained. Bottom hole elevations are not as great as some of the Gentry Wells, yet the chlorides are much greater and the sensitivity of chloride concentration to pumpage suggest that localized upconing, in conjunction with the high pump capacities, is taking place. Moreover, the relationship of the large lakes (surface evaporation) to the wells is not clearly understood and could play a role in contributing to the pool of high chloride ground water.

As stated above, many of the sources have not exceeded the 1,000 mg/l cap. Those that have, the baseline data suggest that these wells will never pump ≥1,000 mg/l again unless there is an influx of less saline water (e.g. reuse, an increase of recharge from storms i.e. a more normal weather pattern) or a complete cessation of pumpage. In the meantime, those operators with wells and/or batteries >1,000 mg/l chloride should apply for a variance from the 1,000 mg/l cap. It should be implicitly stipulated that once reuse is available, then these wells will only be used as back-up sources or blended with reuse water to a quality of 1,000 mg/l or less.

References:


Hawaii Prince Golf Course
Pumpage and Chlorides

Graph showing data for pumpage and chlorides over time.
U.S. Fish and Wildlife Well 2101-14
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

Month/Year

1,000 Cl Cap
Haseko EP 27
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

Month/Year

1,000 Cl Cap  •  EP27 Pit  •  EP 27 Pipe
Coral Creek Golf Course
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year

1,000 Cl Cap • Lake Well 1 ■ Well 2 ▼ Well 1 × Well 4
HFDCH Kapolei Golf Course
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year

1,000 Cl Cap • Irr. Well A □ Irr. Well B ▼ Irr. Well C

Irr. Well C-1 ▲ Irr. Well D + Irr. Well E
Kapolei City Wells (Campbell Estate)
Pumpage and Chlorides

- 1,000 Cl Cap
- Well 1905-10 (West Well)
- Well 1905-08 (East Well)
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

- Sampling Schedule

  The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

- When to Sample

  Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

- Sample Bottle

  Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

- Labeling

  On the sample bottle, affix a label that contains the following information:

  Well No.
  Date
  Time Sampled
  Elapsed Time after pump on
  Sampler's Name
  Water Temperature (if available)
  Pumping Rate (prior to sampling)
2. **Determination of Chloride Concentration**

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. **Be consistent with the end-point color change.**

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** **Be consistent with the end-point color.** Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.

**EXHIBIT 8**
3. **Reporting Results**

- **How to Report**

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

   Under "Notes" Section of the Monthly Water Use Report:

2. Method used for chloride analysis: ________________

3. Total elapsed time before sampling: ________________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
<table>
<thead>
<tr>
<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>10-20</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>20-50</td>
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<td>10-20</td>
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<td></td>
<td>500-700</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>700-1000</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>&gt;1000</td>
<td>72</td>
</tr>
</tbody>
</table>

1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:

      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:

      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 9
MEMORANDUM FOR THE RECORD
November 1, 2000

FROM: Lenore Nakama
SUBJECT: Unregistered Injection Well at Ewa Marina Project

Chauncey Hew from DOH, UIC called to give a heads up that this letter was coming. In responding to a complaint of an illegal injection well, DOH conducted a field investigation and found that EP 27 appeared to be pumping continuously to a lined pond with an injection well. The lined pond provides storage for dust control water and the excess water is being reinjected back into the aquifer.

Per Glen, there is a lot of construction going on in the area, and Haseko may be keeping the pump operating to avoid someone having to run out and turn the pump on everytime a truck needs to refill (which may pose a danger because of all the heavy trucks operating in the area).

Per Roy, the well is being used for one of its permitted uses – dust control. Excess water is being pumped back into the aquifer for recharge. Haseko may have chosen to incur higher pumping costs for more efficient dust control during construction. We should monitor the chlorides to ensure that they remain below 1,000 ppm. We do not necessarily consider this a waste of water.
October 11, 2000

Mr. Nelson W.G. Lee
Executive Vice President
Haseko (Ewa), Inc.
820 Mililani Street, Suite 810
Honolulu, Hawai‘i 96813

Dear Mr. Lee:

SUBJECT: OPERATION OF AN UNREGISTERED INJECTION WELL AT HASEKO EWA MARINA PROJECT

We have observed on your property what appears to be an unregistered injection well located in the center of a lined pond used to store water to fill water trucks. The injection well appears to function as an overflow drain to prevent the pond from overflowing as piped water continuously flows into the pond. The injection well casing is PVC and has a diameter of about 8 to 10 inches. The portion of the casing that was visible contained small drill-hole perforations. The top of the casing was open. The length (depth) of the casing could not be observed.

Enclosed is an Underground Injection Control (UIC) permit-application form to register the injection well with a UIC permit. The operation of an injection well must be authorized through a UIC permit issued by the Department of Health to the operator/owner (permittee) of the injection well. A UIC permit contains the term and conditions under which the permittee must comply to operate the injection well. Monitoring and reporting requirements are specifically described in the UIC permit. When the use of the injection well is finished, the permittee must apply for well abandonment, and the Department will issue specific injection well abandonment instructions.
Regulations governing an injection well are under the Hawai'i Administrative Rules (HAR), Title 11, Chapter 23, Underground Injection Control. A copy of the rule (Chapter 23) is enclosed for your reference.

Please submit a complete application and filing fee, payable to the State of Hawai'i, by November 10, 2000. Because the application involves hydraulic, geologic, and injection well design and construction subjects, we recommend that an appropriate person be used to complete and service the UIC application. A complete and accurate application expedites processing.

Please mail your materials to:

Safe Drinking Water Branch
Environmental Management Division
State Department of Health
919 Ala Moana Blvd., Room 308
Honolulu, Hawai'i 96814

If you have any questions about this subject, please call Chauncey Hew of the Safe Drinking Water Branch at 586-4258.

Sincerely,

[Signature]

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

CH:sa

Enclosures:
1. Existing Injection Well Application For A UIC Permit To Operate & Instructions
2. Chapter 23
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<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postage</td>
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<td>Certified Fee</td>
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<td>Special Delivery Fee</td>
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</tr>
<tr>
<td>Restricted Delivery Fee</td>
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</tr>
<tr>
<td>Return Receipt Showing to Whom &amp; Date Delivered</td>
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</tr>
<tr>
<td>TOTAL Postage &amp; Fees</td>
<td>$ 3.23</td>
</tr>
</tbody>
</table>

TOTAL Postage & Fees $ 3.23

Postmark or Date: FEB 19 1999
1. Place a label to cover first class postage.

2. Optional services (see front):

a. To request that the gummed stub be the right of the return address, place article at a post office service window or hand it in:

b. For purchase, attach the gummed stub to the right of the return address and return the receipt, and mail the article.

c. Write the certified mail number and your name and address on a self-adhesive label (Code 3381), and attach it to the front of the article by means of the gummed stub in the appropriate box. Envelope front of article RETURN RECEIPT REQUESTED label in the number.

3. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse RESTRICTED DELIVERY on the front of the article.

4. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 3 of Form 3811.

5. Save this receipt and present it if you make inquiry.
**SENDER:**
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write “Return Receipt Requested” on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

3. Article Addressed to:
   - Mr. Nelson W.G. Lee
   - Haseko (Ewa), Inc.
   - 820 Mililani St., Ste. 810
   - Honolulu, HI 96813

(Well #1902-01)

5. Signature (Addressee)
   - D Linden

6. Signature (Agent)

<table>
<thead>
<tr>
<th>I also wish to receive the following services (for an extra fee):</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ☐ Addressee’s Address</td>
</tr>
<tr>
<td>2. ☐ Restricted Delivery</td>
</tr>
<tr>
<td>Consult postmaster for fee.</td>
</tr>
</tbody>
</table>

4a. Article Number
   - Z 066 768 201

4b. Service Type
   - ☑ Certified
   - ☐ Registered
   - ☐ Insured
   - ☐ COD
   - ☐ Express Mail
   - ☑ Return Receipt for Merchandise

7. Date of Delivery
   - 2/25/99

8. Addressee’s Address (Only if requested and fee is paid)
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani Street, Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Notice of Action
Proposed Revocation/Modification of Water Use Permit (WUP No. 192)
Proposed Extension of Interim Water Use Permit (WUP No. 347)
EP 27/Haseko Well No. 1 (Well No. 1902-01)
Puuloa Ground Water Management Area, Oahu

This corrects our previous Notice of Action, dated October 27, 1998, on the staff’s proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01).

Our previous notice was correct where by a unanimous vote of the Commission at their meeting of October 22, 1998, the Commission deferred action on WUP No. 192 at the request of the Attorney General’s Office pending a legal analysis of what process is required to modify conditions of a permit that was the subject of a contested case hearing.

However, the Commission also extended WUP No. 347, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.
d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected
      uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become
   available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol (Attachment B) and the
   submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions (Attachment C).

The Commission decided that interim permittees shall be notified by letter of the
Commission action and extended permit duration and that re-issuance of new interim water use
permits for these extended permits is unnecessary.

Please be advised that the Commission directed staff to strictly enforce the weekly water
data reporting requirement and the requirement to submit a water shortage plan. (If you have not
done so already, please submit your water shortage plan, as required under Standard Condition
17.) In addition, all interim permittees will be sent the monthly bulletin which shows all pending
permit applications. Permittees are encouraged to review new applications and water data from
nearby wells to proactively protect their sources.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

Edwin T. Sakoda
Acting Deputy Director

LN:ss
Attachments
November 13, 1998

Timothy Johns, Esq.
Deputy Director
Department of Land & Natural Resources
Kalanikaua Building
1151 Punchbowl Street
Room 227
Honolulu, HI 96813

RE: Proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01)

Dear Mr. Johns:

Thank you for your October 27, 1998 letter informing us that the Commission deferred action on the subject water use permits at the October 22, 1998 Commission meeting. We appreciate the consideration given to our unique situation, given our contested case hearing and the recent final decision and order.

This is to inform you that Haseko (Ewa), Inc. is willing to voluntarily reduce its WUP No. 192 to the 0.770 mgd amount recommended by your Staff.

We understand that your Staff recommends that:

1. The 1.8 mgd permanent allocation for agricultural uses, currently existing under WUP 192, be reduced to 0.770 mgd under a new interim water use permit; and

2. The existing 1.5 mgd interim water use permit, WUP No. 347, be extended subject to the conditions listed in the Staff Submittal (Extension of Water Use Permits, Puuloa and Kapolei Ground Water Management Areas, Oahu) dated October 22, 1998.
Haseko (Ewa), Inc. has reviewed the staff submittal in connection with the final decision and order in the contested case, which refers specifically to the subject WUPs by number. Based on that review and mindful of Staff's recommendations, we believe that WUP No. 192 and WUP No. 347 should retain the same identification numbers and classifications (permanent and interim, respectively), but the allocation under WUP No. 192 may be reduced to 0.770 mgd as recommended by your Staff. Under our voluntary reduction in allocation, WUP No. 192 would remain a permanent permit but at a reduced allocation of 0.770 mgd and interim WUP No. 347 would be extended as recommended by your Staff.

Thank you for your consideration and cooperation. Please call me if there is any further action required on our part to implement the reduction for WUP No. 192.

Very truly yours,

Nelson W. G. Lee
Executive Vice President

cc: Linnel Nishioka, Esq.
    Angela Fong, Esq.
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani Street, Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Notice of Action
Proposed Revocation/Modification of Water Use Permit (WUP No. 192)
Proposed Extension of Interim Water Use Permit (WUP No. 347)
EP 27/Haseko Well No. 1 (Well No. 1902-01)
Puuloa Ground Water Management Area, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on the staff's proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01).

By a unanimous vote of the Commission at their meeting of October 22, 1998, the Commission deferred action on WUP Nos. 192 and 347 at the request of the Attorney General's Office pending a legal analysis of what process is required to modify conditions of a permit that was the subject of a contested case hearing.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

TIMOTHY E. JOHNS
Deputy Director

LN:ss
STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

October 22, 1998
Honolulu, Oahu

Haseko (Ewa), Inc.

REVOCATION/MODIFICATION OF WATER USE PERMIT
EP 27, Well No. 1902-01 (WUP No. 192)
Puuloa Ground Water Management Area, Oahu, TMK 9-1-12:5

LOCATION MAP: See Exhibit 1

BACKGROUND:

On December 16, 1992, the Commission approved a water use permit (WUP No. 192) for Well No. 1902-01 for Oahu Sugar Company, Ltd. (OSCO) as water user jointly with Haseko Hawaii, Inc. as source landowner for 4.160 mgd.

In the summer of 1993, OSCO announced the closure of its sugarcane operations.

On May 18, 1994, Haseko (Ewa), Inc. (Haseko) submitted a completed water use permit application to modify WUP No. 192 to allow 1.500 mgd of ground water to be used for construction and operation of a proposed 27-hole golf course and roadway landscaping for the Ewa Marina project, including interim use for dust control and maintenance irrigation for fallow fields. The remaining allocation would be retained for agricultural use.

On July 13, 1994, the Commission approved WUP No. 347 for 1.500 mgd. WUP No. 192 was modified and reduced to 2.660 mgd for agriculture use.

In a letter dated May 12, 1995, Haseko notified the Commission of the transfer of the water use permit(s) (WUP Nos. 347 and 192) for Well No. 1902-01 from OSCO, effective April 1, 1995.

On May 14, 1997, the Commission modified WUP No. 192 by reducing the permitted use for agriculture from 2.660 mgd to 1.800 mgd (Exhibit 2).
ANALYSIS/ISSUES:

Exhibit 3 shows that the pump was shut off in September, 1994 and remained inactive for about two (2) years. Haseko has since planted about 100 acres of hay as an interim land use pending the development of the Ocean Pointe project (formerly Ewa Marina). The current twelve-month moving average withdrawal for agriculture is 0.770 mgd.

Partial or total nonuse of the water allowed by the permit for a period of four continuous years or more constitutes a ground for revocation of the permit, pursuant to §174C-58(4) Hawaii Revised Statutes (HRS). In the four (4) years since the pump was completely shut off, only 0.770 mgd of the 1.800 mgd agricultural allocation has been used. As such, the Commission may revoke 1.030 mgd at this time.

The guideline for turf irrigation in the Ewa area is between 4,000 gpd/acre (Hawaii Water Systems Standards, 1985 - Domestic Consumption Guideline) and 4,700 gpd/acre (May 14, 1997 Staff Submittal - Hawaii Prince Request for Variance from Domestic Consumption Guideline). Based on these guidelines, 0.400 mgd to 0.470 mgd would appear reasonable for 100 acres of hay in the Ewa area. The staff could not confirm whether the agricultural operations have expanded, which could account for the current 0.770 mgd 12-month moving average withdrawal. However, this is for an existing agricultural use that is a temporary use pending the construction of the Ocean Pointe project. Should the Ewa Marina be excavated as proposed, Haseko concedes that the utility of the well would be lost. The staff is planning to investigate the agricultural operations for any obvious signs of wastage during their next monthly sampling run.

The terms and conditions of WUP No. 192 are shown in Exhibit 2. The staff recommends that the Commission replace the standard and special conditions of WUP No. 192 with the set of conditions that have been attached to permits for new irrigation uses in the Ewa Caprock because:

1) hydrologic conditions have changed since this permit was originally granted - Exhibit 4 shows that the 1992 approval occurred when low chloride basal water was being imported to the caprock by OSCO, which artificially enhanced the caprock aquifer. Although chlorides at some EP wells were already beginning to rise, the complete cessation of sugarcane agriculture will diminish the reliability of the aquifer and users’ ability to pump; and

2) reclaimed water will soon become available as an alternate nonpotable supply source.

This submittal fulfills the hearing requirement under §174C-58 HRS for revocation of a water use permit.

RECOMMENDATION:

That the Commission approve the issuance of an interim water use permit (WUP No. 518) to Haseko (Ewa), Inc. for the reasonable and beneficial use of 770,000 gallons per day of brackish water for agricultural use from EP 27 (Well No. 1902-01), subject to the Standard Water Use Permit Conditions listed in Attachment B and the following Special Conditions:
1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

2. 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.

3. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

4. The duration of the interim permit shall be to
   a. to July, 2001, or
   b. until treated wastewater is available, acceptable, and affordable for use, or
   c. until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

5. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

6. Require adherence to the chloride sampling protocol shown in Exhibit 5 and the submittal of weekly chloride data.

7. Require adherence to the Conservation Conditions shown in Exhibit 6.

8. In the event a water shortage is declared by the Commission, permittees shall comply with the Puuloa water shortage plan adopted by the Commission.

9. This water use permit, WUP No. 518, supersedes WUP No. 192.

Respectfully submitted,

TIMOTHY E. JOHNS
Deputy Director

Attachment(s): A (Standard Water Use Permit Conditions)

Exhibit(s):
1 (Location Map)
2 (WUP No. 192)
3 (Graph of Monthly Pumpage for Well No. 1902-01)
4 (Chloride and Pumpage of Ewa Plantation Shallow Wells, 1930-1995)
5 (Chloride Sampling Protocol)
6 (Conservation Conditions)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

ATTACHMENT A
10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

ATTACHMENT A
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Millilani St., Suite 810  
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well No. 1902-01  
Puuloa Ground Water Management Area, Oahu

This letter transmits your modified water use permit for EP 27 (Well No. 1902-01) for use of 1,800 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. Standard Condition 18 for interim water use permits shall not apply.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

In addition, the Commission is requiring you to conduct a pump test by June 14, 1997 to confirm that the source can sustain withdrawals at the modified permitted amount without exceeding 1,000 mg/l of chloride. The Commission has delegated the authority to approve or modify the proposed pump test procedure to the Commission staff.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

MICHAEL D. WILSON  
Chairperson

Attachments

EXHIBIT 2
# GROUND WATER USE PERMIT

**WUP NO. 192**

## PERMITTEE

<table>
<thead>
<tr>
<th>Applicant/Water User</th>
<th>Landowner of Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Address</strong></td>
<td><strong>Address</strong></td>
</tr>
<tr>
<td>HASERK (EWA), INC.</td>
<td>HASERK (EWA), INC.</td>
</tr>
<tr>
<td>820 MILILANI ST., SUITE 810</td>
<td>820 MILILANI ST., SUITE 610</td>
</tr>
<tr>
<td>HONOLULU, HI 96813</td>
<td>HONOLULU, HI 96813</td>
</tr>
</tbody>
</table>

## PERMITTED SOURCE INFORMATION

<table>
<thead>
<tr>
<th>Island</th>
<th>Water Management Area</th>
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</thead>
<tbody>
<tr>
<td>OAHU</td>
<td>PUUOIA</td>
</tr>
<tr>
<td>Water Management Area</td>
<td>Aquifer Sector</td>
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<tr>
<td>PULUOIA</td>
<td>EWA CAPROCK</td>
</tr>
<tr>
<td>Aquifer Sector</td>
<td>Aquifer System</td>
</tr>
<tr>
<td>PULUOIA</td>
<td>PUUOIA</td>
</tr>
<tr>
<td>Aquifer System</td>
<td>System Sustainable Yield</td>
</tr>
<tr>
<td>PULUOIA</td>
<td>NA</td>
</tr>
<tr>
<td>System Sustainable Yield</td>
<td>Well Name</td>
</tr>
<tr>
<td>PULUOIA</td>
<td>EP 27</td>
</tr>
<tr>
<td>Well Name</td>
<td>State Well No.</td>
</tr>
<tr>
<td>PULUOIA</td>
<td>1902-01</td>
</tr>
</tbody>
</table>

## PERMITTED USE INFORMATION

<table>
<thead>
<tr>
<th>Reasonable beneficial use</th>
<th>AGRICULTURE</th>
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</thead>
<tbody>
<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>1.800 mgd</td>
</tr>
<tr>
<td>Chloride Cap</td>
<td>1.000 mg/l</td>
</tr>
<tr>
<td>Location of water use</td>
<td>OSCO FIELDS 71,84,86,88,(POR)</td>
</tr>
<tr>
<td>TMK #</td>
<td>EWA, OAHU</td>
</tr>
<tr>
<td>Address</td>
<td>URBAN</td>
</tr>
<tr>
<td>State land use classification</td>
<td>P-2, RESORT, R-5, B-2, A-1, A-2</td>
</tr>
<tr>
<td>County zoning classification</td>
<td></td>
</tr>
</tbody>
</table>

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:

EXHIBIT 2
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest" (HRS § 174C-3).

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.

EXHIBIT 2
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ____________________________ Date: ____________________

Printed Name: ____________________________ Firm or Title: ____________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

FIGURE 7

Ref: CWRM, BWS Bls., R-79, & Stearns (1935, 1940)
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

- Sampling Schedule

The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

- When to Sample

Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

- Sample Bottle

Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

- Labeling

On the sample bottle, affix a label that contains the following information:

Well No.
Date
Time Sampled
Elapsed Time after pump on
Sampler's Name
Water Temperature (if available)
Pumping Rate (prior to sampling)
2. Determination of Chloride Concentration

- Private Laboratories

If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

Private laboratories will use methods that are more accurate than field methods described below.

- Hach Kit (Drop Count Titrator)

Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. Be consistent with the end-point color change.

For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- Hach Kit (Digital Titrator)

A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

Note: Be consistent with the end-point color. Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- Other Methods

An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. Reporting Results

- How to Report

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

Under "Notes" Section of the Monthly Water Use Report:

2. Method used for chloride analysis:______________

3. Total elapsed time before sampling:______________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
## FIVE WELL VOLUMES\(^1\) PLUS 60 MINUTES MINIMUM TIME BEFORE CHLORIDE SAMPLING

<table>
<thead>
<tr>
<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
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</thead>
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<tr>
<td>6</td>
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<td>140</td>
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<tr>
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<td>700-1000</td>
<td>72</td>
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<tr>
<td></td>
<td>&gt;1000</td>
<td>72</td>
</tr>
</tbody>
</table>

\(^1\) Assumes saturated well depth of 100 feet.

\(^2\) Five well volumes is a standard guideline recommended by EPA.

EXHIBIT 5
1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:

      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:

      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
STATE OF HAWAI‘I
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 827
HONOLULU, HAWAI‘I 96808

STAFF SUBMITTAL
for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT
October 22, 1998
Honolulu, Oahu

EXTENSION OF INTERIM WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

PERMITEE(S):

(Well Nos. 1905-08, 10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-04, 07)
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 2003-01, 02, 05)
Kapolei People’s Inc.
91-701 Farrington Hwy.
Kapolei, HI 96707

(Well Nos. 1900-02, 17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well No. 2001-03)
City and County of Honolulu
Department of Parks and Recreation
650 South King Street
Honolulu, HI 96813

(Well Nos. 2001-04, 09, 10)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

LANDOWNER(S):

Same

Same

Same

Same

Same

Same

Item 12
LOCATION MAP: See Exhibit 1

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Walawa, Ewa-Kunia, and Makaiwa Aquifer Systems. Due to uncertainties regarding the caprock's sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock.

On April 28, 1993, the Commission awarded temporary one-year permits for new irrigation uses of ground water in the Ewa Caprock because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture. In analyzing water availability, the Commission used guidelines for sustainable yields for the Puuloa, Kapolei, and Malakole areas (Yuen & Associates, Inc., 1989).

On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.
At the July 5, 1995 Commission meeting in Honokaa, Hawaii, the Commission extended the permits, which were now called interim permits, until such time that a formal decision could be made on Oahu.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a sustainable yield for the caprock.

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for individual irrigation wells at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The Commission also adopted the Pualoa, Kapolei, and Malakole Aquifer Systems in the Ewa Caprock Sector and approved pending applications for new and continued irrigation uses. The specified duration of the interim water use permits is to October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincides with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provides a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999.

ANALYSIS/ISSUES:

There has been no significant change in permitted, actual, or projected uses or water supply. Current interim water use permits and 12-month moving average withdrawals are shown in Exhibit 2. (Standard and Special Conditions of the interim permits are shown in Attachments A and B.) Exhibit 3 contains a complete listing of all permitted uses in the Pualoa and Kapolei Aquifer Systems. (Please note that the October 22, 1998 agenda includes three items that, if approved, will reduce the total permitted uses in Pualoa.)

PROTECTION OF THE RESOURCE

The current sustainable yield for the caprock aquifers is defined by a sustainable capacity at all irrigation wells in the Pualoa and Kapolei Aquifer Systems which prohibits individual pumpages that cause the specific well to exceed a 1,000 mg/l chloride cap. Enforcement of the chloride cap provides adequate protection for the aquifer.

The chloride cap is tied to anticipated wastewater reuse, which was planned to occur via a percolation trench to recharge the caprock aquifer with up to 13 million gallons per day (mgd) of treated effluent (Kumagai, 1996, Final Report. Recommendation for Water Reclamation, Nonpotable Water Plan for Oahu, Prepared for: Commission on Water Resource Management, State of Hawaii, and Department of Wastewater Management, City and County of Honolulu). However, the City now plans to deliver R-1 water directly to individual users. In either reuse application, the current sustainable yield method is and has been an effective means to protect the aquifer.

MAXIMIZING THE UTILITY OF THE RESOURCE(S)

Maximizing the utility of the caprock is intimately tied to wastewater reuse. As wastewater reuse comes on line, the sustainable yield of the caprock will increase, meaning more pumpage may be sustained under the 1,000 mg/l chloride limit. However, the distribution of reclaimed wastewater is uncertain, which will affect chloride distributions and total nonpotable supply. Although the City has not yet made reclaimed water available for nonpotable uses that will support their plans for urbanization of the Ewa area and the City-required dual water systems for new urban
developments, the City has indicated that private irrigation uses over the caprock may be served by reclaimed water by July, 2001. Of the projected total 13 mgd R-1 water from the Honolulu Wastewater Treatment Plant, 1 mgd is needed for in-plant process water, and 2 mgd is planned for industrial uses at James Campbell Industrial Park. This leaves about 10 mgd available for irrigation needs in the region.

The City is in the process of finalizing a contract with U.S. Filters for the construction, operation, and marketing for a reclamation system. Until the contract is finalized, the City will not enter into any agreements with individual users for the purchase of the R-1 water. As such, Special Condition D (Attachment B) could not be met by the users, and these users should not be penalized for this noncompliance.

Given the City’s current plans, the staff estimates that the potential future supply of nonpotable water for irrigation uses on lands overlying the Puuloa Aquifer System, where the competition for nonpotable irrigation water is most severe, could be up to about 15 mgd: 10 mgd reclaimed water plus approximately 5 mgd natural sustainable yield (Bauer, 1996). This assumes that 100% of the treated effluent will be available for reuse in Puuloa, which is improbable. But the availability of reclaimed water will present permittees with a possible alternative should their wells exceed the 1,000 mg/l chloride limit. Likewise, should the 1,000 mg/l limit not be exceeded, the permittees may continue to pump and may even work out a management plan which would allow for alternating between caprock and wastewater reuse to maximize the economical use of both resources. But ultimately, based on current reclaimed water plans, total allocations should not exceed 15 mgd.

Management of the resource via a chloride cap was adopted on May 14, 1997 as an interim management plan, subject to review in two (2) years. By May, 1999 or as total allocations begin to approach the total nonpotable supply in Puuloa, the Commission may consider establishing a regional sustainable yield, which would be something less than 15 mgd for the Puuloa area, unless additional water supply (e.g., expansion of the wastewater reclamation plant) becomes available. It is uncertain whether the chloride cap would be supplanted by a regional sustainable yield number.

WELL INTERFERENCE

Since there are no ground-water models (solute-transport) which can predict chloride response to pumped at individual well sites, close monitoring of the resource and enforcement of the chloride cap is critical to protect the resource in this interim period while the City finalizes plans to implement a reclamation program. Exhibit 6 shows that the caprock aquifer was significantly influenced by sugarcane irrigation practices and is still in a state of flux. Currently, all interim permittees are required to submit weekly reports of pumpage, water levels, chlorides, and water temperature (unless a variance from this requirement has been approved). All permittees are put on notice that the reporting requirement will be strictly enforced.

Although enforcement of the 1,000 mg/l chloride cap at each well site will provide adequate protection for the resource, it may not be sufficient to preclude well interference. However, not only will wastewater reuse further protect the resource, it will also help to reduce the effects of well interference that may cause individual wells to exceed the 1,000 mg/l chloride cap. Special Condition e. has been added to the existing interim permits recommended for extension and will be added to all future caprock permits to put the permittees on notice of the risk of reliance on caprock ground water and its uncertain sustainable yield.

The staff proposes to send all interim permittees in Puuloa the monthly bulletin which shows all pending permit applications, which should provide the permittees sufficient notice of new proposed uses of Puuloa Caprock ground water. Permittees should review new applications and water data from other nearby wells to proactively protect their sources. Permittees are encouraged to submit comments or objections in accordance with Administrative Rule 13-171-18 (Objection to Proposed
Water Use Permit. Further, the staff has been analyzing the weekly water data reports, and we are currently working on triggers to implement a water shortage plan. These triggers may be related to some modification of Exhibit 6. Should valid claims of well interference be raised, either by permittees or as a result of the staff's analysis, the Commission may consider implementing a water shortage plan to address the well interference issue.

However, at this time, only an informal and incomplete water shortage plan exists. On May 14, 1997, the Commission approved a permit classification system for a water shortage plan for the Puuloa Aquifer System as provided under Administrative Rule 13-171-42:

"(a) The commission shall formulate a plan for implementation during periods of water shortage. As a part of the plan, the commission shall adopt a reasonable system of permit classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.
(b) In accordance with this chapter, the commission may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.
(c) All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission."

The highest priority of nonpotable use is agriculture because the State's policy is to promote agriculture, and also because agricultural correlative uses are assured through the 1978 Constitutional Amendment. The second priority in water use is golf course irrigation because of the economic impacts that may result from inadequate water supply. The lowest priority in water use is landscape irrigation and dust control.

The priorities assigned to each permitted use and the maximum reductions indicated in the individual users' water shortage plans are shown in the last two columns of Exhibit 7. Individual water shortage plans outline smaller initial cutbacks (i.e., 10% to 30%), however under the most severe shortage situations, Exhibit 7 shows the maximum reduction in Puuloa Aquifer System pumpage would have been at least 3.718 mgd. However, this 3.718 mgd amount is subject to change following proposed revocation actions for unused agricultural allocations and formulation and adoption of a regional shortage plan.

Water shortage plans were requested from all of the users in Puuloa, with the exception of United States Fish and Wildlife Service. The requirement to submit individual water shortage plans is highlighted in the cover letter which transmits the permit and is also stated in Standard Condition 17. Not all users have submitted water shortage plans nor returned signed permits (see Exhibit 8). The staff will continue to work with these users to develop their individual plans. As part of the May 14, 1997 action, the Commission has also delegated the authority to the Chairperson to approve individual water shortage plans and the regional water shortage plan for the Puuloa Aquifer System.

**RECOMMENDATIONS:**

That the Commission:

1. Extend the interim permits shown in Exhibit 2, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

   a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.
b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available, acceptable, and affordable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol shown in Exhibit 4 and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions shown in Exhibit 5.

h. In the event a water shortage is declared by the Commission, permittees shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

3. Order 1902-01 pending legal analysis of process required to modify the conditions of a permit that was the subject of a Cell.

Respectfully submitted,

TIMOTHY E. JOHNS
Deputy Director

Attachment(s):
A (Standard Conditions for a Water Use Permit)
B (Special Interim Water Use Permit Conditions)

Exhibit(s):
1 (Location Map)
2 (Current Interim Permitted Uses, Puuloa and Kapolei Aquifer Systems)
3 (Current Permitted Uses, Puuloa and Kapolei Aquifer Systems)
4 (Chloride Sampling Protocol)
5 (Conservation Conditions)
6 (Chloride and Pumpage of Ewa Plantation Shallow Wells)
7 (Partial Water Shortage Plan)
8 (Summary of Unsigned Permits and No Water Shortage Plan)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

ATTACHMENT A
Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the Puuloa or Kapolei Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa or Kapolei Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

ATTACHMENT A
SPECIAL INTERIM WATER USE PERMIT CONDITIONS

a. The duration of the interim permits shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use or water supply occurs.

b. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data.

c. Require adherence to the Conservation Conditions shown in Exhibit 12.

d. Require the following PCUG members to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy reclaimed water by July 1, 1999 for the cumulative amounts specified in Exhibit 7 (Pro-Rata Share):

1) Gentry Investment Co. - Commitment to use a total of 0.430 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well No. 2002-15 and Well No. 2001-10.

2) Haseko (Ewa), Inc. - Commitment to use a total of 0.40 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well No. 1902-01.

3) Hawaii Prince Golf Club - Commitment to use a total of 0.40 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well Nos. 1900-02, 17 to 20 & 1901-03.

4) Ewa Beach International Golf Club - Commitment to use a total of 0.27 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well Nos. 1900-21,22 & 1959-08.
Current Active Water Use Permits (Excluding salt water use permits) (f://wup-wma.rpt)

October 5, 1998

ISLAND OF OAHU
WMA Aquifer System: KAPOLEI
Sustainable Yield = mgd

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7 Permits Totalling
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EXHIBIT 2

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21 Permits Totalling 4,826 mgd Available SY

EXHIBIT 2
### Current Active Water Use Permits
(Excluding salt water use permits)

**Exhibit 3**

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<td>GOODFELLOWS CONSTR</td>
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38 Permits Totalling 17.196
Available SY
**ISLAND OF OAHU**

**WMA Aquifer System:** KAPOLEI

**Sustainable Yield:** mgd

### Current Active Water Use Permits

(Excluding salt water use permits)

#### October 7, 1998

<table>
<thead>
<tr>
<th>No. Approved</th>
<th>Applicant</th>
<th>Well No</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
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<td>KAPOLEI G COURSE A</td>
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9 Permits Totalling 2.946 Available SY

---

EXHIBIT 3

(f:\work\database\reports\wup-wma.rpt)
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

- Sampling Schedule

The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
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</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
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</table>

- When to Sample

Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

- Sample Bottle

Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

- Labeling

On the sample bottle, affix a label that contains the following information:

- Well No.
- Date
- Time Sampled
- Elapsed Time after pump on
- Sampler's Name
- Water Temperature (if available)
- Pumping Rate (prior to sampling)
2. Determination of Chloride Concentration

- Private Laboratories

If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

Private laboratories will use methods that are more accurate than field methods described below.

- Hach Kit (Drop Count Titrator)

Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. Be consistent with the end-point color change.

For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- Hach Kit (Digital Titrator)

A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

Note: Be consistent with the end-point color. Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- Other Methods

An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.

EXHIBIT 4
3. **Reporting Results**

- **How to Report**

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

   **Under "Notes" Section of the Monthly Water Use Report:**

2. Method used for chloride analysis: ________________

3. Total elapsed time before sampling: ________________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
<table>
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<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
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<tr>
<td>6</td>
<td>20-50</td>
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<tr>
<td>20</td>
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</table>

1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   
a. Reduce the demand for non-potable water by:
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.
   
b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and Improving irrigation systems as necessary.
   
c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 5
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu


Ref: CWRsl, BWS Bas, R-76, & Stearn (1930, 1940)
### Allocation Plan, Ewa Caprock Ground Water Management Area, Puuola

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<th>User</th>
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<th>Current Allocation</th>
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<th>Water Shortage Plan</th>
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1 = Highest priority (Ag)  
2 = Intermediate priority (G. Course)  
3 = Lowest priority (Landscape Irr, dust control)  

Maximum reduction indicated in water shortage plan
## Current Active Water Use Permits (Excluding salt water use per O)(f:/wup-wma.rpt) October 15, 1998

**ISLAND OF OAHU**

**WMA Aquifer System:** PUULOA

**Sustainable Yield = mgd**

### No. Approved Applicant

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<th>Well No</th>
<th>Well Name</th>
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38 Permits Totalling **17.196**

Available SY

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**EXHIBIT 8**

(f:/work/database/reports/wup-wma.rpt)  EXHIBIT 8
## Current Active Water Use Permits

(Excluding salt water use permits)

**ISLAND OF OAHU**

**WMA Aquifer System: KAPOLEI**

**Sustainable Yield = mgd**

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**9 Permits Totalling 2.946 Available SY**

---

**EXHIBIT 8**

(f:\work\database\reports\wup-wma.rpt)
MEMORANDUM

TO:        Tim Johns, Deputy Director, CWRM
FROM:      Linnel T. Nishioka, Deputy Attorney General
RE:        Haseko Water Use Permits, Items 9 and 12.

I am requesting that the Commission defer any action on Haseko WUP 192 (item 9) and WUP 347 (item 12). Both permits were referenced in the final decision and order of the Commission in the Ewa Marina case. Currently our office is analyzing the legal issue of what process is required to modify any conditions of that permit that were the subject of the contested case hearing. We are undertaking a careful analysis of the issue since any advice given on this case would probably impact the other pending decisions, including Waiahole, Laie, and Waiola. In the meantime, we request that the Commission not take any action on these permits until our analysis is completed. We anticipate an answer prior to the next commission meeting in November, 1998. Thank you for your patience in this matter, it is greatly appreciated. Please contact me at 587-2990 should you have any questions or wish to discuss any matter further.
MEMORANDUM

TO: Tim Johns, Deputy Director, CWRM

FROM: Linnel T. Nishioka, Deputy Attorney General

RE: Haseko Water Use Permits, Items 9 and 12.

I am requesting that the Commission defer any action on Haseko WUP 192 (item 9) and WUP 347 (item 12). Both permits were referenced in the final decision and order of the Commission in the Ewa Marina case. Currently our office is analyzing the legal issue of what process is required to modify any conditions of that permit that were the subject of the contested case hearing. We are undertaking a careful analysis of the issue since any advice given on this case would probably impact the other pending decisions, including Waialae, Laie, and Waiola. In the meantime, we request that the Commission not take any action on these permits until our analysis is completed. We anticipate an answer prior to the next commission meeting in November, 1998. Thank you for your patience in this matter, it is greatly appreciated. Please contact me at 587-2990 should you have any questions or wish to discuss any matter further.
April 28, 1998

Mr. Edwin Sakoda, Acting Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Edwin Sakoda:

Subject: Reuse Agreements Between the City and County of Honolulu and Gentry, Ltd.; Haseko, Inc./Coral Creek Golf Course; and Hawaii Prince Golf Course

This is to inform you that the City and County of Honolulu has issued an award to U.S. Filter Corporation (USF) for a contract to design, build, and operate a 13 mgd wastewater reclamation facility for beneficial reuse of the secondary effluent from the Honouliuli Wastewater Treatment Plant.

The project will be implemented in two phases. Phase 1 will treat 8 mgd of secondary effluent to R-1 quality standards: 2 mgd will undergo further treatment for use as industrial service water for Campbell Industrial Park; 2 mgd is for Honouliuli in-plant uses; 2 mgd is for irrigation of City owned golf courses West Loch and Ewa Villages and 2 mgd is available for customers between the Honouliuli plant and the City of Kapolei. In Phase 2 of the project USF will expand the capacity of the plant to 13 mgd by July 1, 2001. The remaining 5 mgd will be available to non potable users in the Ewa Plain for landscape and golf course irrigation.

We are aware that our reclamation facility is an integral factor in managing the Ewa Caprock and are pleased to be part of this effort. We have continued to meet with Gentry, Haseko, Hawaii Prince Golf Course, Coral Creek Golf Course and New Ewa Beach Golf Course and keep them informed of the City's progress for the R-1 facility. The City, however, will not be able to enter into formal agreements regarding the purchase of reclaimed water in accordance with the timetable established for these permit users in their interim permits.

We suggest that the date to enter into agreements to purchase the reclaimed water be extended to October 31, 1999, or soon thereafter. As Phase 2 of the reclamation facility is developed, we will have a more definite time frame for the availability and cost of the
Mr. Edwin Sakoda  
April 28, 1998  
Page Two  

reclaimed water. The City will then be able to obtain commitments from customers to buy reclaimed water. We do look forward to coordinating the City's efforts with the Water Commission to make this water available for those now using groundwater from the Ewa Caprock.

If there are any questions, please do not hesitate to contact me at 527-6663.

Sincerely,

KENNETH E. SPRAGUE  
Director  

cc:  
Gentry Homes, Ltd.; Attn.: Jeffrey C. Dinsmore  
560 N. Nimitz Highway, Suite 213  
Honolulu, Hawaii 96817  

Hawaii Prince Golf Club; Attn.: Garrick Iwamuro  
91-1200 Fort Weaver Road  
Ewa Beach, Hawaii 96706  

Haseko, Inc.; Attn.: Nelson Lee  
820 Mililani Street, Suite 820  
Honolulu, Hawaii 96813-2938
**Commission on Water Resource Management**

**FROM:** Ed

**DATE:** 2/27/98

**TO:**

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<th>INIT.</th>
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**SUSPENSE DATE**

**Neal, We don't want weekly reports do we?**

**Not really, but I can ask for it. Is this really necessary?**

**Sure, I'm beginning to wonder if something temporary & necessary like dust control constitutes a 'change' in use. Even a farm may need to do dust control - even more regularly than a construction site. 0.315 mgd was approved for dust control.**
March 3, 1998

MEMORANDUM FOR THE RECORD

FROM: Glenn Bauer

SUBJECT: Weekly Reporting of Chlorides by Haseko for EP-27

Haseko has submitted weekly pumpage, water level, and chloride data from their EP-27 source (well no. 1902-01). The question as to whether they should continue to report weekly or switch to monthly reporting has been asked. My feeling is that weekly reporting is valuable in this case because of the possibility that their water use permit for a marina will be granted. If, indeed it is, then weekly data will be collected from a proposed series of monitor holes surrounding the marina. These monitoring holes will be a part of the Corps of Engineers and CWRM permit requirements. Weekly reporting of EP-27 will provide us more baseline data to use in the monitoring of the Puuloa caprock aquifer.

Table 1 is a summary of the data that they have provided us and including the average weekly ocean level measured at Tom Nance's tide gage established at Barbers Point Deep Draft Harbor for the expansion project. Also attached is a graph of the chloride, water level, ocean level, and pumpage data presented in Table 1.

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Table 1 and the graphical representation of the data are important in that chloride trends are clearly shown. The data also show that water quality improved from 994 mg/l to 888 mg/l over the first six weeks of use. From week no. 7 on, the chloride concentration seems to be directly
related pumpage. Average weekly water levels at EP-27 generally mimics the ocean tide measured at Barbers Point Harbor.

In summary, weekly water level, chloride, and pumpage data collected from EP-27 provide good baseline data prior to any construction of a marina. The data also show changes within the caprock aquifer that cannot be picked up by monthly sampling.
Weekly Chloride, Head, Pumpage, & Ocean Level @ EP-27 (Well No. 1902-01)
February 17, 1998

Michael Wilson, Chairman,
and Members of the Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Re: Ocean Pointe: WUP No. 192 and WUP No. 347

Dear Chair Wilson and Commissioners:

On May 14, 1997, the Commission on Water Resource Management (Commission) granted Water Use Permit No. 347 which authorizes HASEKO (Ewa), Inc. to withdraw 1.5 mgd of nonpotable water from the Ewa Caprock Aquifer for golf course and landscape irrigation and construction dust control. At the same time, an existing water use permit (WUP No. 192) was modified to authorize withdrawal of 1.8 mgd from the Ewa Caprock for agricultural uses.

The purpose of this letter is severalfold: (1) To provide an update on the status of the project. (2) To correct errors in monthly usage reports that had been submitted for the months of November and December, 1997, and for January, 1998. (3) To provide a status report on the use of reclaimed wastewater as an alternative nonpotable water resource. (4) To report a transfer of land from HASEKO (Ewa), Inc. to HASEKO Homes, Inc.

**Project Status.** Ocean Pointe was formerly known as the Ewa Marina Community Development. Since the above-referenced water use permits were issued last May, there has been significant visible progress on the project. Following a groundbreaking ceremony in October, 1997, construction commenced in November on the first residential “cluster” component.

As we had reported in an October 24, 1997 letter to the Commission’s Deputy Director, the elevation of the Cluster site must be raised, approximately 10 feet in some areas, in accordance with mass grading plans approved by the City Department of Public Works. The approximately 1.2 million cubic yards of fill material needed for this purpose is being excavated from the marina footprint.
Thus, while the Cluster development is limited to 92.66 acres on the northeastern section of the property, construction activity is occurring over a much larger area.

Because there is yet no decision on HASEKO's water use permit application for the marina, excavation for fill material has been confined to elevations above the water table. This limitation on depth of excavation has meant a greater expanse of excavated area. In turn, this has resulted in higher water requirements for dust control. Water for dust control is used on approximately 90 acres of the Cluster development site, approximately 40 acres of the excavation site, and another approximately 40 acres of roadways to and from the construction sites.

The dry windy weather has made constant watering a necessity. To date, HASEKO has not received any complaints from its neighbors about fugitive dust.

In applying for WUP No. 347, we had provided the Commission with a schedule of the project’s nonpotable water needs for the period October 1997 to July 1998. Attached as Exhibit A is an updated schedule. The significant changes are: 1) Construction activity began a month later than originally anticipated, thus, most of the remainder of the schedule is set back by one month. 2) As noted above, water requirements for dust control have been higher than originally anticipated. 3) At this point it does not appear that HASEKO will obtain the necessary permits to begin golf course construction prior to July 1998.

Water Usage Reports. Using water for dust control began with the onset of construction in November, 1997. Our water usage reports, however, continued to report all water usage from EP-27 as being for agricultural purposes. This is erroneous, and we have enclosed corrected reports for the months of November and December, 1997 and for January, 1998.

Please note that the amounts reported for agricultural and urban uses are estimates. The uses are not separately metered; thus we are unable to report on the precise amounts withdrawn for each type of use. Given the vast acreages that are involved and the fact that the locations of use for both agricultural and construction activities shift from time to time, it is impractical to install separate meters. In fact, both agricultural and construction uses currently utilize the same transmission lines and spigots.

We have estimated water usage for construction activity by calculations based on pipe size and hours of use for areas watered directly off EP-27 transmission lines and by the average number of water truck trips per week. The remainder is assumed to be agricultural use. The amount attributed to agricultural use coincides with amounts being pumped from EP-27 prior to
the commencement of construction, taking into account the increase in agricultural acreage that is being irrigated.

We apologize for not having done these calculations for the water usage reports for the past three months. We have instructed our consultant, Gary Howard, who submits these reports to the Commission, to hereafter provide separate estimates for each of the permits.

**Reclaimed Water.** A special condition to WUP No. 347 requires HASEKO “to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).”

Long before this special condition was imposed HASEKO had been working with the City and others for the development and use of reclaimed effluent from the Honouliuli Wastewater Treatment Plant. Last year, HASEKO successfully supported an amendment to the Ewa Development Plan public facilities map to include a pipeline for reclaimed water extending from the wastewater treatment plant to the Ocean Pointe property.

Since the condition was imposed, HASEKO has continued to meet with DWM, both as part of a larger group and individually. To date, however, DWM has not been ready to enter into any agreements with private users of reclaimed water. Complicating matters even further, we understand that very recently DWM has contracted with US Filters to operate the reclamation facility and to be the purveyor of the reclaimed water. Our brief discussion with US Filters personnel in late January indicated that US Filters is still finalizing their contract with the DWM. We will be in contact with US Filters to begin negotiations for the use of reclaimed water when US Filters' contract with DWM is finalized.

Although HASEKO will continue to use its best efforts to fulfill the special condition, in light of the current circumstances, it appears unlikely that a signed agreement with DWM, or its assigned purveyor, can be consummated by May of this year. We will continue to keep you apprised of our progress in this area.

**Property Transfer.** HASEKO (Ewa), Inc. is a wholly owned subsidiary of HASEKO (Hawaii), Inc. To develop the Cluster residential component of the Ocean Pointe project, HASEKO (Hawaii), Inc. created another wholly owned subsidiary, HASEKO Homes, Inc. HASEKO (Ewa), Inc. transferred to HASEKO Homes, Inc. less than 100 acres of the Ocean Pointe property for this first increment of residential development. The remainder of the 1100 acres of the Ocean Pointe property is retained by HASEKO (Ewa), Inc.
The property transfer did not include a transfer of the water use permit. Instead, HASEKO (Ewa), Inc. has agreed to provide water to HASEKO Homes, Inc. We understand that under these circumstances the provisions of HRS §174C-59 are not applicable.

Please feel free to call Raymond Kanna or me if you have any questions or comments.

Very truly yours,

Nelson W.G. Lee
Executive Vice President

cc: Lenore Nakama
Oshima Chun Fong & Chung
<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Cumulative Water Need</th>
</tr>
</thead>
</table>
| November 1997 | Begin on-site excavation for fill material  
                Begin on-site grading for residential project | 500,000 gpd          |
| December 1997 | Continue on-site excavation for fill material  
                Continue on-site grading for residential project  
                Begin subdivision and infrastructure development | 500,000 gpd          |
| January 1998 | Continue on-site excavation for fill material  
                Continue on-site grading for residential project  
                Continue subdivision and infrastructure development | 500,000 gpd          |
| February 1998 | Continue on-site excavation for fill material  
                Continue on-site grading for residential project  
                Continue subdivision and infrastructure development,  
                including landscaping roadways  
                Begin model unit construction | 500,000 gpd          |
| March 1998 | Continue on-site excavation for fill material  
                Continue on-site grading for residential project  
                Continue subdivision and infrastructure development,  
                including landscaping roadways  
                Continue model unit construction | 500,000 gpd          |
| April 1998 | Continue subdivision and infrastructure development,  
                including landscaping roadways  
                Begin housing construction | 500,000 gpd          |
| May 1998   | Maintain landscaping  
                Continue housing construction | 600,000 gpd          |
<table>
<thead>
<tr>
<th>Month</th>
<th>Tasks</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1998</td>
<td>Maintain landscaping</td>
<td>600,000 gpd</td>
</tr>
<tr>
<td></td>
<td>Continue housing construction</td>
<td></td>
</tr>
<tr>
<td>July 1998</td>
<td>Maintain landscaping</td>
<td>600,000 gpd</td>
</tr>
<tr>
<td></td>
<td>Continue housing construction</td>
<td></td>
</tr>
<tr>
<td>State Well No.</td>
<td>Well Name</td>
<td>Period Begin Date (mm/dd/yy)</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>10/27/97</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>10/27/97</td>
</tr>
</tbody>
</table>

* Flowmeter, electrical consumption, weir of flume, not metered (estimated).
  - Measurement should be taken while pump is NOT running just prior to a pumping cycle;
  - If measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g., date and method of chloride measurement; how pumpage amounts are estimated; etc.):

**Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by (print): Gary D. Howard
Title: Consultant
Date: 2/17/97

Form mgwurf.frm (10/96)
**STATE OF HAWAI’I**

**COMMISSION ON WATER RESOURCE MANAGEMENT**

**DEPARTMENT OF LAND AND NATURAL RESOURCES**

**MONTHLY GROUND WATER USE REPORT**

Haseko (Ewa) Inc.
820 Millili St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of November, 1997 Week 2

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 621, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yyyy)</th>
<th>Period End Date (mm/dd/yyyy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (ft MSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/3/97</td>
<td>11/9/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>942</td>
<td>75.9</td>
<td>3.12'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/3/97</td>
<td>11/9/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>942</td>
<td>75.9</td>
<td>3.12'</td>
</tr>
</tbody>
</table>

**Flow meter, electrical consumption, weir of flume, not metered (estimated).**
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Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc...):

**Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print): Gary D. Howard

Title Consultant

Signature

Date 2/17/97

Form mgwurf.frm (10/96)
## MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Millilani St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of **November, 1997** Week 3

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### Table: Monthly Ground Water Use

<table>
<thead>
<tr>
<th>State/Well No</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (F)</th>
<th>Non-Pumping Water Level (OTW)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/10/97</td>
<td>11/16/97</td>
<td>1,500,000</td>
<td>Flowmeter</td>
<td>928</td>
<td>74.8</td>
<td>2.94'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/10/97</td>
<td>11/16/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>928</td>
<td>74.8</td>
<td>2.94'</td>
</tr>
</tbody>
</table>

** - Flow meter, electrical consumption, weir of flume, not metered (estimated).
** - Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

** Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by (print) **Gary D. Howard**
Title **Consultant**
Signature **[Signature]**
Date **2/17/97**

Form mgwurf.frm (10/96)
**STATE OF HAWAI'I**
**COMMISSION ON WATER RESOURCE MANAGEMENT**
**DEPARTMENT OF LAND AND NATURAL RESOURCES**

**MONTHLY GROUND WATER USE REPORT**

Haseko (Ewa) Inc.
820 Millilani St., Ste. 820
Honolulu, HI 96813

**REVISED**
Month of November, 1997 Week 4

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<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/17/97</td>
<td>11/23/97</td>
<td>650,000</td>
<td>Flowmeter</td>
<td>917</td>
<td>74.3</td>
<td>3.13'</td>
</tr>
</tbody>
</table>

**Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print) Gary D. Howard
Title Consultant
Signature

Date 2/17/97
STATE OF HAWAI\nCOMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES

MONTHLY GROUNDWATER USE REPORT

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of November, 1997 Week 5

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly groundwater use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 621, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yyyy)</th>
<th>Period End Date (mm/dd/yyyy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (FTW)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/24/97</td>
<td>11/30/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>933</td>
<td>73.8</td>
<td>2.92'</td>
</tr>
<tr>
<td></td>
<td>(agriculture use)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/24/97</td>
<td>11/30/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>933</td>
<td>73.8</td>
<td>2.92'</td>
</tr>
<tr>
<td></td>
<td>(urban use)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** - Flow meter, electrical consumption, weir of flume, not metered (estimated).
** - Measurement should be taken while pump is NOT running just prior to a pumping cycle.
If measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc...):

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Submitted by (print): Gary D. Howard
Title: Consultant
Date: 2/15/97
Haseko (Ewa) Inc.
820 Millani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of December, 1997 Week 1

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (ppm)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DTHW)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01 EP-27</td>
<td>(agriculture use)</td>
<td>12/1/97</td>
<td>12/7/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>888</td>
<td>75.9</td>
<td>3.05'</td>
</tr>
<tr>
<td>1902-01 EP-27</td>
<td>(urban use)</td>
<td>12/1/97</td>
<td>12/7/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>888</td>
<td>75.9</td>
<td>3.05'</td>
</tr>
</tbody>
</table>

*: Flow meter, electrical consumption, weir of flume, not metered (estimated).
**: Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by (print) Gary D. Howard
Title Consultant
Signature
Date 2/17/98

Form mgwurf.frm (10/96)
### Monthly Ground Water Use Report

**Haseko (Ewa) Inc.**  
820 Milllani St., Ste. 820  
Honolulu, HI 96813

**REvised**

Month of December, 1997 Week 2

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DTW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/8/97</td>
<td>12/14/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>864</td>
<td>73.0</td>
<td>3.03'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/8/97</td>
<td>12/14/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>864</td>
<td>73.0</td>
<td>3.03'</td>
</tr>
</tbody>
</table>

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---

**Notes:**
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Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc...):

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---

Submitted by (print): **Gary D. Howard**  
Signature: [Signature]  
Title: **Consultant**  
Date: **2/17/98**  
Form: mgwurf.frm (10/96)
**MONTHLY GROUND WATER USE REPORT**

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of December, 1997 Week 3

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<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp (°F)</th>
<th>Non-Pumping Water Level (DTW)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/15/97</td>
<td>12/21/97</td>
<td>8,500,000</td>
<td>Flowmeter</td>
<td>877</td>
<td>75.6</td>
<td>3.12'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/15/97</td>
<td>12/21/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>877</td>
<td>75.6</td>
<td>3.12'</td>
</tr>
</tbody>
</table>

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Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc.):

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Submitted by (print) Gary D. Howard
Title Consultant
Signature

Date 2/17/98

Form mgwurf_fm (10/96)
# Monthly Ground Water Use Report

**Revised**

Month of December, 1997 Week 4

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<table>
<thead>
<tr>
<th>State/Well No.</th>
<th>Well Name</th>
<th>Period Begin Date</th>
<th>Period End Date</th>
<th>Quantity Pumped</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp (°F)</th>
<th>Non-Pumping Water Level (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27 (agriculture use)</td>
<td>12/22/97</td>
<td>12/28/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>836</td>
<td>75.4</td>
<td>3.10'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27 (urban use)</td>
<td>12/22/97</td>
<td>12/28/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>836</td>
<td>75.4</td>
<td>3.10'</td>
</tr>
</tbody>
</table>

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Submitted by (print): **Gary D. Howard**  
Title: **Consultant**  
Date: **2/17/98**  
Signature: 

Form mgwur.1n (10/96)
STATE OF HAWAI'I
COMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES

MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Millilani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of **January, 1998** Week 1

<table>
<thead>
<tr>
<th>State/Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DTH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01 EP-27 (agriculture use)</td>
<td>12/29/97</td>
<td>1/4/98</td>
<td>8,500,000</td>
<td>Flowmeter</td>
<td>853</td>
<td>75.9</td>
<td>3.07</td>
<td></td>
</tr>
<tr>
<td>1902-01 EP-27 (urban use)</td>
<td>12/29/97</td>
<td>1/4/98</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>853</td>
<td>75.9</td>
<td>3.07</td>
<td></td>
</tr>
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* * *  
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Submitted by (print): Gary D. Howard  
Title: Consultant

Signature: ____________  
Date: 2/17/98

Form mgwurf.frm (10/96)
**STATE OF HAWAI'I**
COMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES

**MONTHLY GROUND WATER USE REPORT**

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of **January, 1998 Week 2**

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<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (OTW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/5/98</td>
<td>1/11/98</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>850</td>
<td>75.6</td>
<td>3.24'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/5/98</td>
<td>1/11/98</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>850</td>
<td>75.6</td>
<td>3.24'</td>
</tr>
</tbody>
</table>

* Flow meter, electrical consumption, weir of flume, not metered (estimated).
* Measurement should be taken while pump is NOT running just prior to a pumping cycle;
  if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

** Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print) **Gary D. Howard**

Title **Consultant**

Signature **[Signature]**

Date **2/17/98**

Form mgwurf.frm (10/96)
## MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Millilani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of **January 1998**, Week 3

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu, HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DWT)</th>
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</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/12/98</td>
<td>1/18/98</td>
<td>8,500,000</td>
<td>Flowmeter</td>
<td>855</td>
<td>75.2</td>
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<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/12/98</td>
<td>1/18/98</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>855</td>
<td>75.2</td>
<td>3.24'</td>
</tr>
</tbody>
</table>

**Flow meter, electrical consumption, weir of flume, not metered (estimated).**

**- Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.**

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...): **Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print) **Gary D. Howard**

Title **Consultant**

Signature

Date **2/17/98**
### Monthly Ground Water Use Report

**Haseko (Ewa) Inc.**
820 Mililani St., Ste. 820
Honolulu, HI 96813

**REVISED**

**Month of January, 1998, Week 4**

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0964.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yyyy)</th>
<th>Period End Date (mm/dd/yyyy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Max Pumping Water Level (ft)</th>
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</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/19/98</td>
<td>1/25/98</td>
<td>8,500,000</td>
<td>Flowmeter</td>
<td>866</td>
<td>76.8</td>
<td>3.30'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
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<td>3,500,000</td>
<td>Flowmeter</td>
<td>866</td>
<td>76.8</td>
<td>3.30'</td>
</tr>
</tbody>
</table>

- Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc...):

- Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by (print): Gary D. Howard

Signature: [Signature]

Title: Consultant

Date: 2/17/98

Form mgwurf.frm (10/96)
Ms. Rae Loui  
Deputy Director  
Commission on Water Resource Management  
Kalanikou Building  
1151 Punchbowl Street  
Honolulu, Hawaii 96813

RE:  Ewa Marina Community Development: Cut and Fill Activity

Dear Ms. Loui:

Components of the Ewa Marina Community project other than the marina have progressed to a point where physical construction activity at the site will commence before the end of this year. Because the on-site activity will be significant, we would like to apprise you of the current status of the Ewa Marina Community Development project and the construction activities that will be taking place over the next several months.

Initial Residential Phase

Construction of the Ewa Marina Community Development will commence with a residential "cluster" component located on 92.66 acres on the northeastern section of the Ewa Marina property. The attached Exhibit A depicts the location of the Cluster project identified as Area 1.

Initially, the elevation of the Cluster site must be raised, approximately 10 feet in some areas, in accordance with mass grading plans approved by the City Department of Public Works. Approximately 1.2 million cubic yards (CY) of fill material is needed for this purpose.
Cut and Fill

To obtain the fill material needed to raise the elevation of the Cluster site, approximately 1.5 million CY of material will be excavated from other areas within the Ewa Marina site. As noted in the Environmental Impact Statement for the project, prepared in April 1992 by Wilson Okamoto & Associates, Inc. (EIS), obtaining fill material onsite will minimize construction traffic and, thereby, vehicle exhaust and emissions.

Initially, fill material will be obtained from grading portions of the marina footprint. The “borrow” locations designated on Exhibit A are the locations to be graded and from which fill material will be obtained. Assuming the marina is eventually constructed, this area will ultimately be excavated. Even if the marina is not constructed1, a portion of the area will have to be graded and the elevation lowered to accommodate regional drainage needs.

Excavations may be as deep as 9 feet. Inasmuch as the current elevation of the marina footprint averages approximately +12.0 feet, elevations may be lowered to +3.0 feet. All of the excavation, however, will be confined to elevations above the water table.

The portions of the marina footprint that will be graded in this initial phase all lie more than 60 feet inland of the shoreline. No construction activity will take place at the shoreline or seaward of the shoreline.

Grading and excavating fill material will be timed to coincide with filling, grading, and construction of the Cluster project to minimize stockpiling of fill material, and, thereby, minimize fugitive dust impacts of construction. (See EIS, Page VI-2).

Water Use

Upon commencement of the cut and fill activity, nonpotable caprock water will be used for dust control and other construction purposes in accordance with the interim water use permit granted by the Water Commission earlier this year.

---

1 As the water use permit application for the construction of the marina is still pending before the Commission on Water Resource Management, it is still unknown whether or not the marina will be constructed. HASEKO, therefore, has developed alternative (with and without marina scenarios) infrastructure plans in order to keep the development processing active.
In hearings before the Water Commission on the allocation of caprock water for Ewa Marina’s urban irrigation needs, HASEKO had represented that construction on the initial residential phase would begin in October, 1997. Construction is now scheduled to begin in November.

Pursuant to conditions attached to the interim water use permit, HASEKO will submit to the Commission the required pumping and chloride data. Additionally, we will continue to keep the Commission apprised of the Project’s significant activities.

Please feel free to call me if you have any questions or comments.

Very truly yours,

Vicki Gaynor
Manager of Community and Government Affairs

Attachment

Exhibit A, Map Showing Approximate Location of Activities
LEGEND

- - - - - - EWA MARINA BOUNDARY
- - - - - - PHASE I, INCREMENT I BOUNDARY

EWA MARINA - AREA I PROJECT SITE

Exhibit A
<table>
<thead>
<tr>
<th>TO:</th>
<th>INIT.</th>
<th>TO:</th>
<th>INIT.</th>
<th>FOR:</th>
<th>PLEASE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAUER, G.</td>
<td></td>
<td>LOUI, R.</td>
<td></td>
<td>Approval</td>
<td>___ See Me</td>
</tr>
<tr>
<td>CHING, F.</td>
<td></td>
<td>NAKAMA, L.</td>
<td></td>
<td>Signature</td>
<td>___ Review &amp; Comment</td>
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<tr>
<td>FUJII, N.</td>
<td></td>
<td>NAKANO, D.</td>
<td></td>
<td>Information</td>
<td>___ Take Action</td>
</tr>
<tr>
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<td></td>
<td>OHYE, M.</td>
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<td>HIGA, D.</td>
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<td>SAKODA, E.</td>
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<tr>
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<td>SUBIA, S.</td>
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<td></td>
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<td>IMATA, R.</td>
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<td>UWAIN, J.</td>
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</tr>
<tr>
<td>JINNAI, R.</td>
<td></td>
<td>YODA, K.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>KUNIMURA, I.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please:

- See Me
- Review & Comment
- Take Action
- Type Draft
- Type Final
- File
- Xerox ___ copies

Comments on test:

1. CH appeared to stabilize.
2. To determine T in 5P.27.129 model database
   from logan (11/8) will send diskette in 1.5 week
3. No attempt to pull out total influence
   in 0.6% wells. Not planning to/not required
   pumped at ~3.5 mgd for 96 hours. Chlorides stabilized at 900 ppm.
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani Street, Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Thank you for submitting the EP-27 Pumping Test Data Report, dated August, 1997, in compliance with the May 14, 1997 action by Commission on Water Resource Management. The results of the pumping test show that the chlorides in the well stabilized at 900 ppm after being pumped at 3.5 million gallons per day for 96 hours.

As was discussed during an August 25, 1997 telephone conversation with Mr. Raymond Kanna, we will look forward to receiving the datafile on diskette that was used to construct Figure 9 in the report (Quattro Pro or Lotus format). This information will be used to determine the transmissivity of the caprock in the vicinity of your well.

If you have any questions, please contact Glenn Bauer at 587-0263.

Sincerely,

RAE M. LOUI
Deputy Director

LN:ss
Mr. Kenneth E. Sprague, Director  
Department of Wastewater Management  
City & County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813  

Dear Mr. Sprague:

Ground Water Use Permit No. 347  
for Haseko Well No. 1 (Well No. 1902-01)  
Puuloa Ground Water Management Area, Oahu

Haseko recently received an interim Water Use Permit for Well No. 1902-01 for Puuloa Ground Water Management Area for use of 1,500 mgd. A condition to this permit requires Haseko to use reclaim water when available.

We would like to initiate discussions with your Department to explore the current status of your reclaim water program. Haseko has been an advocate and supporter of reclaimed water and we look forward to the opportunity to discuss this matter in detail with your staff.

Could you please let us know who is coordinating your reclaim water program? I will have Mr. Raymond Kanna of my office arrange for a mutually convenient meeting date.

Sincerely,

Nelson W.G. Lee  
Executive Vice President

NWGL:.dsl  
Enclosure: Letter/Permit dated 5/30/97 from CWRM-SS

cc: Mr. Michael D. Wilson, Chairperson  
State Department of Land and Natural Resources  
Commission on Water Resource Management
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Approval of Water Use Permit for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu

This letter transmits your water use permit for Haseko Well No. 1 (Well No. 1902-01) for use of 1,500 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. The duration of the interim permit shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use of water supply or water quality occurs.

b. Require adherence to the chloride sampling protocol (attached) and the submittal of weekly chloride data, as may be amended by the Commission staff.

c. Require adherence to the Conservation Conditions (attached).

d. Require the permittee to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

Michael D. Wilson
Chairperson
GROUND WATER USE PERMIT
WUP NO. 347

PERMITTEE

Applicant/Water User
HASEKO (EWA), INC.
Address 820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

Landowner of Source
HASEKO (EWA), INC.
Address 820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

PERMITTED SOURCE INFORMATION

Island OAHU
Water Management Area PUULOA
Aquifer Sector EWA CAPROCK
Aquifer System PUULOA
System Sustainable Yield NA
Well Name HASEKO WELL NO. 1
State Well No. 1902-01

PERMITTED USE INFORMATION

Reasonable beneficial use GOLF COURSE, ROADWAY, & MAINTENANCE IRRIGATION, DUST CONTROL
Withdrawal (12 month moving ave.) 1,500 mgd
Chloride Cap 1,000 mg/l
Location of water use
TMK # 9-1-12:5-7
Address EWA MARINA PROJECT
State land use classification URBAN
County zoning classification P-2, A-1, R-5

Pursuant to Hawaii’s State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C, Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

Applicant's Signature: [Signature]
Date: 7/17/97
Firm or Title: HASEKO (EWA) Inc.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
July 7, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Approval of Water Permit Well No. 1902-01 (WUP #347)
Puuloa Ground Water Management Area, Oahu

Dear Sir:

Haseko encloses for your records, an executed copy of our Ground Water Use Permit WUP No. 347. A copy will be forwarded to you under a separate cover.

If you have any questions with regards to these matters, please contact me at 536-3771 ext. 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President

Enclosure
GROUND WATER USE PERMIT  
WUP NO. 347

PERMITTEE

Applicant/Water User  
HASEKO (EWA), INC.  
820 MILILANI ST., SUITE 810  
HONOLULU, HI 96813

Landowner of Source  
HASEKO (EWA), INC.  
820 MILILANI ST., SUITE 810  
HONOLULU, HI 96813

PERMITTED SOURCE INFORMATION

Island  
OAHU

Water Management Area  
PUULOA

Aquifer Sector  
EWA CAPROCK

Aquifer System  
PUULOA

System Sustainable Yield  
NA

Well Name  
HASEKO WELL NO. 1

State Well No.  
1902-01

PERMITTED USE INFORMATION

Reasonable beneficial use  
GOLF COURSE, ROADWAY, & MAINTENANCE IRRIGATION; DUST CONTROL

Withdrawal (12 month moving ave.)  
1,500 mgd

Chloride Cap  
1,000 mg/l

Location of water use  
9-1-12:5-7

TMK #  
EWA MARINA PROJECT

Address  
URBAN

State land use classification  
P-2, A-1, R-5

County zoning classification  

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
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   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee’s water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ________________ Date: ____________
Printed Name: ________________________ Firm or Title: ________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
July 7, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Approval of Water Permit Well No. 1902-01 (WUP #192)
Puuloa Ground Water Management Area, Oahu

Gentlemen:

Haseko encloses for your records, an executed copy of our Ground Water Use Permit WUP No. 192. A report of a pump test completed on June 2, 1997 is currently being prepared by our consultant, Camp Dresser and McKee. A copy will be forwarded to you under a separate cover.

If you have any questions with regards to these matters, please contact me at 536-3771 ext 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President

Enclosure
GROUND WATER USE PERMIT
WUP NO. 192

PERMITTEE

<table>
<thead>
<tr>
<th>Applicant/Water User</th>
<th>Landowner of Source</th>
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<tr>
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<td>EWA CAPROCK</td>
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PERMITTED USE INFORMATION

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</tr>
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<td>TMK #</td>
<td>EWA, OAHU</td>
</tr>
<tr>
<td>Address</td>
<td>URBAN</td>
</tr>
<tr>
<td>State land use classification</td>
<td>P-2, RESORT, R-5, B-2, A-1, A-2</td>
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Pursuant to Hawaii’s State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(a), is reduced.
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   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

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16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOa Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant’s Signature: [Signature]

Printed Name: Nelson W.C. Lee

Firm or Title: Haseko (Ewa), Inc.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Approval of Water Use Permit for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu

This letter transmits your water use permit for Haseko Well No. 1 (Well No. 1902-01) for use of 1,500 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission’s approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

**Special Conditions**

a. The duration of the interim permit shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use of water supply or water quality occurs.

b. Require adherence to the chloride sampling protocol (attached) and the submittal of weekly chloride data, as may be amended by the Commission staff.

c. Require adherence to the Conservation Conditions (attached).

d. Require the permittee to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

Michael D. Wilson
Chairperson

Attachments
GROUND WATER USE PERMIT
WUP NO. 347

PERMITTEE
Applicant/Water User
Address: HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

Landowner of Source
Address: HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

PERMITTED SOURCE INFORMATION
Island: OAHU
Water Management Area: PUUPOA
Aquifer Sector: EWA CAPROCK
Aquifer System: PUUPOA
System Sustainable Yield: NA
Well Name: HASEKO WELL NO. 1
State Well No.: 1902-01

PERMITTED USE INFORMATION
Reasonable beneficial use: GOLF COURSE, ROADWAY, & MAINTENANCE IRRIGATION, DUST CONTROL
Withdrawal (12 month moving ave.): 1,500 mgd
Chloride Cap: 1,000 mg/l
Location of water use
TMK #: 9-1-12:5-7
Address: EWA MARINA PROJECT
State land use classification: URBAN
County zoning classification: P-2, A-1, R-5

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
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   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
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Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

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16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUU LOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: _______________________________ Date: ______________________

Printed Name: _______________________________ Firm or Title: _______________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani St., Suite 810  
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well No. 1902-01  
Puuloa Ground Water Management Area, Oahu

This letter transmits your modified water use permit for EP 27 (Well No. 1902-01) for use of 1.800 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission’s approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. Standard Condition 18 for interim water use permits shall not apply.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

In addition, the Commission is requiring you to conduct a pump test by June 14, 1997 to confirm that the source can sustain withdrawals at the modified permitted amount without exceeding 1,000 mg/l of chloride. The Commission has delegated the authority to approve or modify the proposed pump test procedure to the Commission staff.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

MICHAEL D. WILSON  
Chairperson

Attachments
# GROUND WATER USE PERMIT

## WUP NO. 192

### PERMITTEE

**Applicant/Water User**

**Address**

HASEKO (EWA), INC.

820 MILILANI ST., SUITE 810

HONOLULU, HI 96813

**Landowner of Source**

**Address**

HASEKO (EWA), INC.

820 MILILANI ST., SUITE 810

HONOLULU, HI 96813

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### PERMITTED USE INFORMATION

**Reasonable beneficial use**

AGRICULTURE

**Withdrawal (12 month moving ave.)**

1.800 mgd

**Chloride Cap**

1,000 mg/l

**Location of water use**

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7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
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   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
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Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

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Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

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17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUUOLA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

[Signature]

M. D. WILSON, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ___________________________ Date: ________________

Printed Name: ___________________________ Firm or Title: ___________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
TO: Mr. Dean Uchida, Administrator
Land Division
FROM: Rae M. Loui, Deputy Director
Commission on Water Resource Management (CWRM)
SUBJECT: Review Comments - Proposed Cluster Housing Application No. 96/CL-1 - Ewa Marina (Area I), Ewa, Oahu, Tax Map Key: 9-1-11:7 and 9-1-12:5
FILE NO.: PM-97-040

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

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas which are important for the maintenance of streams and the replenishment of aquifers.

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

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

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

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

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

[] We recommend that no development take place affecting highly erodible slopes which drain into streams within or adjacent to the project.

[] If the proposed project diverts additional water from streams or if new or modified stream diversions are planned, the project may need to obtain a stream diversion works permit and petition to amend the interim instream flow standard for the affected stream(s).

[] Based on the information provided, it appears that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

[] Based on the information provided, it does not appear that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

[] An amendment to the instream flow standard from the CWRM would be required before any streamwater is diverted.

[] Any new development that is permitted along a stream that is not yet channelized should be based on the express condition that no streams will be channelized to prevent flooding of the development. Development in the open floodplain should not be allowed; other economic uses of the floodplain should be encouraged.

[X] OTHER:

We understand that the City is requiring dual water lines to service new developments in the Ewa area. The application does not describe non-potable water service to the project area. Haseko (Ewa), Inc. (Haseko) has applied and received interim approval for nonpotable ground water from the Ewa Caprock Aquifer for golf course, landscape, and maintenance irrigation and for dust control on fallow areas formerly in sugarcane. This interim water use permit expired on July 12, 1995. The Commission extended the duration of the permit pending a decision on Haseko's request for a new water use permit.

Ground water in the Ewa Caprock Aquifer is expected to become more saline as the return irrigation recharge from Oahu Sugar Co.'s irrigation practices has ceased. We are encouraging the use of reclaimed water to serve nonpotable needs in Ewa when that resource becomes available in 1998.

With regard to the Ewa Marina project, the water use permit application to excavate the marina is in a contested case hearing. Closing arguments will be heard on February 25, 1997. A decision on the application is expected soon thereafter.

If there are any questions, please contact Lenore Nakama at 587-0218.
MEMORANDUM

TO: Division of Aquatic Resources
    Historic Preservation Division
    Division of State Parks
    Commission on Water Resource Management
    Division of Forestry and Wildlife
    Division of Conservation and Resources Enforcement
    Division of Boating and Ocean Recreation
    Land Division - Planning & Technical Services, Oahu District Land Office,
    Engineering Branch

FROM: Dean Y. Uchida, Administrator

SUBJECT: Request for Comments - Proposed Cluster Housing Application No. 96/CL-1 - Ewa
        Marina (Area 1), Ewa, Oahu, Tax Map Key: 9-1-11:7 and 9-1-12:5

Please review the attached:

( ) DRAFT SUPPLEMENTAL EIS
( ) DRAFT EIS PREPARATION NOTICE
( ) ENVIRONMENT ASSESSMENT
( ) SMA APPLICATION
( ) STATE CLEARINGHOUSE REVIEW
( ) PROPOSED CLUSTER HOUSING APPLICATION

and submit your comments within the time requested above. If you wish to review the original
application and attachments, please contact Patti Miyashiro at 587-0430.

If no response is received by the suspense date, we will assume there are not comments.

Attachment(s)

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

Signed ____________________________
Date: _______________________________
APPLICATION FOR CLUSTER DEVELOPMENT
OF THE
CLUSTER-HOUSING DEVELOPMENT,
EW A MARINA - AREA I

APPLICANT:
HASEKO (EWA), INC.

DECEMBER 16, 1996
DPU MASTER APPLICATION FORM

Additional data, drawing/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing." Please ask for these instructions.

All specified materials and fees must accompany this form; incomplete applications could delay processing. You are encouraged to consult with department staff in completing the application. Please call the appropriate phone number given in the "Instructions for Filing" sheet.

Permit requested (check one or more as appropriate):

- Agricultural Cluster
- Housing Cluster
- County Cluster

Conditional Use Permits:
- Type 1
- Type 2

Existing Use

Flood Hazard Variance

Indicate District:

TAX MAP KEY:
Portion of 9-1-012:7 and portion of 9-1-012:5
LOT AREA: 92.66 Acres
ZONING DISTRICT: R-5/P-2
STATE LAND USE DISTRICT: Urban
STREET ADDRESS/LOCATION OF PROPERTY: Ewa Beach

RECORDED FEE OWNER:
Name: HASEKO (Ewa), Inc.
Address: 820 Mililani Street Suite 820
Phone Number: (808) 536-3771

APPLICANT: HASEKO (Ewa), Inc.
Name: Paul Jordan
Address: 820 Mililani Street Suite 820
Phone Number: (808) 536-3771

PRESENT USE OF PROPERTY/BUILDING:
Vacant

AUTHORIZED AGENT/CONTACT PERSON:
Name: Paul Jordan
Address: 820 Mililani Street Suite 820
Phone Number: (808) 536-3771

PROJECT NAME or any other name: Ewa Marina-Area 1

PROJECT PROPOSAL (Briefly describe the proposed activity or project):

Application for cluster housing development - Ewa Marina-Area 1

FOR DEPARTMENT USE ONLY
Submitted Fee Amount: $ 
Date Application Accept: 
Accepted By: 
Date of Public Hearing:
- Approved
- Approved with conditions indicated below.
- Denied for reason(s) given below.
- Exempt project.

FILE NO. 

THIS COPY, WHEN SIGNED BELOW, IS NOTIFICATION OF THE ACTION TAKEN.

Signature Date

The above approval does not constitute approval of any other required permits, such as building permits.
II. INTRODUCTION

HASEKO (Ewa), Inc. (HASEKO or Applicant) is the owner and developer of the Ewa Marina Community Development (Ewa Marina) located in Ewa Beach, Oahu, Hawaii.

This application for a cluster housing development is submitted pursuant to Article 6, Chapter 21, Revised Ordinances of Honolulu, 1978, as amended (ROH). It is prepared in conformance with the City and County of Honolulu (City) Department of Land Utilization's (DLU) Instructions for Filing a Cluster - Housing Development and the City's Cluster/PD-H Guidebook.

By this application, Applicant seeks to develop the initial residential phase of Ewa Marina as a cluster housing project, consisting of both single and multi-family dwellings. The cluster housing project will be called the "Cluster-Housing Development, Ewa Marina - Area I" and will provide 835 housing units on approximately 92.66 acres. (See Exhibit A). The cluster housing project consist of four (4) sub-areas, which are identified as Areas IA through ID. (See Exhibit B). The overall cluster housing project is referred to in this application as the "Cluster Project".

The Cluster Project incorporates certain "neo-traditional" town planning principles. Because cluster development allows development of sites which would otherwise be difficult to develop under current LUO provisions and subdivision standards, the Cluster Project will include neo-traditional features such as a mix of housing types, alleyways, and a pedestrian friendly network of gridded streets and walkways. Moreover, notwithstanding the zoning restrictions which prohibit retail uses within the Cluster Project, some of the desired commercial uses under neo-traditional principles, i.e., a town center, could be provided on the B-2 zoned parcel located immediately adjacent to the Cluster Project.

Applicant will also be filing an application for the bulk subdivision of the Cluster Project property and the subdivision of the single family dwelling lots within the Cluster Project to be processed concurrently with this cluster application.
III. DESCRIPTION OF EWA MARINA COMMUNITY DEVELOPMENT

A. Brief Overview of Ewa Marina Community Development

Ewa Marina is a master-planned mixed-use development project, which will be developed on approximately 1,110 acres of land and will be a part of the secondary urban center of Kapolei.

Consistent with the concept of Oahu's secondary urban center, Ewa Marina will be a harmoniously integrated residential, recreational and commercial community where residents can live, work and play.

The residential component of Ewa Marina will consist of several residential neighborhoods and will include single-family homes, mid-rise apartments, and townhouses providing a total of approximately 4,850 housing units.

The focal point of Ewa Marina will be a full service man-made marina approved for up to 1,400 boat slips and various marina-support facilities. Also serving the recreational needs of the region will be the Ewa Marina golf course and a district park located at the northeast entrance to Ewa Marina.

Adjoining the western section of the marina will be a retail/commercial center, visitor accommodations, and various recreational facilities and opportunities. The mixed-used commercial area will serve as a major employment and recreation center for residents of Oahu, particularly residents of the Ewa region.

B. Brief Overview of Residential Component of Ewa Marina

As previously indicated, the residential component of Ewa Marina will provide a total of approximately 4,850 housing units, including single-family homes, mid-rise apartments, and townhouses. The residential component will be developed in phases, with each phase being identified as a separate "area".

As an alternative to the "suburban sprawl" created under modern suburban designs and landscapes, urban planning has seen a resurgence of interest in developing old-style "communities" which incorporate features of the traditional neighborhood or village. These "neo-traditional" neighborhoods incorporate planning principles and concepts that seek to integrate various age and economic classes within the same neighborhood, reduce the importance of the automobile, encourage walking and interaction among its residents, and generally provide a sense of community.

Applicant has prepared a conceptual plan for the residential component of Ewa Marina, which incorporates various neo-traditional features. However, several of
the neo-traditional features envisioned under the conceptual plan are not permitted under the existing City Land Use Ordinance (LUO).

The Cluster Project, which is the subject of this application, is the initial residential phase of Ewa Marina and incorporates certain neo-traditional features that are permitted under the current LUO such as: providing a mixture of housing sizes and types within the same neighborhood to (e.g., a mixing of single family dwellings with townhouses and other multi-family dwellings); clustering of dwellings on smaller lots to allow for more efficient and useable open space; providing a pedestrian oriented network of gridded streets, sidewalks and pedestrian pathways to encourage walking and socializing and reduce dependence on the automobile; placing garages at the rear of the lots accessible by private service alleys, and increasing streetscaping in the front of the dwellings.

Because of limitations under the LUO, the Cluster Project does not include commercial uses, which is a primary feature of neo-traditional neighborhoods. This neo-traditional concept of mixing uses within the same neighborhood seeks to provide a community in which residents of all ages can live, work and play. Therefore, neo-traditional principles call for residences, shops, workplaces and civic buildings or town centers to all be located within close proximity. For example, neighborhood grocery stores, post offices, and eating establishments are commonly found strategically located among residences in neo-traditional neighborhoods. This mixing of uses not only further encourages walking and interaction among the residents, but by reducing the importance of the automobile, all residents, even those that are unable to drive such as children and the elderly, are able to live, work and play -- all within the boundaries of the neighborhood.

Notwithstanding the zoning restrictions which prohibit commercial uses within the Cluster Project, Applicant plans to provide some of the desired commercial uses on a commercially zoned parcel located within the Ewa Marina project immediately adjacent to the southeastern corner of the Cluster Project. Such commercial uses will be developed as part of a subsequent phase of the Ewa Marina project.

Applicant does not foresee developing all of its proposed 4,850 housing units for Ewa Marina under the neo-traditional concept. However, subject to market conditions, limitations under the current LUO, and future opportunities created by amendments to the LUO, Applicant envisions that subsequent residential phases/areas will include certain other neo-traditional features, such as: the mixing of uses discussed above; making public transportation a viable alternative to the automobile, and providing town centers or civic buildings that reinforce the identity of the neighborhood and provide gathering places for the entire community to engage in social, cultural and other activities.
B. Objectives Of The Design Concept

1. Ewa Marina Design Concept: The objective of the design concept for the overall Ewa Marina project is to create a mixed-use “community” utilizing neo-traditional neighborhood land use planning concepts and principles. The overall design concept for the Ewa Marina and the Cluster Project can be realized by taking advantage of the flexibility offered under the LUO for cluster housing developments.

The design concept for the overall Ewa Marina project incorporates neo-traditional concepts which seek to: encourage social interaction within the neighborhood by mixing uses and housing types and providing town centers and/or civic centers; encourage walking and public transportation and reduce dependence on the automobile; provide for more efficient and usable open space areas by cluster housing on smaller lots; provide a choice of routes through a network of gridded streets.

Ewa Marina will be developed in phases, with the Cluster Project serving as the initial residential phase. The Cluster Project will incorporate certain neo-traditional features to the extent permitted under the LUO and as dictated by the current housing market. Subject to market conditions and limitations of the LUO, subsequent phases will incorporate additional neo-traditional features.

2. Cluster Project Planning Concept: The objective of the planning for the Cluster Project is to meet the following criteria:

a. Create a viable and marketable “first phase” of development that will enable the Cluster Project to successfully lead itself into the future phases of Ewa Marina.

b. Create a site plan that meets the City’s current cluster development zoning and engineering ordinances that govern the property and the planned roadways, and that will support the community’s long term infrastructure needs.

c. Create a mixed-housing development of single-family and multi-family building types that creates a community which integrates residents of various age and economic classes.

d. Create a pedestrian oriented network of sidewalks and pedestrian pathways throughout the community, which encourages walking and reduces dependence on automobiles.
e. Create an efficient and usable network of parks, open space and landscape areas throughout the community, which are connected by a network of pedestrian sidewalks and pathways.

f. Create yard space for all housing types throughout the community, and connect these yards and community open space, landscape areas and parks by a network of pedestrian sidewalks and pathways.

3. Housing Design Concept: The objective of the housing design for the Cluster Project is to meet the following criteria:

a. Create a design that takes advantage of the neo-traditional neighborhood planning approach, the natural attributes of the site, allows for flow-through natural ventilation, provides exterior living spaces, and affords an acceptable level of privacy and security to each unit.

b. Create a mixture of housing sizes and types, including both detached and attached dwelling units, that meets the community's needs and that range in price from affordable to market rate.

4. Site Development and Infrastructure Concept: The objective of the site development concept is to reduce grading requirements, to allow for efficient design of utility infrastructure and to provide a pedestrian friendly layout through the use of a gridded network of streets and pedestrian walkways. The use of through streets, secondary alleys and pedestrian walkways provide for greater options in utility locations such as trash pickup and drainage infrastructure, in addition to improving the pedestrian environment.

5. Landscape Design Concept: The objective of the landscape design concept is to create a blending of a tropical oasis theme and the dry outer fringes. Coconut and kiawe trees, or species with similar characteristics, will be planted as accents and theme trees to carry the character indicative of the arid landscape in Ewa Beach. A hierarchy of trees species will be used with zones based on underlying street right of way dimensions. Narrower pavement widths within standard right-of-ways are proposed to further enhance the pedestrian environment by allowing for wider planting strips and street trees.
C. Existing Conditions

1. Abutting Land Uses

The Cluster Project is bounded by Fort Weaver Road along its eastern boundary. The southeastern corner of the Cluster Project is abutted by commercial zoning, including the Ewa Beach Shopping Center and an undeveloped B-2 zoned parcel which is also part of the Ewa Marina project. Abutting the southern portion of the Cluster Project is the Ewa Beach Elementary School, which is zoned R-5. The remainder of the Cluster Project is surrounded by the overall Ewa Marina project, which is currently undeveloped.

2. Hazardous Areas

There are no known hazardous areas adjacent to or on the Cluster Project site.

The Federal Emergency Management Agency's Flood Insurance Rate Map (FIRM) indicates that the lower portion of the overall Ewa Marina (makai of the Cluster Project) is located in Zones A and AE which are designated as special flood hazard areas inundated by the 100-year flood. Base flood elevations have been determined in Zone AE, but not in Zone A. As indicated on the FIRM maps, the flood elevation ranges from elevation 6 to elevation 8.

The Cluster Project is located within Zone D on the FIRM maps. Zone D is designated for areas in which the flood elevations are undetermined.

3. Slope and Topographic Analysis

The Cluster Project site is located within the Ewa Coastal Plain. The property is relatively flat with elevations ranging from 21 feet above mean sea level at the mauka end adjacent to Fort Weaver Road to 12 feet above mean sea level at the makai end adjacent to Ewa Beach Elementary School.

The surface of the site is fairly uniform and slopes at a rate of 0.2% to 1.0%.
4. Soil and Drainage Analysis

Surface Soils

The overall development area for Ewa consists of five soils types as classified by the Soil Conservation Service. The soil type within the Cluster Project is Fill land (Fd), which consists of fill material from dredging, excavation from adjacent uplands, garbage and bagasse and slurry from sugar mills.

Subsurface Condition

The Soils Investigation, Ewa Marina Total Project, dated November 13, 1984, prepared by Dames & Moore, describes the subsurface soils of the Ewa Marina Project, including the Cluster Project, as follows:

In general, the site is underlain by a thin mantle of soil over coral. The coral is exposed in some areas. The upper portion of the mantle, which averages less than 2 feet in thickness, is composed mainly of sandy and clayey silt. In a few cases, sieve analyses indicate that the upper soils are classified as silty sands. A thin layer of silty coralline gravel underlies the upper silt and extends as deep as 4-1/2 feet below the ground surface.

The coral consists principally of in situ reef rock and conglomerate which is hard and strong. Locally, softer and weaker shell rock and dune rock were encountered. However, the areas of softer rock do not appear extensive. Coral consistency is typically erratic and hard rock is often encountered overlying zone of softer materials.

Existing Drainage

Storm runoff generated on-site of the Cluster Project percolates into the soil and eventually reaches the ocean as groundwater. During heavier storms, runoff generally flows toward the ocean.

There is an existing underground drainage system within Fort Weaver Road which is presently accepting a small portion of runoff from the Cluster Project site.

Papipi Road and the adjoining existing residential areas have a limited underground drainage system which is presently accepting a small portion of runoff from the Cluster Project site.
Drainage Studies

The Drainage Master Plan for HASEKO (Ewa), Inc. Cluster-Housing Development Ewa Marina - Area 1, dated August 1996, prepared by Gray, Hong, Bills & Associates, Inc., has been prepared in conjunction with the proposed Cluster Project and is consistent and compatible with the Site Drainage Master Plan, dated August 1996, prepared by GMP Associates, Inc.

5. Existing Structures and Uses

There are no existing structures located on the property encompassing the Cluster Project. The property was previously used for sugar cane cultivation. However, it is currently fallow.

6. Desirable Views

The property is generally flat with minor gradient changes and is located approximately 20 feet above sea level. Because of this there are no discernible views with the exception of the Waianae Mountain ranges to the north of the property.

7. Easements

The Cluster Project site is subject to the easements described below. Copies of the easement documents will provided upon request.

a. There are five (5) water pipeline easements located within the Cluster Project along Fort Weaver Road. These easements have all been dedicated to the City, and are described in further detail as follows (Land Court Document No. 2237810):

   Easement 1987 for water pipeline and road purposes, as described in Land Court Order No. 92211 and shown on Land Court Map 452.

   Easement 1988 for water pipeline purposes, as described in Land Court Order No. 92211 and shown on Land Court Map 452.

   Easement 2307 for water pipeline purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.
Easement 2308 for water pipeline and road purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.

Easement 2309 for water pipeline purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.

b. A drainage/flowage easement (Easement 2310), is part of the water pipeline easement system described above, and is described in Land Court Order No. 96916 and shown on Land Court Map 503. This easement was dedicated to the City together with the water pipeline easements described above (See Land Court Document No. 2237810). Applicant is considering an alternate drain connection for the water pipelines, which if provided, will allow this easement to be canceled.

c. A temporary utility easement has been granted to Hawaiian Electric Company, Inc. to run power lines across the Ewa Marina project and provide electricity during development of the project. (See Land Court Document Nos. 2284736 and 2284737). The easement and power lines will be relocated to a permanent utility easement to be designated at a later date.

8. Existing Road Widths, Conditions and Ownership of All Access Roads

The Cluster Project site is bounded on the east side by Fort Weaver Road, which is a public 100-foot right-of-way. Fort Weaver Road is fully improved fronting the Cluster Project site and the pavement is in good condition.

9. Existing Public Facilities

Potable Water

Various water facilities, including source, storage and transmission, have been constructed by the Ewa Plain Water Development Corporation (EPWDC). Applicant has contributed its proportionate share of the cost for the improvements. Therefore, water service can be provided to the Cluster Project by connection to the 20-inch line which has been provided off the 36-inch transmission line within Fort Weaver Road. This 20-inch connection line is located at the northeast portion of the Cluster Project site.
Sanitary Sewer

As part of the Ewa Beach Sewers Section I, Improvement District 259, the sizes of various sewer lines in the existing Ewa Beach area were increased to provide sufficient capacity for portions of the Ewa Marina project. The cost for the larger size lines were paid for by the previous developer.

A maximum of 2.4 mgd of sewer flow can be accommodated by the existing 24-inch Ewa Interceptor Sewer at Papipi Road located on the southeast side of the Cluster Project site. This is adequate to handle the entire sewer flow from the Cluster Project site.

The Honouliuli Wastewater Treatment Plant presently has a capacity of 38 million gallons a day (mgd), of which 13 mgd is being upgraded to secondary treatment. According to the Department of Wastewater Management, this should provide enough capacity to cover the overall Ewa Marina project, including the Cluster Project. The improvements for secondary treatment were recently completed.

The Honouliuli Wastewater Treatment Plant is planned for further upgrading to 51 mgd. Construction is scheduled to commence in 1997, with completion in July 1999.

10. Unique Site Conditions

The entire Cluster Project site is extremely flat with little or no gradient changes. This provides the ideal topographic conditions for a neo-traditional development, which seeks to provide a pedestrian friendly project through a network of gridded streets and pedestrian walkways. In contrast, hilly or mountainous sites typically require curvilinear, non-gridded streets to allow reasonable road inclines, but which limit usage by pedestrians.

D. Proposal

1. Dwelling Units

a. Number, Type and Size.

The Cluster Project will provide a total of 835 dwelling units, consisting of 379 single family units, 320 townhouse units, and 136 apartment units. The Cluster Project will also provide a variety of building and unit types, as well as dwellings of various sizes. For example, the Cluster Project will provide three (3) different building
types for the single family units, which will include 3 and 4-bedroom units. The project will also provide five (5) different building types of townhouses, with 2 and 3-bedroom units, and apartments consisting of 2-bedroom units. (See Table D1 on page 15).

The buildings and units within each sub-area of the Cluster Project are described in Table D2. (see pages 16-19)

b. **Sale or Rental Price**

The projected sales prices, which are projected 1997 sales prices and are subject to change depending on market conditions, are as follows:

- Single Family Dwellings: Approx. $250,000 to $350,000
- Townhouses: Approx. $150,000 to $250,000
- Apartments: Based on 80% of median income, adjusted by the U.S. Department of Housing and Urban Development rates and per agreement with the City Department of Housing and Community Development regarding "affordable units"

c. **Form of Ultimate Ownership**

- Single Family Dwellings: Fee Simple
- Townhouses: Fee Simple Condominium
- Apartments: Fee Simple or Rental

d. **Development Schedule**

The projected development schedule for the dwelling units, which is subject to change depending on market conditions, is as follows:

- Year 1: Area IA
- Year 2: Area IB
- Year 3 and beyond: Areas IC and ID

e. **Other Features**

Applicant originally contemplated developing the project as a zero lot line development. However, Applicant subsequently opted to develop the project as a cluster development to provide for "walk around" single family units with 5-foot side and rear setbacks from
the property line. The side yards and building setbacks and heights for the Cluster Project are based on the 10-foot separation of buildings originally proposed for the zero lot line project. The decision to not develop a zero lot line project was also in part due to Applicant’s desire to eliminate or minimize potential ownership and property line encroachment disputes.

Concurrent with this cluster application, Applicant will be submitting an application for a bulk lot subdivision of the Cluster Project, and for subdivision of the single family dwelling lots.

* * * * *
2. Building Design

The proposed buildings have been designed to be compatible with the overall design concept for Ewa Marina. Exterior colors and materials will be harmonious with the existing neighborhood. (See “Ewa Marina Cluster Development Color Scheme” submitted herewith). The orientation of the buildings will take advantage of the views and natural ventilation. The placement of the buildings relative to vehicular lanes and sidewalks will reflect neo-traditional planning concepts and principles and enhance the sense of community.

3. Open Space/Recreation/Landscaping

By incorporating the neo-traditional concept of clustering the dwellings together, the Cluster Project will provide a network of usable open space, parks, and landscape areas, including five (5) park areas, and will be connected by a network of pedestrian sidewalks and pathways. The interconnected street system, another neo-traditional feature, is designed to encourage pedestrian use instead of being a series of high volume one way in and one way out collector streets. As a result, it is expected that greater use will be made of the streets as an open space amenity for the Cluster Project, as opposed to the vehicular dominated corridors found in conventional subdivisions, in which landscaping serves only an aesthetic purpose for drivers and passengers.

Planting strips along the streets will include canopy trees that provide character and shade. These canopy trees are made possible by the Cluster Project’ neo-traditional street layout, which provide for wider planting strips and narrower pavement widths than that which are permitted in conventional subdivisions.

Where possible, the Cluster Project will also incorporate the neo-traditional concept of using different species of street trees as a design element to indicate a street hierarchy based on street widths. In addition, if transplanting proves successful and depending on availability of potable water sources, kiawe trees may be moved from adjacent parcels and utilized. Coconut trees will also be planted as accents and theme trees to emphasize the tropical seaside character of the Ewa Marina project. Large areas of grasses will be planted to provide play fields and picnic areas throughout the open space/parks.

Landscape quantities and area calculations are set forth in detail in Table D3 (see pages 21-23).
The sanitary sewer system for the Cluster Project will be in accordance with the standards of the City Department of Wastewater Management (DWM) and will be dedicated to the City upon completion.

The sewer improvements for the Cluster Project will also be developed in accordance with the sewer master plan for the Ewa Marina project, as approved by DWM.

**Electrical, Telephone, CATV & Street Lighting Systems**

Underground electrical, telephone, CATV and street lighting systems will be in accordance with the standards of the various utility companies and the City.

Upon completion, the improvements will be dedicated to the applicable public utility commissions.

7. **Grading and Drainage**

**Drainage**

Drainage of the Cluster Project can be accomplished with storm runoff flowing to the future marina except for small areas where it is not possible to contain the runoff on-site. These areas include the areas adjacent to Fort Weaver Road, Papiipi Road, the Ewa Beach Shopping Center and the Ewa Beach Elementary School.

The on-site drainage system for the Cluster Project will consist of underground storm drains that will ultimately discharge into the future marina. On-site drainage improvements will be designed to City standards. Drainage systems within public roads and applicable easements will be dedicated to the City. Small inlets and drain pipes within the privately owned alleys will remain private and will connect to the dedicated City storm drainage system.

Until such time that the marina is constructed, the on-site drainage system for the Cluster Project will discharge into a temporary detention/retention basin located makai of the Cluster Project site. The basin will be provided to meet City and NPDES requirements during the interim period until the marina is completed. The basin will be designed per the U.S. Soil Conservation Services method outlined in their Erosion and Sediment Control Guide for Hawaii Manual.
The on-site drainage system for the Cluster Project will be designed in accordance with the drainage master plan for the Cluster Project, as approved by the City Department of Public Works.

Grading

Applicant envisions that fill for the Cluster Project site will consist of materials excavated from proposed cut areas located outside of the Cluster Project site, but within the overall Ewa Marina project site.

The Cluster Project site will be graded to minimize storm runoff from flowing outside of the project limits. Generally, the surrounding areas will be graded to drain towards the future marina, with slopes ranging from 0.5% to 1.0%.

All grading will be done in accordance with the City's grading ordinance.

Erosion Control

A temporary sediment and retention basin located outside of the Cluster Project site will serve as the sediment and retention basin for the Cluster Project during the interim period until the marina is completed.

An erosion control plan will be developed in conjunction with the design phase of the Cluster Project and shall be in accordance with the Soil Erosion Standards and Guidelines of the City Department of Public Works.

8. Relationship of the Cluster Project to the Neighborhood

The residential character of the Cluster Project is compatible with the existing zoning and character of the existing neighborhood. Clustered units have been located adjacent to the highest intensity use surrounding the site of the commercial and school district.

The neo-traditional neighborhood concept envisioned for the Cluster Project is very compatible with the existing planning for Ewa Beach. Consistent with neo-traditional principles, residents of the Cluster Project would be encouraged to interact with the existing neighborhoods through the pedestrian friendly network of gridded streets and pedestrian pathways, which would connect to the existing commercial areas.

In addition, although commercial uses are not included within the Cluster Project due to LUO restrictions, the overall development concept for Ewa Marina envisions that some of the commercial uses desired under
August 8, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

EP-27 (Well #1902-01)
Water Use Permit #192

Gentlemen:


If you have any questions, please contact Mr. Raymond S. Kanna at 536-3771 ext. 242.

Sincerely,

Nelson W.G. Lee
Executive Vice President

NWGL: dsl
Enclosure
EP-27 Pumping Test
Data Report

August, 1997

Prepared for HASEKO (Ewa) Inc.
by
Camp Dresser & McKee Inc.
10 Cambridge Center
Cambridge, MA 02142
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EP-27 Pumping Test
Data Report

August, 1997

Prepared for HASEKO (Ewa) Inc.
by
Camp Dresser & McKee Inc.
10 Cambridge Center
Cambridge, MA 02142
Section 1  Introduction

In response to the Commission on Water Resource Management’s request of February 21, 1997 a 96-hour pumping test was conducted at well EP-27. This test was conducted to determine the specific capacity and any trend in salinity at EP-27.

EP-27 is a coral/borrow pit with an areal extent of approximately 1000 ft², and a water depth of 5 to 7 feet. Three wells, GC-1, GC-2 and GC-3, were monitored during the pumping test. GC-1 is located approximately 1,900 feet west of EP-27, GC-2 is located 2,500 feet southwest of EP-27, and GC-3 is located 2,900 feet northeast of EP-27. Figure 1 presents the locations of the pumping test well EP-27, and of the three monitoring wells GC-1, GC-2, and GC-3.

Transducers (In-Situ Troll Dataloggers) recorded the water level in EP-27 and three monitoring wells, GC-1, GC-2 and GC-3. Water levels were monitored for 72 hours prior to the pumping test, during the 96 hour pumping test, and for 75 hours following the cessation of pumping. Enclosed with this report is a diskette containing the water level data in spreadsheet format. The water level data refer to the static water level above the pressure transducer at the beginning of each test phase. At the beginning of each phase the static water level is zero, and subsequent water levels are measured above or below this reference. A Stevens Water Level Recorder - Type F was also installed in the EP-27 pool.

The pumping test began at 11:27 AM on Monday, May 26, 1997 and concluded at 12:00 noon on Friday, May 30, 1997. The pumping rate was maintained at approximately 2,400 gallons per minute (gpm). During the pumping test discharge water samples were taken and conductivity and pumpage records were recorded every 4 hours. The conductivity and water temperature in the EP-27 pool were also measured every 4 hours. The measurements in the EP-27 pool were taken at depths of 1 foot (top), 3 feet (mid), and 6 feet (bottom), and at approximately 6 feet laterally from the intake to the pump. The discharge water from the pumping test was pumped through the irrigation system and applied to Haseko property to the east of EP-27.

Section 2  Pre-Test Monitoring

Water levels in the aquifer were monitored for a period of 72 hours prior to the pumping test. This monitoring was designed to evaluate tidal influences in the aquifer, and to evaluate the responses at each of the monitoring wells to the tide cycle. Measurements were made at 6 minute intervals throughout the monitoring period.

Water level measurements taken during the Pre-Test monitoring at pumping well EP-27 and at the three monitoring wells are plotted in Figures 2 through 5. This data can be found in spreadsheet PTEST.XLS on the accompanying diskette. Very similar tidal signals are evident at well EP-27 and monitoring well GC-1. A slightly different tidal signal with greater amplitude is apparent at monitoring well GC-2. This is expected since GC-2 is located closer to the shoreline than is GC-1.
The Pre-Test water level record at monitoring well GC-3, which is located further inland than the other three wells, was influenced by external factors (the transducer cable was apparently disturbed) during the Pre-Test period and appears to contain some anomalous readings. Since the water level readings at GC-3 are relatively unimportant to the analysis of the pumping test results, these anomalous readings are not considered a problem in the pumping test.

Since EP-27 and GC-1 appear to have very similar tidal signals, and these wells are located approximately the same distance from the shoreline, it was decided to use the GC-1 water level readings to remove the tidal signal from the EP-27 readings during the pumping test. Figure 6 presents the water level readings at EP-27 minus the water level readings at GC-1, during the Pre-Test monitoring. The resultant readings display a very small remaining tidal cycle with an amplitude of approximately 0.015 feet, which is a result of the slightly stronger tidal signal at EP-27.

During the pre-test period the temperature and conductivity in the EP-27 pool were monitored. Conductivity levels during the pre-test period were relatively constant, ranging from 3300 to 3350 microsiemens (μS).

Section 3  Pumping Test

The 96-hour pumping test began at 12:00 noon on May 26th, and the response at EP-27 and the 3 GC wells was recorded. Water level measurements were recorded on a logarithmically increasing time frequency until the interval between readings was 6 minutes, at which time measurements continued at 6 minute intervals until the end of the test. The water level data are presented in the spreadsheet PTEST.XLS on the accompanying diskette, and the pumping rate data are presented in Table 1.

Figures 7 and 8 present the water level at well EP-27 during the 96-hour pump test versus a linear time scale. Figure 7 displays the raw water level data which still include the tidal signal. Figure 8 presents the water level at EP-27 minus the water level at GC-1 during the pumping test. From this figure it is apparent that the pumping test created a drawdown of approximately 0.15 feet at well EP-27. In Figure 9 the adjusted water level at EP-27, during the pumping test is plotted versus a logarithmic time scale. The majority of the drawdown occurs within the first 100 minutes of the pumping test. The specific capacity at EP-27 is calculated to be approximately 15,700 gpm/ft.

Plots of the unadjusted water level at the monitoring wells GC-1, GC-2, and GC-3 during the pumping test are presented in Figures 10, 11 and 12. There is no obvious impact of the pumping at any of these wells, only a continuing tidal signal. As in the pre-test period, the aquifer response to the tide cycle at GC-3 is quite different from that observed at GC-1 and GC-2.
Section 4  Recovery Period

The pumping was terminated at 12:00 noon on May 30th and the recovery was monitored for 75 hours. The dataloggers were again set to record on a logarithmic scale at the beginning of the recovery period, and then at 6 minute intervals for the remainder of the period. The water level data are contained in spreadsheet PTEST.XLS on the enclosed diskette.

Figures 13 through 16 present water levels at all 4 wells during the recovery period immediately following the conclusion of the pumping test. Again, the only obvious evidence of a recovery from the pumping test is observed at EP-27. Figures 17 and 18 present the water level at EP-27 minus the water level at GC-1, during the recovery period. Figure 17 presents this data versus a linear time scale, and Figure 18 presents the data versus a logarithmic time scale. The majority of the recovery occurs within the first 200 minutes following the conclusion of pumping. After 200 minutes the residual influence of the tidal cycle is observed. Figures 17 and 18 indicate that the water level at EP-27 recovers between 0.12 and 0.15 feet, an amount comparable to the earlier recorded drawdown.

Section 5  Water Quality Data

Water quality samples were collected from the discharge water every 4 hours during the pumping test, and from the EP-27 pool daily during the recovery period. In Figures 19 and 20, conductivity and chloride concentration are plotted versus time. The conductivity data display a smooth increase during time, appearing to stabilize after approximately 3 days of pumping. Conductivity levels declined once the pumping stopped and returned to pre-test levels. Figure 20 presents the measured chloride concentration vs time. During the pumping test chloride values increase from approximately 860 to 900 mg/l. The chloride concentration also appears to stabilize at a value of approximately 900 mg/l. Once pumping stopped the chloride concentration returned to its pre-test value of approximately 860 mg/l. The conductivity data are presented in Table 2, and the chloride data are presented in Table 3.

Conductivity and temperature measurements were also made at three depths in the pool every 4 hours during the pumping test, and daily during the recovery period. Figure 21 presents the conductivity measurements versus time at all three depths in the EP-27 pool. The behavior observed is consistent across the three depths, with the highest levels being noted at the bottom of the pit. The tidal cycle appears to slightly influence the conductivity levels. Such influences are not noted in the pump discharge samples. During the pumping test the conductivity values rise, and appear to stabilize at a value between 3550 and 3600 μS. Once the pumping test stopped the conductivity values declined to pre-test conditions. The data collected from the EP-27 pool is included in the file EP27WQ.XLS which accompanies this report.
Section 6  Summary

A 96-hour pumping test was conducted at EP-27. This pumping test indicated that an extraction rate of 2,400 gpm can be maintained at EP-27 with approximately 0.15 feet of drawdown. During the pumping test the drawdown at EP-27 occurred over approximately the first 3 hours of the test, with a drawdown of approximately 0.15 feet. The chloride levels measured in the discharge water increased from 860 to 900 mg/l, and stabilized at that level after 3 days of pumping. Water levels and chlorides recovered to pre-test conditions following the test.
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PO: Pump Off  

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Note: Samples 1 - 25 from Discharge Water
Samples 26 - 29 from EP-27 Pool

Table 2
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Note: Samples 1 - 25 from Discharge Water
Samples 26 - 29 from EP-27 Pool

Table 3
Chloride Measurements During Pumping Test and Recovery Period
Location of Pumping Well EP-27 and Monitoring Wells

96-Hour Pumping Test at EP-27
Figure 2
Water Level at EP-27 During Pre-Test
Figure 3
Water Level at GC-1 During Pre-Test
Figure 4
Water Level at GC-2 During Pre-Test
Figure 5
Water Level at GC-3 During Pre-Test
Figure 6

Adjusted Water Level at EP-27 During Pre-Test
Figure 7
Water Level at EP-27 During Pre-Test
Figure 8

Adjusted Water Level at EP-27 During Pumping Test
Figure 9

Adjusted Water Level at EP-27 During Pumping Test
Figure 10
Water Level at GC-1 During Pumping Test

CDM Camp Dresser & McKee
GC1DD.XLS
Figure 11
Water Level at GC-2 During Pumping Test
Figure 12
Water Level at GC-3 During Pumping Test
Figure 14
Water Level at GC-1 During Recovery Period
Figure 15
Water Level at GC-2 During Recovery Period
Figure 16
Water Level at GC-3 During Recovery Period
Figure 17

Adjusted Water Level at EP-27 During Recovery Period
Figure 18

Adjusted Water Level at EP-27 During Recovery Period
Figure 19
Conductivity vs Time
Figure 20
Chloride Concentration vs Time
Figure 21
Conductivity Measurements in the EP-27 Pool
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Can you file?
FILE CLOSED 5-15-03

SEE FOLDER FOR

1901-06, 1902-01, 09 # 11
Ms. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, Hawaii 96813

(WUP No. 650)

2. Article Number (Copy from service label)

C. Signature

D. Is delivery address different from item 1?

If YES, enter delivery address below:

A. Received by (Please Print Clearly)

B. Date of Delivery

☐ Agent
☐ Addressee
☐ Yes
☐ No

3. Service Type

☐ Certified Mail
☐ Registered
☐ Insured Mail
☐ Return Receipt

☐ Express Mail

4. Restricted Delivery? (Extr.}

☐ C.O.D.

Domestic Return Receipt

7001 2510 0000

PS Form 3811, July 1999
May 15, 2003

Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

This is in response to your April 25, 2003 letter, requesting administrative modification of Water Use Permit (WUP) Nos. 192 and 347 for EP 27 (Well No. 1902-01) pursuant to Declaratory Ruling No. DEC-ADM97-A1 and administrative modification of the water use permit issued in Contested Case No. CCH-OA96-1 (Marina permit) pursuant to Administrative Rule 13-171-23(b).

The first part of the request by Haseko Ewa, Inc. (HASEKO) is to administratively modify WUP Nos. 192 and 347 by transferring the allocations from EP 27 to a battery of wells consisting of EP 27 and four proposed wells. From the map provided, we have assigned the four proposed wells Well Nos. 1902-09, 10, 11 and 1901-06, going from west to east. We find that HASEKO’s request meets the criteria for administrative modification under DEC-ADM97-A1. Please find attached Well Construction Permit application forms for the four proposed wells.

The second part of HASEKO’s request is to administratively modify Special Conditions (b) and (c) in the Commission on Water Resource Management’s Decision and Order (D&O) in the matter of the Water Use Permit Application for the Ewa Marina Contested Case Hearing (Case No. CCH-OA96-1) pursuant to Administrative Rule 13-171-23(b). In effect, Special Conditions (b) and (c) limit the durations of WUP Nos. 192 and 347 to coincide with the start of marina construction and orders the use of reclaimed water as an alternate nonpotable source upon cancellation of WUP Nos. 192 and 347.

HASEKO is requesting modification of Special Conditions (b) and (c) because marina construction is ready to commence, however, reclaimed water is not available in sufficient supply for HASEKO’s nonpotable needs. We have confirmed with the Board of Water Supply that HASEKO has received only a limited amount of reclaimed water for use at the park site.
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Sent To: Mr. Nelson W.G. Lee  
820 Mililani St., Ste. 810  
Honolulu, HI 96813  
MAY 19 2003

(WUP NO. 650)
CERTIFIED MAIL SERVICES:

1. Certification assures your mailpiece
   is sent by the Postal Service for two years

2. Signature on delivery

3. Return Receipt

4. Cannot be combined with First Class Mail or Priority Mail.

5. Costs are not available for any class of international mail.

6. NO INSURANCE COVERAGE IS PROVIDED with Certified Mail. For insurance, please consider Insured or Registered Mail.

7. For an additional fee, a Return Receipt may be requested to provide proof of delivery. To request Return Receipt service, please complete and attach a Return Receipt Request Form to the article and add applicable postage to cover the fee. To obtain a Return Receipt Requested. To receive a fee waiver for a USPS postmark on your Certified Mail receipt is required.

8. On an expedited fee delivery may be restricted to the addressee or an authorized agent. Advise the clerk for the mailpiece with the notation “Restricted Delivery”.

9. If a certified copy of the Certified Mail receipt is desired, please present the article at the post office for postmarking. If any postmark on the Certified Mail receipt, remove label and affix label with postage and mail.

IMPORTANT: Save this receipt and present it when making an inquiry.
nearest the mauka boundary of HASEKO's property. We understand that additional water will still be needed to supply the golf course, landscaping, and for dust control and that the nonpotable transmission system still does not exist. Absent the ability to use caprock ground water or reclaimed water, the only other available alternative would be potable water from the municipal water system, which would not result in the most efficient utilization of available resources.

In light of these changed conditions, that were unanticipated at the time the D&O was issued, and in consideration of the efficiency of water use, we find that HASEKO's proposal falls within the provisions of Administrative Rule 13-171-23(b).

Further, we note that, subsequent to the D&O (issued September 25, 1998), on July 18, 2001, the Commission on Water Resource Management (Commission) extended all other interim water use permits in the Puuloa and Kapolei Ground Water Management Areas to: 1) July 1, 2006, or 2) until treated wastewater is available and acceptable for use, or 3) until such time that a significant change in permitted, actual, or projected uses or water supply occurs. We believe that this duration is also appropriate for the proposed EP 27 well battery.

We have combined WUP Nos. 192 and 347, which have been cancelled, under a single new water use permit, WUP No. 650 (attached). The terms and conditions of WUP No. 650 are identical to those approved for other interim water use permits in the Puuloa and Kapolei Aquifer Systems.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

ERNEST Y.W. LAU
Deputy Director

LN:ss
Attachments
May 15, 2003

Ref: 650.wup

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Nelson W.G. Lee
Executive Vice President
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well Nos. 1901-06, 1902-01, 09, 10, 11
Puuloa Ground-Water Management Area, Oahu

This letter transmits your water use permit for the EP 27 Battery (Well No. 1901-06, 1902-01, 09, 10, 11) for use of 3.300 million gallons per day (mgd) of water on a 12-month moving average basis that was administratively modified by the Commission on Water Resource Management (Commission) per Declaratory Ruling DEC-ADM97-A1 and Administrative Rule 13-171-23(b). This water use permit, WUP No. 650, supersedes WUP Nos. 192 and 347, which have been cancelled. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 19:

Special Conditions

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment A and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment B.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit.

We draw your attention to two key conditions of your permit that require your response. First, you are required to keep a record of your monthly total pumpage, water level, salinity, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

Second, you are required to submit a water shortage plan to the Commission within thirty (30) days of the issuance date of this permit. Your water shortage plan simply identifies what you are willing to do should the Commission declare a water shortage situation in the Puuloa Ground-Water Management Area and can be as short as a one page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from all sources. The Commission is required, by law, to formulate a plan to implement such area-wide reductions, which should accommodate, include, and be consistent with your plans. Therefore, your help, by submitting your water shortage plan, is greatly needed in formulating the Commission’s overall Water Shortage Plan.

If you have any questions, please call Lenore Y. Nakama of the Commission staff at 587-0218.

Sincerely,

Peter T. Young
Chairperson

Attachments
GROUND-WATER USE PERMIT
WUP NO. 650

PERMITTEE

Permittee/Water User
Haseko (EWA), Inc.
820 Mililani St., Ste. 810
Honolulu, HI 96813

Landowner of Source
Address Same

PERMITTED SOURCE INFORMATION

Island Oahu
Water Management Area Ewa Caprock
Aquifer Sector Ewa Caprock
Aquifer System Puuloa
System Sustainable Yield 1000 mg/l of Chloride
Well Name EP 27 Battery
State Well No. 1901-06, 1902-01, 09, 10, 11

PERMITTED USE INFORMATION

Reasonable beneficial use Dust Control, Golf Course and Landscaping Irrigation
Withdrawal (12 month moving ave.) 3.300 mgd
Location of water use
TMK # 9-1-12:5
Address Ocean Pointe
State land use classification Urban
County zoning classification Various

Pursuant to Hawaii’s State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the permittee is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 17 4C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 and July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.
14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declarative of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Attachment
April 25, 2003

Ernest Lau, Deputy Director
Commission on Water Resource Management
State of Hawaii
Department of Land and Natural Resources
Attn.: Lenore Nakama
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Re: Water Use Permits Nos. 192 and 347 (EP 27)
State Well No. 1902-01

In re the Matter of the Water Use Permit Application
For the Ewa Marina Contested Case Hearing
Case No. CCH-OA96-1

Dear Mr. Lau:

HASEKO Ewa, Inc. (HASEKO), is the holder of each of the above-referenced water use permits and seeks modification of the permits as follows. First, HASEKO requests that the Chairperson approve the administrative transfer of Water Use Permit (WUP) nos. 192 and 347 from State Well No. 1902-01 to a battery of wells located on HASEKO’s property pursuant to Commission on Water Resource Management (CWRM) Declaratory Ruling No. DEC-ADM97-A1. Second, HASEKO requests that the Commission modify the WUP issued in Contested Case No. CCH-OA96-1 (Marina Permit), without a hearing, pursuant to Rule §13-171-23(b) of Hawaii Administrative Rules (HAR).

1. MODIFICATION OF WATER USE PERMIT NOS. 192 AND 347. On December 16, 1992, CWRM issued WUP no. 192 to Oahu Sugar Company, Ltd. (OSCO), and HASEKO allowing for the existing use of 4.160 million gallons per day (mgd). On July 13, 1994, CWRM modified WUP no. 192 to allow for 2.660 mgd of agricultural use and issued WUP no. 347 to allow for 1.5 mgd of urban use. On May 14, 1997, CWRM modified WUP nos. 192 to allow for 1.8 mgd of urban use. On July 18, 2001, CWRM extended the permits to July 1, 2006, until treated wastewater became available and acceptable for use, or a significant change in water use or supply occurred. On March 12, 2003, pursuant to a request by HASEKO, CWRM issued a variance to HASEKO granting it relief from the 1,000 mg/l chloride limit for Well No. 1902-01.

CWRM Declaratory Ruling No. DEC-ADM97-A1 issued January 5, 1998, provides that the CWRM Chairperson has been delegated the authority to approve allocation adjustments where a) the net change in permitted use within the aquifer is zero, b) the modification would result in more efficient and
optimal operation of multiple sources under a single operator, c) no adverse impacts to water resources or other existing legal uses are anticipated, and d) end use location and type remain unchanged.

In order to address the increased chloride levels at EP 27 and to continue to provide non-potable water for the same uses at the HASEKO parcel, HASEKO requests that the Chairperson approve the administrative transfer of WUP nos. 192 and 347 to a battery of wells set forth in the map prepared by Tom Nance, P.E., a true and accurate copy of which is attached hereto as Exhibit A. HASEKO further anticipates that it will be submitting well drilling permits for these proposed wells. HASEKO believes that this requested modification meets each of the criteria set forth in the declaratory ruling as follows:

a) Net Change in Permitted Use with Aquifer is Zero. As noted in the attached map, the proposed wells are all located on the HASEKO parcel and are within the Ewa Caprock aquifer. The total withdrawn under WUP nos. 192 and 347 would remain unchanged.

b) Modification would Result in More Efficient and Optimal Operation of Multiple Sources Under a Single Operator. In order to address the increased chloride levels encountered at EP 27, the proposed battery of wells will lessen the drawdown occurring at EP 27 and will utilize shallow wells at sites across the HASEKO property. It is believed that this reduction in pumpage at EP 27 will result in an overall reduction in the chloride levels of the water withdrawn. Additionally, it is noted that the Board of Water Supply’s (BWS) reclaimed wastewater system has not yet been extended into the HASEKO parcel. HASEKO has applied to the BWS for reclaimed water and it is anticipated that the amounts that are presently available will be used at the district park site located on the mauka edge of its property.

c) No Adverse Effects on Water Resources or Other Existing Legal Uses. As the HASEKO property and well sites are located on the makai edge of the Ewa Plain, it is noted that there are no downgradient wells and thus there will be no adverse impact to the resource or other users.

d) End Use Location and Type Remain Unchanged. The water withdrawn will continue to be used by HASEKO for dust control on its parcel and for irrigation at its turf farm.

Based upon the foregoing, HASEKO requests that the Chairperson modify the terms of WUP 192 and 347 to allow for withdrawal of the allocated amounts from the well sites described in the attached map.

2. MODIFICATION OF THE MARINA WATER USE PERMIT. The Marina Permit, issued by CWRM on September 25, 1998, provides at specials conditions (b) and (c) that WUP nos. 192 and 347 shall be cancelled with HASEKO’s written consent upon the start of marina construction and that upon cancellation, HASEKO shall use reclaimed water for its non-potable needs. HASEKO is preparing to excavate the marina and anticipates that construction will begin shortly. The BWS’ reclaimed wastewater system has been extended to a point near the mauka-Diamond Head (northeast) corner of the HASEKO parcel. HASEKO has requested that reclaimed water be supplied to the Ocean Pointe development and the BWS has agreed to supply 100,000 gallons per day (gpd) to HASEKO for irrigation purposes at the district park site located alongside Ft. Weaver Road. HASEKO still requires non-potable water for dust control at locations across its property and for irrigation of its sod farm operation.
HAR §13-171-23(b) provides in relevant part:

All permit applications shall be treated as initial permit applications and be subject to sections 13-171-12 to 13-171-22; except that if the proposed modification involves an increase in the quantity of water not exceeding an average amount per month as set forth in section 13-171-14, the commission, at its discretion, may approve the proposed modification without a hearing provided that the permittee establishes that:

(1) A change in conditions has resulted in the water allowed under the permit becoming inadequate for the permittee’s proposed needs; or

(2) The proposed modification would result in a more efficient utilization of water than is possible under the existing permit.

HASEKO requests that the Commission approve the modification of the Marina Permit, without a hearing, to allow HASEKO to defer surrender of WUP nos. 192 and 347 until reclaimed water becomes available and acceptable for use on the HASEKO parcel, and then to allow HASEKO to retain the allocation for use as a supply of backup or supplemental non-potable water in the event that reclaimed water becomes unavailable in quantities sufficient for HASEKO’s non-potable needs. HASEKO believes that the Commission has the authority to grant this request as the same falls within the exemption set forth in HAR §13-171-23(b) as follows.

First, the modification seeks an increase in water allocation, e.g. from a surrender of the entire permitted amount to the present interim allocated amount of 3.166 mgd, with the same being less than amount originally allocated from EP 27 as an existing use pursuant to HAR §13-171-14. In this case, the original existing use allocated by CWRM to OSCO on December 16, 1992, was 4.160 mgd. The amount presently allocated and sought to be retained is actually less than that permitted as an existing use.

Second, HASEKO observes that there has been a change in circumstances from those envisioned by CWRM when the Marina Permit was issued. As noted in the Marina Permit, it was envisioned that upon the commencement of marina construction, reclaimed water would be available in sufficient quantities to HASEKO for its non-potable needs. As of this date, HASEKO has applied for and received approval for only a limited amount of reclaimed wastewater with all of the allocation being slated for use at the park site nearest to the transmission line that terminates mauka of the HASEKO property. There is presently insufficient reclaimed water available for the remainder of HASEKO’s non-potable needs.

In addition to the lack of supply, it is observed that the transmission system for the reclaimed water does not extend throughout the HASEKO property. While development plans do call for non-potable lines to extend to the golf course, parks, and landscaping located throughout the development, the transmission system needed to deliver the water to the points of use does not exist.

Further, as the EP 27 water is presently being used for dust control, it is noted that areas under construction where dust control is needed are adjacent to residential communities. It is contemplated that residents in these adjacent areas will oppose use of reclaimed water in aerosol form especially where such water could reach their property either through overspray or runoff.
Finally it is noted that when the condition was originally imposed on Haseko, it was unknown what the source, quality, and quantity of, and transmission system for, the reclaimed water would be. Now it is known that the reclaimed water system is a single source plant capable of producing only limited quantities of R-1 quality water. In the event that there is a disruption in service (plant maintenance, low supply of seed wastewater, etc.), users of reclaimed water will need a supply of back up water. It is noted that this situation differs significantly from the BWS potable supply as there is no unified multiple source delivery system in place. It is also believed that the other reclaimed water users in the caprock have been allowed to retain their caprock allocations for the purposes of back up supply. HASEKO simply requests that this same accommodation given to other reclaimed water users be extended to it when reclaimed water becomes available.

Third, and in the unlikely event that the Commission finds that there has not been a change in circumstances justifying the modification, the proposed modification operates to make more efficient use of the resource. As noted above, reclaimed water is neither available in sufficient quantities nor is there a transmission system in place capable of delivering the reclaimed water to the planned points of use. In the absence of either reclaimed water or non-potable caprock water from EP 27 (or the proposed battery of wells described in Part 1, above), HASEKO will have no option other than to use potable water from the BWS system to satisfy its non-potable water needs.

Thank you for your attention to this matter. Should you have any questions or concerns regarding the foregoing, please contact me at (808) 536-3711 or our attorneys Angela Fong and Randall K. Ishikawa at (808) 528-4200.

Very truly yours,

Nelson W. G. Lee
Executive Vice-President

enclosures
March 12, 2003

Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani St., Ste. 820  
Honolulu, HI 96813-2938

Dear Mr. Lee:

This is in response to your February 20, 2003 letter, requesting a variance from the 1,000 mg/l chloride limit for Well No. 1902-01. Our review of the reported chlorides from the well shows that the chlorides have fluctuated about the 1,000 mg/l limit for the last two years.

The Commission’s July 18, 2001 action to extend interim caprock water use permits delegated the authority to the Chairperson to approve variances from the chloride limit, with consideration to the well’s proximity to the ocean and to other wells, its history of chloride and pumpage, the availability of alternative sources of water and possibility for conversion.

Well No. 1902-01 is near the ocean, and there are no other wells downgradient. Haseko (Ewa), Inc. (Haseko) owns the land from the well site to the shoreline. Since the cessation of sugarcane agriculture on the Ewa plain, the chloride concentration of the well water has gradually increased, as was expected with the loss of imported basal irrigation water. We understand that Haseko is currently in negotiations with the Board of Water Supply, the purveyor of reclaimed water from the Honouliuli Wastewater Reclamation Plant, and will convert to reclaimed water when it becomes available, replacing the use of the well for irrigation and dust control.

For the above reasons, the variance request is approved. The variance shall expire six (6) months after the first date of reclaimed water service delivery.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]  
DEAN A. NAKANO  
Acting Deputy Director

LN:ss
OCEAN POINTE
(AT CWRM ON FEBRUARY 28, 2003)

I. STATUS AND UPDATE OF PROJECT (See Attached Old & Current Master Plan)
   A. Residential / Commercial
   B. Marina

II. WATER USE PERMITS
   A. EP-27
      (1) Chloride Variance (See Attached February 20, 2003 Letter)
      (2) WUP 347 (1.5 mgd for Urban)
      (3) WUP 192 (1.8 mgd for Agricultural)
   B. Marina Water Use Permit
      (1) Preconstruction Work with COE (See Attached Condition e)
      (2) Waiver of Conditions b and c (See Attached)
         (a) Reclaimed water is not sufficiently available
         (b) Prefers not to use reclaimed water near residences
         (c) Potable water should not be used for dust control
         (d) Back up supply is needed

III. DISCUSSION
These materials are based on the current development plans for Ocean Points. They are conceptual in nature and there are no guarantees that all or any of the components will be developed or that the components will be developed as depicted here.

09/24/02
February 20, 2003

Mr. Dean Nakano, Acting Deputy Director  
Commission on Water Resource Management  
1151 Punchbowl Street, Room 227  
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347, Well No. 1902-01  
Variance from the 1000 mg/l Chloride Limit

Dear Mr. Nakano:

The Commission on Water Resource Management’s July 18, 2001 submittal indicated that operators of wells that have exceeded the 1,000 mg/l chloride limit should seek a variance from the Commission. In an exhibit to that staff submittal, Mr. Glenn Bauer noted that Haseko’s EP-27 well has had chlorides ranging from 800-900 mg/l and had stabilized at approximately 900 mg/l. See page 2-3 of Exhibit 7.

However, a recent review of readings from the EP-27 well indicates that the chlorides from the well have exceeded the 1,000 mg/l chloride limit. We, therefore, are seeking a variance from the 1000 mg/l chloride limit. Certain operational steps are being implemented to reduce the chloride levels below the 1,000 mg/l chloride limit during your consideration and hoped for approval of this variance request.

We also hope that in the next couple of weeks we will be able to schedule a briefing with you and your staff to update you and your staff on the caprock modeling and current activities and on our updated plans for caprock water and reclaimed water for the Ocean Pointe (formally known as the Ewa Marina) project. We will contact you to set up an appointment. Thank you for your kind consideration of this request, it is greatly appreciated. If you have any questions or need further information about our request, please do not hesitate to contact me at 536-3771, ext. 225.

Sincerely,

Nelson W.G. Lee  
Executive Vice President
In the Matter of the Water Use Permit Application for the Ewa Marina Contested Case Hearing

Case No. CCH-OA96-1

FINDINGS OF FACT
CONCLUSIONS OF LAW, AND
DECISION AND ORDER
V. DECISION AND ORDER

The Commission approves the issuance of a water use permit to Haseko (Ewa), Inc. for the reasonable and beneficial "use" of Puuloa Aquifer System ground water for the proposed excavation of the Ewa Marina, subject to the standard water use permit conditions listed in Attachment A and the following special conditions:

a. Standard Conditions 9, 10, 11, 12, 16, 17, and 18 are waived.

b. Not later than the start of the construction phase (as described in the Department of the Army Corps of Engineers Permit PODCO 2117) of the marina, the applicant's water use permits, WUP Nos. 192 and 347, for a total allocation of 3.3 mgd, shall be canceled, with the written consent of the permittee, in accordance with Haw. Rev. Stat. § 174C-58.

c. Upon cancellation of WUP Nos. 192 and 347, pursuant to b., above, the applicant shall use reclaimed water for its non-potable needs.

d. This permit shall be subject to the Commission's periodic review of the progress of the construction of the marina and the applicant's compliance with the conditions of this permit. The Commission may initiate action to revoke the permit if construction of the marina is not completed by December 31, 2003, which coincides with the expiration date of the U.S. Army Corps of Engineers permit.

e. The applicant shall submit to the Commission a copy of the complete pre-construction report, required by the Corps, describing the results of the pre-construction activities, the adjustments made to the model, and the predicted behavior of the caprock aquifer when the marina is excavated and opened.

f. During the construction of the marina, the applicant shall submit to the Commission copies of monitoring results and any revised predictions, required by the Corps.

g. To protect the traditional and customary rights exercised in the project area during the construction of the marina, access to the shoreline fronting the project area must be permitted for the reasonable exercise of traditional and customary practices of native Hawaiians to the extent feasible and safe.

h. After the completion of the project, the Applicant will provide public access to the marina waterway and ocean shoreline for the purpose of permitting the reasonable exercise of traditional and customary practices of native Hawaiians.

i. Post construction, the applicant shall submit to the Commission copies of quarterly reports, required by the Corps, analyzing the data to determine impact of the completed marina on the resource value of the Wetland Preservation Area, the habitat value of the anchialine pools, and the ground-water levels and salinity gradients on the caprock aquifer.

j. The applicant shall comply with all other applicable statutes, ordinances, and regulations of the Federal, State, and City and County of Honolulu governments.
February 20, 2003

Mr. Dean Nakano, Acting Deputy Director
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347, Well No. 1902-01
Variance from the 1000 mg/l Chloride Limit

Dear Mr. Nakano:

The Commission on Water Resource Management’s July 18, 2001 submittal indicated that operators of wells that have exceeded the 1,000 mg/l chloride limit should seek a variance from the Commission. In an exhibit to that staff submittal, Mr. Glenn Bauer noted that Haseko’s EP-27 well has had chlorides ranging from 800-900 mg/l and had stabilized at approximately 900 mg/l. See page 2-3 of Exhibit 7.

However, a recent review of readings from the EP-27 well indicates that the chlorides from the well have exceeded the 1,000 mg/l chloride limit. We, therefore, are seeking a variance from the 1000 mg/l chloride limit. Certain operational steps are being implemented to reduce the chloride levels below the 1,000 mg/l chloride limit during your consideration and hoped for approval of this variance request.

We also hope that in the next couple of weeks we will be able to schedule a briefing with you and your staff to update you and your staff on the caprock modeling and current activities and on our updated plans for caprock water and reclaimed water for the Ocean Pointe (formally known as the Ewa Marina) project. We will contact you to set up an appointment. Thank you for your kind consideration of this request, it is greatly appreciated. If you have any questions or need further information about our request, please do not hesitate to contact me at 536-3771, ext. 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President
Mr. Nelson W.G. Lee  
Executive Vice President  
Haseko (Ewa), Inc.  
820 Mililani Street, Ste. 820  
Honolulu, HI 96813-2938  

Dear Mr. Lee:  

This is in response to your June 26, 2002 letter, requesting a variance from the weekly sampling and reporting schedule to a monthly schedule for Well No. 1902-01. Based on our analysis of the data collected at Well No. 1902-01, which indicates that ground-water conditions at the site have stabilized, your request is hereby approved.  

If you have any questions please contact Lenore Nakama of the Commission staff at 587-0218.  

Sincerely,  

LINNEL T. NISHIOKA  
Deputy Director  

LN:ss
June 26, 2002

Ms. Linnel T. Nishioka, Deputy Director
Commission of Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96809

Re: Water Use Permit No. 347 Well No. 1902-01
Chloride Sampling Protocol

Dear Ms. Nishioka:

The Commission on Water Resource Management Notice Action, dated August 6, 2001 required interim permittees to adhere to a weekly chloride sampling protocol. Since August of last year, Haseko has provided the Commission with weekly chloride sampling reports as requested.

Recent discussions and review between our consultant, Mr. Michael Knight of URS and your staff, seem to indicate from the data collected that it appears the caprock has stabilized sufficiently to warrant sampling monthly rather than weekly.

We, therefore, would like to make a request to relax our sampling frequency from weekly to monthly.

Sincerely,

Nelson W.G. Lee
Executive Vice President

NWGL: dsl
Cc: Michael Knight, URS
Notice of Action
Extension of Interim Water Use Permit
Puuloa Ground Water Management Area, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on July 18, 2001, to extend your interim water use permit (WUP No. 347, Well No. 1902-01), subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace former special conditions):

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS REG.
CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES.

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving
the receipt attached and present the article at a post office service window or hand it to your rural carrier.
(no extra charge)

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of
the article, date detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return
receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space per-
mits. Otherwise, affix to back of article. Endorse front of article RETURN RECEIPT REQUESTED
adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse
RESTRICTED DELIVERY on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return
receipt is requested, check the applicable boxes in Item 1 of Form 3811.

- U.S.G.P.O. 1989-234-555
SENDERS:

- Complete items 1 and/ or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

Complete items 1 and/or 2 for additional services.

1. Address
2. Restricted Delivery
3. Article Addressed to:
   Mr. Nelson Lee
   Haseko (Ewa), Inc.
   820 Mililani St., Ste. 810
   Honolulu, HI 96813
   -ewa_13e.act

4a. Article Number
   P 354 448 612

4b. Service Type
   - Registered
   - Certified
   - Express Mail
   - Insured
   - Return Receipt for Merchandise
   - COD

5. Received By: (Print Name)
   Deborah See Lundén

6. Signature: (Addressee or Agent)
   x Deborah See Lundén

7. Date of Delivery
   5/7/01

8. Addressee's Address (Only if requested and fee is paid)

I also wish to receive the following services (for an extra fee):

   1. Address
   2. Restricted Delivery

Consult postmaster for fee.

Thank you for using Return Receipt Service.
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. Box 621
Honolulu, Hawaii 96809

Print your name, address, and ZIP Code in this box.
f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment C.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

The Commission will suspend the four-year period of nonuse for permittees that convert to reclaimed water service, beginning from the first date of reclaimed water service delivery under an agreement with the Board of Water Supply. The suspension will be for the duration of the interim permit or until the agreement with Board of Water Supply for reclaimed water service delivery ends, whichever comes first.

The Commission decided that interim permittees shall be notified by letter of the Commission action and extended permit duration and that re-issuance of new interim water use permits for these extended permits is unnecessary.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

LN:ky
Attachments
TESTIMONY BY APPLICANT:

Mrs. Harms stated that according to the Hawaii County Department of Water Supply (DWS), she would need 2 hookups per unit and a total of 16 units that require water. She stated that the units are located approximately 100 feet from where the County system terminates at the entrance to Vacationland. Mrs. Harms stated that DWS informed her that only 50 hookups were allowable to the Association meter, and that the association meter was filled to the maximum. At the present, Mrs. Harms stated that she has a temporary hookup of 10 lines with DWS.

MOTION: (RICHARDS/NOBRIGA)
To approve the submittal as amended in Alternate Recommendation #1.
UNANIMOUSLY APPROVED AS AMENDED.

4. Extension Of Interim Water Use Permits, Puuloa and Kapolei Ground Water Management Areas, Oahu

PRESENTATION OF SUBMITTAL: Ms. Lenore Nakama

AMENDED RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 4, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

   a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

   b. 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.

   c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted.

   d. The duration of the interim permit shall be

      a) to July 1, 2006, or
      b) until treated wastewater is available and acceptable for use, or
      c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.
Minutes
July 18, 2001

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirements is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Exhibit 9.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. Grant variances from the 1,000 mg/l chloride limit to Hawaii Prince Golf Club (Well Nos. 1900-02, 1900-17 to 20, 1901-03), Pacific Tsunami Warning Center (Well No. 1900-23), and The Estate of James Campbell (Well Nos. 1905-08,10). The variances shall expire six (6) months after the first date of reclaimed water service delivery.

3. Delegate the authority to the Chairperson to approve future variance requests.

4. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

5. Suspend the four-year period of nonuse for the Hawaii Prince Golf Club, Coral Creek Golf Course and Barbers Point Kapolei Golf Course, beginning from the first date of reclaimed water service delivery under their agreement with the Board of Water Supply. The suspension will be for the duration of these interim permits or until the agreement with Honolulu Board of Water Supply for reclaimed water service delivery ends whichever comes first. This condition shall apply to any other interim permittee that converts to reclaimed water service.

TESTIMONY BY APPLICANT:

Ms. Terry Kondo of Watanabe Ing & Kawashima representing Hawaii Prince Golf Course expressed concerns on staff recommendations #2, and 1g.

Mr. Tom Nance stated that when the golf course switches over to the effluent, the wells will not be run weekly. They will be run on occasion to keep them viable for use when effluent is not available. They will not be used on a weekly basis so providing a weekly data will become difficult. In the case of Hawaii Prince, samples that were obtained at one-half to
one-hour intervals were misleading. An internal sample protocol was developed so that all wells have to be run continuously for 24 hours before samples can be obtained. For that reason, Mr. Nance asked if condition 1 g could be modified that reporting be done on a monthly basis. He stated that trends are better noticed on a monthly data report.

Ms. Nakama stated that an administrative waiver was granted for Kapolei Golf Course because the long-term data was so stable. No significant movements were indicated in the water levels. Hawaii Prince and Coral Creek could request an administrative waiver from the weekly chloride-sampling requirement from the Chairperson.

Mr. Glenn Bauer stated that records showed that there were no major differences for Hawaii Prince’s chlorides in the weekly and monthly data. He felt that monthly data reporting would be sufficient.

MOTION: (NOBRIGA/GIRALD)
To approve the submittal as amended.
UNANIMOUSLY APPROVED AS AMENDED.

5. County of Hawaii, Department of Public Works, Application for a Stream Channel Alteration Permit (SCAP-HA-325), Install Three Concrete Culverts and Replace Bridge Structures, Waiakea Stream, Hilo, Hawaii (TMK 2-4-01:007, 010, 122)

PRESENTATION OF SUBMITTAL: Mr. Edwin Sakoda

RECOMMENDATION:

That the Commission:

Approve a stream channel alteration permit for the construction of culverts at Puainako Street and bridge modifications at Komohana Street, Waiakea Stream, Hilo, Hawaii (TMK: 2-4-01:007, 010, 122). The permit shall be valid for two years subject to the standard stream channel alteration permit conditions in Exhibit 5.

MOTION: (NOBRIGA/RICHARDS)
To approve the submittal.
UNANIMOUSLY APPROVED.


PRESENTATION OF SUBMITTAL: Mr. Ryan Imata
BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Waiawa, Ewa-Kunia, and Makaiwa Aquifer Systems. Due to uncertainties regarding the caprock's sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock. Then-current uses were operating under permanent water use permits.

Designation of the Ewa Caprock as a water management area was precipitated by the City and County of Honolulu's (City) urbanization plans for the Ewa area and a City ordinance requiring dual water systems for all new developments. Potable water was to be provided through the municipal system. Possible sources of non-potable water were brackish ground water from the Ewa Caprock aquifer and reclaimed sewage effluent. The estimated non-potable demand of 25 mgd after full buildout (Kumagai, 1996) far exceeded the estimated natural recharge to the caprock aquifer of less than 16 mgd (Bauer, 1996).

Because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture, in 1993, the Commission began awarding temporary one-year permits for new uses of caprock ground water. In analyzing water availability, the Commission used guidelines for estimating sustainable yields for the Puuloa, Kapolei, and Malakole areas (Yuen & Associates, Inc., 1989).
On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.

At the July 5, 1995 Commission meeting in Honokaa, Hawaii, the Commission extended the permits, which were now called interim permits, until such time that a formal decision could be made on Oahu.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a sustainable yield for the caprock.

Also on March 13, 1996, the Commission adopted the following policy statement, clearing the way for application of reclaimed water on lands overlying the Ewa Caprock Aquifer:

"It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses."

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for individual irrigation wells at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The rationale behind the chloride cap was to limit pumpage in those wells approaching the limit, to prevent a build-up of sodium in the clay soils, and to protect other users adjacent to those pumping higher chloride water. The Commission also adopted the Puuloa, Kapolei, and Malakole Aquifer Systems in the Ewa Caprock Sector and approved pending applications for new and continued irrigation uses. The specified duration of the interim water use permits was to October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincided with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provided a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999.

On October 22, 1998, the Commission extended the interim water use permits, subject to the Standard Conditions of a water use permit and new special conditions (Exhibit 3). The interim permits specified a duration to: 1) July, 2001, or 2) until treated wastewater is available and acceptable for use, or 3) until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The list of interim permits due to expire in July, 2001 is shown in Exhibit 4. The graphs of reported pumpage and chlorides are shown in Exhibit 5.

On July 20, 2000, an agreement was reached between the Honolulu Board of Water Supply (BWS), the City, and U.S. Filter for BWS' purchase of the Honolulu Wastewater Reclamation Facility. The agreement includes BWS becoming the purveyor of reuse water, with the task of securing customers for 10 mgd by July 1, 2001. U.S. Filter will operate the facility for BWS under a 20-year service agreement. The City will provide secondary effluent to the facility and will take back 4 mgd of the R-1 water for City reuse applications. Some of the reclaimed water will supply industrial uses at Campbell
Industrial Park. (A briefing by the BWS on their reclamation program is scheduled as a separate item on this agenda.)

ANALYSIS/ISSUES:

A significant change in the water supply picture has been the acquisition of the Honouliuli Wastewater Reclamation Facility by the BWS and BWS' new role as purveyor of reclaimed water. Since their recent acquisition of the plant, BWS has been actively promoting the use of reclaimed water for non-potable needs over the Ewa Caprock Aquifer. Negotiations have been finalized for some City projects (West Loch and Ewa Villages developments) and for some of the golf courses that have interim caprock permits. Currently, we understand that a memorandum of understanding for golf course irrigation has been negotiated with Coral Creek, Hawaii Prince, and Barber's Point. The agreement provides for a set rate to July 1, 2006. The staff feels that this would be a good time to revisit these permits and the progress of the reclaimed water effort.

Even with reclaimed water as the primary irrigation source, ground water would still be used for the golf course water features, to maintain the pumps, and to mitigate potential reclaimed water quality or odor issues that may arise. The long-term goal of the golf courses is to blend reclaimed water with caprock ground water. Until reclaimed water is actually delivered and has been shown to be a reliable and acceptable source, the golf courses have requested that their interim permits be renewed for the same quantities. They have also requested that the Commission suspend the four-year nonuse clause for permit revocation. Section 174C-58 Haw. Rev. Stat. provides for the Commission and permittee to enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year revocation period. The staff feels that the promotion of alternative non-potable sources to meet non-potable needs is a satisfactory reason to suspend the four-year revocation period, given the uncertainties associated with this new source conversion, provided that other users and the resource are adequately protected.

PROTECTION OF THE RESOURCE

The current sustainable yield for the caprock aquifers is defined by a sustainable capacity at all irrigation wells in the Puuloa and Kapolei Aquifer Systems which prohibits individual pumpages that cause the specific well to exceed a 1,000 mg/l chloride cap. Enforcement of the chloride cap provides adequate protection for the aquifer. Management of the resource via a chloride cap was adopted on May 14, 1997 as an interim management plan. The staff feels that this management approach has been effective and is not recommending that the strategy be changed at this time.

MAXIMIZING THE UTILITY OF THE RESOURCE

Maximizing the utility of the caprock is intimately tied to wastewater reuse. As wastewater reuse comes on line, the sustainable yield of the caprock will increase, meaning more pumpage may be sustained under the 1,000 mg/l chloride limit. However, the distribution of reclaimed wastewater is uncertain, which will affect chloride distributions and total nonpotable supply. Of the projected total 13 mgd of R-1 water from the Honouliuli Wastewater Reclamation Plant, 1 mgd is needed for in-plant process water, and 2 mgd is planned for industrial uses at James Campbell Industrial Park. This leaves about 10 mgd available for irrigation needs in the region.
Given the City's current plans, the staff estimates that the potential future supply of nonpotable water for irrigation uses on lands overlying the Puuloa Aquifer System, where the competition for nonpotable irrigation water is most severe, could be up to about 15 mgd: 10 mgd reclaimed water plus approximately 5 mgd natural sustainable yield (Bauer, 1996). This assumes that 100% of the treated effluent will be available for reuse in Puuloa, which is improbable. But the availability of reclaimed water will present permittees with a possible alternative should their wells exceed the 1,000 mg/l chloride limit. Likewise, should the 1,000 mg/l limit not be exceeded, the permittees may continue to pump and may even work out a management plan which would allow for alternating between caprock and wastewater reuse to maximize the economical use of both resources. But ultimately, based on current reclaimed water plans, total allocations for the Puuloa Aquifer System should not exceed 15 mgd. Current allocations in the Puuloa Aquifer System total 14.817.

**WELL INTERFERENCE**

Since there are no ground-water models (solute-transport) that can predict chloride response to pumpage at individual well sites, close monitoring of the resource and enforcement of the chloride cap is critical to protect the resource in this interim period while the City finalizes plans to fully implement its reclamation program. Exhibit 6 shows that the caprock aquifer was significantly influenced by sugarcane irrigation practices and is still in a state of flux. Currently, all interim permittees are required to submit weekly reports of pumpage, water levels, chlorides, and water temperature (unless a variance from this requirement has been approved). All permittees have been put on notice that the reporting requirement will be strictly enforced.

Although enforcement of the 1,000 mg/l chloride cap at each well site will provide adequate protection for the resource, it may not be sufficient to preclude well interference. However, not only will wastewater reuse further protect the resource, it will also help to reduce the effects of well interference that may cause individual wells to exceed the 1,000 mg/l chloride cap. Special Condition f. has been added to the existing interim permits recommended for extension and will be added to all future caprock permits to put the permittees on notice of the risk of reliance on caprock ground water and its uncertain sustainable yield.

The staff has been sending all interim permittees in Puuloa the monthly bulletin which shows all pending permit applications, which should provide the permittees sufficient notice of new proposed uses of Puuloa Caprock ground water. Permittees should review new applications and water data from other nearby wells to proactively protect their sources. Permittees are encouraged to submit comments or objections in accordance with Administrative Rule 13-171-18 (Objection to Proposed Water Use Permit). Further, the staff has been analyzing the weekly water data reports, and we are continuing to work on triggers to implement a water shortage plan. These triggers may be related to some modification of Exhibit 6. Should valid claims of well interference be raised, either by permittees or as a result of the staff's analysis, the Commission may consider implementing a water shortage plan to address the well interference issue.

At this time, only an informal and incomplete water shortage plan exists. On May 14, 1997, the Commission approved a permit classification system for a water shortage plan for the Puuloa Aquifer System as provided under Administrative Rule 13-171-42:

" (a) The commission shall formulate a plan for implementation during periods of water shortage. As a part of the plan, the commission shall adopt a reasonable system of permit \[4\]
classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.

(b) In accordance with this chapter, the commission may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

(c) All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission."

For the Puuloa Aquifer System, the Commission established the highest priority of nonpotable use as agriculture because the State's policy is to promote agriculture, and also because agricultural correlative uses are assured through the 1978 Constitutional Amendment. The second priority in water use is golf course irrigation because of the economic impacts that may result from inadequate water supply. The lowest priority in water use is landscape irrigation and dust control.

Water shortage plans were requested from all of the users in Puuloa, with the exception of United States Fish and Wildlife Service. The requirement to submit individual water shortage plans is highlighted in the cover letter that transmits the permit and is also stated in Standard Condition 17. The staff will continue to work with users to develop their individual plans. As part of the May 14, 1997 action, the Commission has also delegated the authority to the Chairperson to approve individual water shortage plans and the regional water shortage plan for the Puuloa Aquifer System.

CHLORIDE CONCENTRATION TRENDS

The Commission staff established a caprock well monitoring network in 1993. Each month, the staff collects water level and chloride data at selected caprock wells. The staff's analysis of the chloride trends at the individual wells and regionally is attached (Exhibit 7). The data show that the chloride concentration in the caprock water varies significantly from place-to-place and from well to well. Some of the reasons for these disparities include the subsurface geology, distance from the coast, well construction, pump capacity, and pumping schedule. Many of the sources have not exceeded the 1,000 mg/l chloride limit. The baseline data suggest that those wells that have exceeded the limit will continue to pump water exceeding 1,000 mg/l of chloride unless there is an influx of less saline water or a complete cessation of pumpage. The staff recommends that those operators with wells and/or batteries having >1,000 mg/l of chloride should apply for a variance from the established limit. Once reclaimed water is available, these wells should only be used for back-up purposes or for blending with reclaimed water to a quality of 1,000 mg/l of chloride or less.

Currently, variances from the chloride cap have been granted to Hawaii Prince Golf Club (Well Nos. 1900-02, 1901-17 to 20, 1901-03) and Pacific Tsunami Warning Center (Well No. 1900-23). In a letter dated August 7, 2000, The Estate of James Campbell (Campbell) requested that the Commission waive the salinity limit for its two nonpotable wells (Well Nos. 1905-08, 10). The Commission denied the request on November 16, 2000 because Campbell was in the process of transferring the nonpotable system to the BWS and an alternative source (reclaimed water) would soon be in place. Negotiations are still ongoing for the transfer of the nonpotable water system. Chloride levels at the Campbell wells are now about 1,200 ppm. The staff is recommending that the Commission approve temporary variances from the chloride limit pending the implementation of the reclaimed water system for those users that have requested variances. Other users whose wells are close to the chloride cap may also request variances. Unless a variance is requested and approved, wells exceeding the chloride limit
must shut down. The staff’s recommendation on a variance request would be made with consideration to the well’s proximity to the ocean and to other wells, its history of chloride and pumpage, the availability of alternative sources of water and possibility for conversion. The staff is recommending that future variance requests be delegated to the Chairperson for disposition.

RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 4, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

   a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

   b. 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.

   c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted.

   d. The duration of the interim permit shall be
      a) to July 1, 2006, or
      b) until treated wastewater is available and acceptable for use, or
      c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

   e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

   f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

   g. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data.

   h. Require adherence to the Conservation Conditions shown in Exhibit 9.

   i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. Grant variances from the 1,000 mg/l chloride limit to Hawaii Prince Golf Club (Well Nos. 1900-02, 1900-17 to 20, 1901-03), Pacific Tsunami Warning Center (Well No. 1900-23), and
The Estate of James Campbell (Well Nos. 1905-08,10). The variances shall expire six (6) months after the first date of reclaimed water service delivery.

3. Delegate the authority to the Chairperson to approve future variance requests.

4. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

5. Suspend the four-year period of nonuse for the Hawaii Prince Golf Club, Coral Creek Golf Course and Barber Point Golf Course, beginning from the first date of reclaimed water service delivery under their agreement with the Board of Water Supply. The suspension will be for the duration of these interim permits or until the agreement with Honolulu Board of Water Supply for reclaimed water service delivery ends whichever comes first. This condition shall apply to any other interim permittee that converts to reclaimed water service.

Respectfully submitted,

LINNEL T. NISHIOKA
Deputy Director

Attachment(s): A (Standard Conditions for a Water Use Permit)

Exhibit(s): 1 (Interim Permittees and Landowners at the Source Location)  
2 (Well Location Map)  
3 (Standard and Special Conditions, approved October 28, 1998)  
4 (Interim Permitted Uses, Puuloa and Kapolei Aquifer Systems)  
5 (Graphs of Reported Pumpage and Chlorides)  
6 (Chloride and Pumpage of Ewa Plantation Shallow Wells)  
7 (Chloride Concentration Trends)  
8 (Chloride Sampling Protocol)  
9 (Conservation Conditions)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 20, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:

   ATTACHMENT A
a. protect the water sources (quantity or quality);
b. meet other legal obligations including other correlative rights;
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the applicable aquifer system's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the applicable aquifer system, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage

ATTACHMENT A
pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the applicable Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
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EXHIBIT 2
EWA CAPROCK INTERIM PERMITS
Special Conditions
(approved on October 22, 1998)

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol (Attachment C) and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions (Attachment D).

EXHIBIT 3
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;

EXHIBIT 3
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission’s periodic review of the Puuloa or Kapolei Aquifer System’s sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa or Kapolei Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee’s water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance.
of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
Aquifer System Water Use Permit Index

ISLAND OF OAHU

<table>
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<tr>
<th>WUP No</th>
<th>Approved</th>
<th>Applicant</th>
<th>Well No.</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
<th>12-MAY (mgd)</th>
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Summary for 'SYSTEM' = KAPELEI (8 detail records)
Totalling 2.033 1.552

WMA Aquifer System: PUULOA

| WUP No | Approved | Applicant                   | Well No. | Sustainable Yield = |          |              |
|--------|----------|-----------------------------|----------|                     |          |              |
| 469    | 1/14/98  | HAWAII PRINCE GOLF CLUB     | 1900-02  | EP 22                | 0.301     | 0.160        |
| 469    | 1/14/96  | HAWAII PRINCE GOLF CLUB     | 1900-17  | WELL 2              | 0.352     |              |
| 469    | 1/14/98  | HAWAII PRINCE GOLF CLUB     | 1900-18  | WELL 3              | 0.123     |              |
| 469    | 1/14/98  | HAWAII PRINCE GOLF CLUB     | 1900-19  | WELL 4              | 0.053     |              |
| 469    | 1/14/98  | HAWAII PRINCE GOLF CLUB     | 1900-20  | WELL 5              | 0.055     |              |
| 501    | 8/26/98  | U.S. DOC/NOA/NWS            | 1900-23  | PACIFIC TSUNAMI     | 0.023     | N/R          |
| 469    | 1/14/98  | HAWAII PRINCE GOLF CLUB     | 1901-03  | WELL 1              | 0.249     |              |
| 505    | 10/22/98 | GENTRY HOMES, LTD.          | 1901-05  | GENTRY AREA 13      | 0.056     | N/R          |
| 347    | 5/14/97  | HASEKO (EWA), INC.          | 1902-01  | HASEKO WELL NO.     | 1.5       | 0.959        |
| 167    | 5/14/97  | C&C DEPT. OF PARKS & REC    | 2001-03  | GEIGER PARK         | 0.03      | N/R          |
| 302    | 5/14/97  | GENTRY DEVELOPMENT CO.      | 2001-04  | SUNRISE APT.        | 0.04      | 0.013 (12/00) |
| 450    | 5/14/97  | EWA BY GENTRY COMM ASSO2001-05 | SODA APT. | 0.066 | 0.037        |
| 171    | 5/14/97  | ARBORS ASSOCIATION          | 2001-07  | ARBORS              | 0.063     | 0.041 (5/10) |
| 168    | 3/13/96  | PALM VILLA II ASSOCIATION   | 2001-08  | PALM VILLA 2        | 0.048     | 0.045        |
| 344    | 5/14/97  | GENTRY DEVELOPMENT CO.      | 2001-09  | FORT WASHER        | 0.023     | 0.023 (12/00) |
| 355    | 5/14/97  | GENTRY DEVELOPMENT COR2001-10 | GENTRY AREA 24 | 0.022 | N/R |
| 504    | 11/18/98 | GENTRY HOMES, LTD.          | 2001-12  | KEAUNUI (AREA 30)   | 0.249     | N/R          |
| 578    | 5/14/97  | CORAL CREEK GOLF, INC.      | 2001-13  | CORAL CREEK NO      | 0.8       | 0.499        |
| 579    | 5/14/97  | CORAL CREEK GOLF, INC.      | 2001-14  | CORAL CREEK NO      | 0.892     |              |
| 169    | 5/14/97  | PALM COURT ASSOCIATION      | 2002-12  | PALM COURT 3       | 0.04      | N/R          |
| 579    | 5/14/97  | CORAL CREEK GOLF, INC.      | 2002-15  | CORAL CREEK NO      | 0.183     |              |
| 577    | 5/14/97  | CORAL CREEK GOLF, INC.      | 2002-17  | CORAL CREEK NO      | 0.498     | 0.150        |
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Monday, May 21, 2001
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Summary for 'SYSTEM' = PUULOA (25 detail records)

Totalled 4.867

Monday, May 21, 2001

Page 2 of 2
Hawaii Prince G.C. Combined Pumpage
(Well Nos. 1900-02,17 to 20;1901-03)

EXHIBIT 5

pumpage (mgd)

1
0.5
0

93 94 95 96 97 98 99 00 01
date (latest lata 04/01)

12-MAV
WUP
combined monthly withdrawal
Haseko (Ewa) Inc. Pumpage (EP27)
Well No. 1902-01

EXHIBIT 5

monthly pumpage  12-MAV  WUP  Max Cl-
Campbell Estate Caprock Pumpage
Kapolei Irr. Wells 1&2 (1905-08,10)

Combined Monthly Pumpage — 12-MAV — WUP — 1905-08 Chloride
Gentry Pacific, Ltd. Pumpage
Sunrise Apt. Well (Well No. 2001-04)

EXHIBIT 5

- monthly values
- requested amount
- 12-MAV
Palm Villa II Homeowners Association
Palm Villa II Well (Well No. 2001-08)

EXHIBIT 5

Date (latest data 04/01)

Pumpage (mgd)

--- monthly values --- WUP --- 12-MAV
Gentry Pacific, Ltd. Pumpage
Coronado Well (Well No. 2001-09)

EXHIBIT 5

monthly values  WUP  12-MAV

date (latest data 12/00)
Coral Creek Golf Course Withdrawals
Well 4 (2001-13)
Coral Creek Golf Course Withdrawals
Well 1 (2002-15)
Coral Creek Golf Course Withdrawals
Lake A (2002-19)

- Dotted line: pumpage (mgd)
- Solid line: 12-MAV
- Dashed line: max chloride level

Date (latest data 4/01)
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Start
Basal (high Cl) irrigation

Initial caprock Cl (average year)

Basal (low Cl) irrigation
Stop

Average Yearly pumpage (mgd)

Chloride Concentration (mg/l)

Average monthly pumpage (mgd)

Year

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

EP-24 Gentry Palm Villa 1 Kapolei Golf B

Ref: CWRM, BWS files, & R-79
June 5, 2001

MEMORANDUM FOR THE RECORD

FROM: Glenn Bauer

SUBJECT: Chloride Concentration Trends in the Ewa Caprock Aquifer

Background

Commission staff has been collecting water samples from various wells and well batteries within the caprock aquifer from Puuloa to Malakole since 1993. Our baseline sampling effort began before the demise of Oahu Sugar Company in 1994, and was augmented by the required reporting of weekly chlorides by caprock water users.

The end of sugar cultivation on the Ewa Plain brought with it an end to the importation of low to moderate salinity basal ground water for irrigation. Prior to 1994, when drip irrigation practices were employed, the estimated return irrigation component from basal ground water was 16 mgd (Mink, 1989) with 8 mgd going to the Puuloa area and 8 mgd going to the Kapolei-Malakole area. At the same time, the plantation pumped an average of 14 mgd (Bauer, 1996) from their shallow wells. After 1994, ground-water input to the caprock included natural inflow from the basal aquifer into the caprock and direct recharge from rainfall and storm runoff. Various authors report a range of natural inflow into the caprock from the basalt. Most of these numbers were derived by numerical models or by salinity mixing model equations and are small when considered on a flux/mile basis. Estimates range from <1 mgd to 3± mgd/mile (Bauer, 1996). Long-term annual average rainfall input over the Ewa Plain has been estimated to be about 5± mgd (summary of results in Bauer, 1996). In addition, long-term annual average for storm runoff recharge over the caprock from Kaloi and Makakilo Gulches was estimated to be between 1 and 2 mgd (Mink, 1989).

In 1997 the Commission adopted a 1,000 mg/l chloride cap for individual wells developing caprock water. The reasoning behind this cap was to limit pumpage in those wells approaching the limit and to prevent a sodium build-up in the clay soils which would adversely affect the growth of certain grasses for golf courses, and to protect other users adjacent to those using higher chloride water.

Chloride Trends Since 1994 East of Fort Weaver Road

The chloride concentration in the caprock water varies significantly from place-to-place, and from well to well. Some of the reasons for these disparities include the subsurface geology, distance from the coast, well construction, pump capacity, and pumping schedule.

Generally, those pumping batteries that have long-term records, are east and south of Fort Weaver Road and Iroquois Point Road respectively, show a rising trend in

EXHIBIT 7
chlorides over time. This trend is partly due to irrigation practices and partly due to the lack of recharge of fresher water into the aquifer and proximity to the shoreline.

**Ewa Beach International Golf Club**

For Ewa Beach International, chlorides have risen from a low of 1,000 mg/l in late 1996 (due to recharge from a large storm on Election night) to 1,800± mg/l at the present time. CWRM staff samples Well No. 1900-21 at a 1-acre pond (Pond E). Evaporation from the pond undoubtedly affects chloride concentration. Pumpage from this source is less than 1 mgd.

**Hawaii Prince Golf Club**

Hawaii Prince Golf Club pumps water from 6 wells. Total average pumpage is slightly greater than 1 mgd. CWRM staff typically samples the wells after they have been running for several hours. Hawaii Prince Irrigation Wells 1-5 (1901-03, 1900-17-20) and EP-22 (1900-02). Chloride concentration in Hawaii Prince Wells 1 and 2 have remained relatively stable over the period of record. Well 1 remains about 1,000 mg/l, while Well 2 changed from about 1,000 mg/l in 1994 to 1,200± mg/l at the present time. Wells east of Well 2 are much more saline. The magnitude of the increase in salinity has ranged from 300 mg/l (Well 3) to 500 mg/l (Well 5 and EP-22) over the period of record.

**U. S. Fish and Wildlife Well 2101-14**

This well is north of Iroquois Point Road. Average pumpage is less than 0.5 mgd. The chloride concentration has shown an improvement since 1996 and remains stable at 1,000± mg/l.

**Chloride Trends Since 1994 West of Fort Weaver Road**

**Gentry Wells**

CWRM staff has monitored 5 of the 9 wells developed by Gentry. These wells are low capacity and are used exclusively for irrigation of the common areas within each development. Total Gentry pumpage is less than 0.5 mgd. Since 1997, chloride concentration has remained consistently between 400 and 800 mg/l, well below the 1,000 mg/l cap. The wells monitored are Palm Villa I (2001-06), Palm Villa II (2001-08), Palm Court III (2002-12, monitoring discontinued in 1997), Sunrise (2001-04), and Sun Terra (2001-05). Pump capacities for these wells range from 100-110 gpm.

**Haseko EP-27 Well (1902-01)**

CWRM staff began monitoring this source in 1994 just after the closing of Oahu Sugar. Static (non-pumping) samples were collected from the open pit near the pump house. Chlorides ranged from 800 to 900 mg/l. In 1997, Haseko began to pump this source at rates approaching 2 mgd. The average rate is about 1 mgd.
concentration remains stable at 900± mg/l. The stable nature could be that the pumping source skims the top water from the pit.

Coral Creek Golf Course

In 1998, several large pits were excavated and noted north and south of Geiger Road just east of the Honolulu STP. These pits and drilled wells became part of the Coral Creek battery. Water from the pits is used for water features and for a back-up source (Lake Well 1, 2002-19). Coral Creek Golf Club irrigates using water from Coral Creek Well 1 (2002-15), Coral Creek Well 2 (2002-17), and Coral Creek Well 4 (2001-13). Pumpage is slightly greater than 1 mgd; however, the chloride concentration from the sources ranges between 1,000 mg/l to almost 4,000 mg/l at Well 2. According to golf course personnel, Well 4 pumps the least amount and is the most stable in terms of chloride concentration. It was also noted by golf course personnel that the longer Well 1 and 2 pumps, the saltier the water becomes. Pump capacities for these wells are high. Coral Creek 1 and 2 have 800 gpm pumps, while Coral Creek 4 has a 1,000 gpm pump.

High evaporation rate (close to 90 inches/year) in the Ewa Plain could cause the salinization of the lakes, which, in turn, could be the reason for the high chlorides localized at Well 1 and 2. However, the chloride samples taken from the Lake Well 1 show concentrations ranging from 1,000 to 1,200 mg/l. At the present time, Coral Creek's saline water does not seem to affect the Gentry sources to the east.

Chloride Trends Since 1994 in the Kapolei Region

HFDCH Kapolei Golf Course

The Kapolei Golf Course utilizes Kapolei Irrigation Wells A, B, C, D, E, and C-I (well nos. 2003-01-05, 07). Well C-1 is a replacement well for Well C. Chlorides have been remarkably stable, hovering between 200± mg/l to 600 mg/l, with little variation or trends. It is thought that basal ground-water inflow from the Waianae aquifer in conjunction with a thin caprock is responsible for the stability of the water chemistry in this area. Variations in pumpage are seasonal, but average about 1 mgd.

Kapolei City Wells

Campbell Estates' Kapolei City Wells (1905-08, 10) supply irrigation water for Kapolei. Average daily pumpage is less than 0.5 mgd. Since 1995 chloride concentrations in both wells have been rising from 600 mg/l to 1,200-1,400 mg/l at the present time. Well 1905-08 (east well) water quality is slightly better than 1905-10. Duration of pumpage prior to sample collection probably influences the chloride concentration. However, it is evident that the overall trend is upwards.

Conclusions

EXHIBIT Z
Since the cessation of sugar irrigation the common chloride trend is generally a linear increase for wells that exceed the 1,000 mg/l cap. The long-term prognosis for these wells will be a continued increase in salinity. However, there are several well batteries and wells that do not fit this trend (e.g. U.S. Fish and Wildlife, Gentry, Haseko, HFDCH Kapolei), and exhibit remarkable chloride stability. The scatter of chloride data associated with Coral Creek cannot be easily explained. Bottom hole elevations are not as great as some of the Gentry Wells, yet the chlorides are much greater and the sensitivity of chloride concentration to pumpage suggest that localized upconing, in conjunction with the high pump capacities, is taking place. Moreover, the relationship of the large lakes (surface evaporation) to the wells is not clearly understood and could play a role in contributing to the pool of high chloride ground water.

As stated above, many of the sources have not exceeded the 1,000 mg/l cap. Those that have, the baseline data suggest that these wells will never pump ≥1,000 mg/l again unless there is an influx of less saline water (e.g. reuse, an increase of recharge from storms i.e. a more normal weather pattern) or a complete cessation of pumpage. In the meantime, those operators with wells and/or batteries >1,000 mg/l chloride should apply for a variance from the 1,000 mg/l cap. It should be implicitly stipulated that once reuse is available, then these wells will only be used as back-up sources or blended with reuse water to a quality of 1,000 mg/l or less.

References:


Exhibit 7

Ewa Beach International Golf Club
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year

1,000 Cl Cap

Well 1900-21 (Pond E)
Hawaii Prince Golf Course
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year
U. S. Fish and Wildlife Well 2101-14
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

J94  J95  J96  J97  J98  J99  J00  J01  J02
0  1  2  3  4  5  6  7  8  9  10

1,000 Cl Cap

EXHIBIT 7
Gentry Wells
Pumpeage and Chlorides

Average Monthly Pumpeage (mgd)

Month/Year

1,000 Cl Cap  •  Palm Villa I  ■  Palm Villa II
▼  Palm Court  x  Sun Terra  ▲  Sunrise

Monthly Chloride (mg/l)
Haseko EP 27
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

Month/Year

1,000 Cl Cap   EP27 Pit   EP 27 Pipe
Coral Creek Golf Course
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year

1,000 Cl Cap  Lake Well 1  Well 2  Well 1  Well 4

Monthly Chloride (mg/l)

0 500 1000 1500 2000 2500 3000 3500 4000

HFDCH Kapolei Golf Course
Pumpage and Chlorides

EXHIBIT 7.
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

- Sampling Schedule

The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

- When to Sample

Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

- Sample Bottle

Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

- Labeling

On the sample bottle, affix a label that contains the following information:

- Well No.
- Date
- Time Sampled
- Elapsed Time after pump on
- Sampler's Name
- Water Temperature (if available)
- Pumping Rate (prior to sampling)
2. **Determination of Chloride Concentration**

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. **Be consistent with the end-point color change.**

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** **Be consistent with the end-point color.** Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. Reporting Results

• How to Report

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

Under "Notes" Section of the Monthly Water Use Report:

2. Method used for chloride analysis: ________________

3. Total elapsed time before sampling: ________________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
<table>
<thead>
<tr>
<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
</tr>
</thead>
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<tr>
<td>6</td>
<td>10-20</td>
<td>140</td>
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<tr>
<td></td>
<td>20-50</td>
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<td>50-100</td>
<td>85</td>
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<td></td>
<td>100-250</td>
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<td>220</td>
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<td>100-250</td>
<td>140</td>
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<td>72</td>
</tr>
<tr>
<td></td>
<td>&gt;1000</td>
<td>72</td>
</tr>
</tbody>
</table>

1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:

      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:

      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 9
MEMORANDUM FOR THE RECORD
November 1, 2000

FROM: Lenore Nakama
SUBJECT: Unregistered Injection Well at Ewa Marina Project

Chauncey Hew from DOH, UIC called to give a heads up that this letter was coming. In responding to a complaint of an illegal injection well, DOH conducted a field investigation and found that EP 27 appeared to be pumping continuously to a lined pond with an injection well. The lined pond provides storage for dust control water and the excess water is being reinjected back into the aquifer.

Per Glen, there is a lot of construction going on in the area, and Haseko may be keeping the pump operating to avoid someone having to run out and turn the pump on everytime a truck needs to refill (which may pose a danger because of all the heavy trucks operating in the area).

Per Roy, the well is being used for one of its permitted uses – dust control. Excess water is being pumped back into the aquifer for recharge. Haseko may have chosen to incur higher pumping costs for more efficient dust control during construction. We should monitor the chlorides to ensure that they remain below 1,000 ppm. We do not necessarily consider this a waste of water.
Mr. Nelson W.G. Lee
Executive Vice President
Haseko (Ewa), Inc.
820 Mililani Street, Suite 810
Honolulu, Hawai‘i 96813

Dear Mr. Lee:

SUBJECT: OPERATION OF AN UNREGISTERED INJECTION WELL
AT HASEKO EWA MARINA PROJECT

We have observed on your property what appears to be an unregistered injection well located in the center of a lined pond used to store water to fill water trucks. The injection well appears to function as an overflow drain to prevent the pond from overflowing as piped water continuously flows into the pond. The injection well casing is PVC and has a diameter of about 8 to 10 inches. The portion of the casing that was visible contained small drill-hole perforations. The top of the casing was open. The length (depth) of the casing could not be observed.

Enclosed is an Underground Injection Control (UIC) permit-application form to register the injection well with a UIC permit. The operation of an injection well must be authorized through a UIC permit issued by the Department of Health to the operator/owner (permittee) of the injection well. A UIC permit contains the term and conditions under which the permittee must comply to operate the injection well. Monitoring and reporting requirements are specifically described in the UIC permit. When the use of the injection well is finished, the permittee must apply for well abandonment, and the Department will issue specific injection well abandonment instructions.
Regulations governing an injection well are under the Hawai'i Administrative Rules (HAR), Title 11, Chapter 23, Underground Injection Control. A copy of the rule (Chapter 23) is enclosed for your reference.

Please submit a complete application and filing fee, payable to the State of Hawai'i, by November 10, 2000. Because the application involves hydraulic, geologic, and injection well design and construction subjects, we recommend that an appropriate person be used to complete and service the UIC application. A complete and accurate application expedites processing.

Please mail your materials to:

Safe Drinking Water Branch
Environmental Management Division
State Department of Health
919 Ala Moana Blvd., Room 308
Honolulu, Hawai'i 96814

If you have any questions about this subject, please call Chauncey Hew of the Safe Drinking Water Branch at 586-4258.

Sincerely,

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

CH:sa

Enclosures: 1. Existing Injection Well Application For A UIC Permit To Operate & Instructions
           2. Chapter 23
<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postage</td>
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<td>Special Delivery Fee</td>
<td></td>
</tr>
<tr>
<td>Restricted Delivery Fee</td>
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</tr>
<tr>
<td>Return Receipt Showing to Whom &amp; Date Delivered</td>
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<tr>
<td>Return Receipt Showing to Whom, Date, and Addressee's Address</td>
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</tr>
<tr>
<td>TOTAL Postage &amp; Fees</td>
<td>$3.23</td>
</tr>
</tbody>
</table>

**TOTAL Postage & Fees: $3.23**

**Postmark or Date:**

FEB 19 1999
The article is addressed and is ready for mailing.

3. To mail the article, you may use the following services:
   - Registered Mail
   - Certified Mail
   - Special Delivery
   - Express Mail
   - Priority Mail
   - International Mail

4. To request return receipt, check the applicable box on the return receipt form. Return the receipt and mail the article.

5. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, you may request RESTRICTED DELIVERY.

6. Save this receipt and present it if you make inquiry.
SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

1. Article Addressed to:
   1. Mr. Nelson W.G. Lee
   1. Haseko (Ewa), Inc.
   1. 820 Mililani St., Ste. 810
   1. Honolulu, HI  96813
   (Well #1902-01)

2. Article Number
   1. Z 066 768 201

3. Service Type
   1. X Certified
   1. □ Registered
   1. □ Insured
   1. □ COD
   1. □ Express Mail
   1. □ Return Receipt for Merchandise

4. Date of Delivery
   1. 2/22/99

5. Signature (Addressee)
   1. D Linden

6. Signature (Agent)

I also wish to receive the following services (for an extra fee):
1. □ Addressee’s Address
2. □ Restricted Delivery

Consult postmaster for fee.

Thank you for using Return Receipt Service.

DOMESTIC RETURN RECEIPT
Print your name, address and ZIP Code here

COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. Box 621
Honolulu, Hawaii 96813

Attn: Lenore
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani Street, Suite 810  
Honolulu, HI 96813

Dear Mr. Lee:

Notice of Action
Proposed Revocation/Modification of Water Use Permit (WUP No. 192)
Proposed Extension of Interim Water Use Permit (WUP No. 347)
EP 27/Haseko Well No. 1 (Well No. 1902-01)
Puuloa Ground Water Management Area, Oahu

This corrects our previous Notice of Action, dated October 27, 1998, on the staff’s proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01).

Our previous notice was correct where by a unanimous vote of the Commission at their meeting of October 22, 1998, the Commission deferred action on WUP No. 192 at the request of the Attorney General’s Office pending a legal analysis of what process is required to modify conditions of a permit that was the subject of a contested case hearing.

However, the Commission also extended WUP No. 347, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.
d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected
      uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become
   available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol (Attachment B) and the
   submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions (Attachment C).

The Commission decided that interim permittees shall be notified by letter of the
Commission action and extended permit duration and that re-issuance of new interim water use
permits for these extended permits is unnecessary.

Please be advised that the Commission directed staff to strictly enforce the weekly water
data reporting requirement and the requirement to submit a water shortage plan. (If you have not
done so already, please submit your water shortage plan, as required under Standard Condition
17.) In addition, all interim permittees will be sent the monthly bulletin which shows all pending
permit applications. Permittees are encouraged to review new applications and water data from
nearby wells to proactively protect their sources.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

EDWIN T. SAKODA
Acting Deputy Director

LN:ss
Attachments
November 13, 1998

Timothy Johns, Esq.
Deputy Director
Department of Land & Natural Resources
Kalanikou Building
1151 Punchbowl Street
Room 227
Honolulu, HI 96813

RE: Proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01)

Dear Mr. Johns:

Thank you for your October 27, 1998 letter informing us that the Commission deferred action on the subject water use permits at the October 22, 1998 Commission meeting. We appreciate the consideration given to our unique situation, given our contested case hearing and the recent final decision and order.

This is to inform you that Haseko (Ewa), Inc. is willing to voluntarily reduce its WUP No. 192 to the 0.770 mgd amount recommended by your Staff.

We understand that your Staff recommends that:

1. The 1.8 mgd permanent allocation for agricultural uses, currently existing under WUP 192, be reduced to 0.770 mgd under a new interim water use permit; and

2. The existing 1.5 mgd interim water use permit, WUP No. 347, be extended subject to the conditions listed in the Staff Submittal (Extension of Water Use Permits, Puuloa and Kapolei Ground Water Management Areas, Oahu) dated October 22, 1998.
Haseko (Ewa), Inc. has reviewed the staff submittal in connection with the final decision and order in the contested case, which refers specifically to the subject WUPs by number. Based on that review and mindful of Staff's recommendations, we believe that WUP No. 192 and WUP No. 347 should retain the same identification numbers and classifications (permanent and interim, respectively), but the allocation under WUP No. 192 may be reduced to 0.770 mgd as recommended by your Staff. Under our voluntary reduction in allocation, WUP No. 192 would remain a permanent permit but at a reduced allocation of 0.770 mgd and interim WUP No. 347 would be extended as recommended by your Staff.

Thank you for your consideration and cooperation. Please call me if there is any further action required on our part to implement the reduction for WUP No. 192.

Very truly yours,

Nelson W. G. Lee
Executive Vice President

cc: Linnel Nishioka, Esq.
Angela Fong, Esq.
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani Street, Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Notice of Action
Proposed Revocation/Modification of Water Use Permit (WUP No. 192)
Proposed Extension of Interim Water Use Permit (WUP No. 347)
EP 27/Haseko Well No. 1 (Well No. 1902-01)
Puuloa Ground Water Management Area, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on the staff's proposed revocation/modification of WUP No. 192 and extension of interim WUP No. 347 (Well No. 1902-01).

By a unanimous vote of the Commission at their meeting of October 22, 1998, the Commission deferred action on WUP Nos. 192 and 347 at the request of the Attorney General's Office pending a legal analysis of what process is required to modify conditions of a permit that was the subject of a contested case hearing.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

TIMOTHY E. JOHNS
Deputy Director

LN:ss
STAFF SUBMITTAL

for the meeting of the

COMMISSION ON WATER RESOURCE MANAGEMENT

October 22, 1998
Honolulu, Oahu

Haseko (Ewa), Inc.
REvOCATION/MODIFICATION OF WATER USE PERMIT
EP 27, Well No. 1902-01 (WUP No. 192)
Puuloa Ground Water Management Area, Oahu, TMK 9-1-12:5

LOCATION MAP: See Exhibit 1

BACKGROUND:

On December 16, 1992, the Commission approved a water use permit (WUP No. 192) for Well No. 1902-01 for Oahu Sugar Company, Ltd. (OSCO) as water user jointly with Haseko Hawaii, Inc. as source landowner for 4.160 mgd.

In the summer of 1993, OSCO announced the closure of its sugarcane operations.

On May 18, 1994, Haseko (Ewa), Inc. (Haseko) submitted a completed water use permit application to modify WUP No. 192 to allow 1.500 mgd of ground water to be used for construction and operation of a proposed 27-hole golf course and roadway landscaping for the Ewa Marina project, including interim use for dust control and maintenance irrigation for fallow fields. The remaining allocation would be retained for agricultural use.

On July 13, 1994, the Commission approved WUP No. 347 for 1.500 mgd. WUP No. 192 was modified and reduced to 2.660 mgd for agriculture use.

In a letter dated May 12, 1995, Haseko notified the Commission of the transfer of the water use permit(s) (WUP Nos. 347 and 192) for Well No. 1902-01 from OSCO, effective April 1, 1995.

On May 14, 1997, the Commission modified WUP No. 192 by reducing the permitted use for agriculture from 2.660 mgd to 1.800 mgd (Exhibit 2).
ANALYSIS/ISSUES:

Exhibit 3 shows that the pump was shut off in September, 1994 and remained inactive for about two (2) years. Haseko has since planted about 100 acres of hay as an interim land use pending the development of the Ocean Pointe project (formerly Ewa Marina). The current twelve-month moving average withdrawal for agriculture is 0.770 mgd.

Partial or total nonuse of the water allowed by the permit for a period of four continuous years or more constitutes a ground for revocation of the permit, pursuant to §174C-58(4) Hawaii Revised Statutes (HRS). In the four (4) years since the pump was completely shut off, only 0.770 mgd of the 1.800 mgd agricultural allocation has been used. As such, the Commission may revoke 1.030 mgd at this time.

The guideline for turf irrigation in the Ewa area is between 4,000 gpd/acre (Hawaii Water Systems Standards, 1985 - Domestic Consumption Guideline) and 4,700 gpd/acre (May 14, 1997 Staff Submittal - Hawaii Prince Request for Variance from Domestic Consumption Guideline). Based on these guidelines, 0.400 mgd to 0.470 mgd would appear reasonable for 100 acres of hay in the Ewa area. The staff could not confirm whether the agricultural operations have expanded, which could account for the current 0.770 mgd 12-month moving average withdrawal. However, this is for an existing agricultural use that is a temporary use pending the construction of the Ocean Pointe project. Should the Ewa Marina be excavated as proposed, Haseko concedes that the utility of the well would be lost. The staff is planning to investigate the agricultural operations for any obvious signs of wastage during their next monthly sampling run.

The terms and conditions of WUP No. 192 are shown in Exhibit 2. The staff recommends that the Commission replace the standard and special conditions of WUP No. 192 with the set of conditions that have been attached to permits for new irrigation uses in the Ewa Caprock because:

1) hydrologic conditions have changed since this permit was originally granted - Exhibit 4 shows that the 1992 approval occurred when low chloride basal water was being imported to the caprock by OSCO, which artificially enhanced the caprock aquifer. Although chlorides at some EP wells were already beginning to rise, the complete cessation of sugarcane agriculture will diminish the reliability of the aquifer and users’ ability to pump; and

2) reclaimed water will soon become available as an alternate nonpotable supply source.

This submittal fulfills the hearing requirement under §174C-58 HRS for revocation of a water use permit.

RECOMMENDATION:

That the Commission approve the issuance of an interim water use permit (WUP No. 518) to Haseko (Ewa), Inc. for the reasonable and beneficial use of 770,000 gallons per day of brackish water for agricultural use from EP 27 (Well No. 1902-01), subject to the Standard Water Use Permit Conditions listed in Attachment B and the following Special Conditions:
1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

2. 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.

3. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

4. The duration of the interim permit shall be to
   a. to July, 2001, or
   b. until treated wastewater is available, acceptable, and affordable for use, or
   c. until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

5. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

6. Require adherence to the chloride sampling protocol shown in Exhibit 5 and the submittal of weekly chloride data.

7. Require adherence to the Conservation Conditions shown in Exhibit 6.

8. In the event a water shortage is declared by the Commission, permittees shall comply with the Puuloa water shortage plan adopted by the Commission.

9. This water use permit, WUP No. 518, supersedes WUP No. 192.

Respectfully submitted,

TIMOTHY E. JOHNS
Deputy Director

Attachment(s): A  (Standard Water Use Permit Conditions)

Exhibit(s):
   1 (Location Map)
   2 (WUP No. 192)
   3 (Graph of Monthly Pumpage for Well No. 1902-01)
   4 (Chloride and Pumpage of Ewa Plantation Shallow Wells, 1930-1995)
   5 (Chloride Sampling Protocol)
   6 (Conservation Conditions)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

ATTACHMENT A
10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

 Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

ATTACHMENT A
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu

This letter transmits your modified water use permit for EP 27 (Well No. 1902-01) for use of 1.800 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission’s approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. Standard Condition 18 for interim water use permits shall not apply.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

In addition, the Commission is requiring you to conduct a pump test by June 14, 1997 to confirm that the source can sustain withdrawals at the modified permitted amount without exceeding 1,000 mg/l of chloride. The Commission has delegated the authority to approve or modify the proposed pump test procedure to the Commission staff.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

[Signature]

MICHAEL D. WILSON
Chairperson

Attachments

EXHIBIT 2
GROUND WATER USE PERMIT
WUP NO. 192

PERMITTEE
Applicant/Water User: HASEKO (EWA), INC.
Address: 820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

Landowner of Source
Address: HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

PERMITTED SOURCE INFORMATION

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<tr>
<td>Aquifer Sector</td>
<td>EW CAPROCK</td>
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<tr>
<td>Aquifer System</td>
<td>PUULOA</td>
</tr>
<tr>
<td>System Sustainable Yield</td>
<td>NA</td>
</tr>
<tr>
<td>Well Name</td>
<td>EP 27</td>
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<tr>
<td>State Well No.</td>
<td>1902-01</td>
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</tbody>
</table>

PERMITTED USE INFORMATION

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<thead>
<tr>
<th>Reasonable beneficial use</th>
<th>AGRICULTURE</th>
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</thead>
<tbody>
<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>1.800 mgd</td>
</tr>
<tr>
<td>Chloride Cap</td>
<td>1,000 mg/l</td>
</tr>
<tr>
<td>Location of water use</td>
<td>TVA 7, 86.86.88, (POTRA)</td>
</tr>
<tr>
<td>Address</td>
<td>EWA, OAHU</td>
</tr>
<tr>
<td>State land use classification</td>
<td>URBAN</td>
</tr>
<tr>
<td>County zoning classification</td>
<td>P-2, RESORT, R-5, B-2, A-1, A-2</td>
</tr>
</tbody>
</table>

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:

EXHIBIT 2
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest" (HRS§ 174C-3).

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS§ 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County land use plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission as at May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water use;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULO A Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULO A Aquifer System, or relevant modified aquifer(s), is reduced.

EXHIBIT 2
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PuuOla Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ____________________________ Date: ____________________

Printed Name: ____________________________ Firm or Title: ____________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment

EXHIBIT 2
Haseko (Ewa) Inc. Pumpage EP27
Well No. 1902-01

monthly pumpage  12-MAV  WUP allocation
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

FIGURE 7

- EP-20
- EP-21
- EP-22
- EP-23
- EP-24
- EP27,28
- EP30

Ref: CWRM, BWS Res., R-79, & Stellm (1935, 1940)
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

- Sampling Schedule

  The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

- When to Sample

  Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

- Sample Bottle

  Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

- Labeling

  On the sample bottle, affix a label that contains the following information:

  Well No.
  Date
  Time Sampled
  Elapsed Time after pump on
  Sampler's Name
  Water Temperature (if available)
  Pumping Rate (prior to sampling)

EXHIBIT 5
2. **Determination of Chloride Concentration**

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. **Be consistent with the end-point color change.**

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** **Be consistent with the end-point color.** Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. **Reporting Results**

   • **How to Report**

   The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

   1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

   Under "Notes" Section of the Monthly Water Use Report:

   2. Method used for chloride analysis:__________________

   3. Total elapsed time before sampling:__________________

   If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
### FIVE WELL VOLUMES¹ PLUS 60 MINUTES MINIMUM TIME BEFORE CHLORIDE SAMPLING

<table>
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<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
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<tr>
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</tbody>
</table>

¹ Assumes saturated well depth of 100 feet.

² Five well volumes is a standard guideline recommended by EPA.
1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.
   
   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.
   
   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 6
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAI'I 96820

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

October 22, 1998
Honolulu, Oahu

EXTENSION OF INTERIM WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

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<th>PERMITEE(S):</th>
<th>LANDOWNER(S):</th>
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<tr>
<td>(Well Nos. 1905-08, 10) The Estate of James Campbell 1001 Kamokila Blvd. Kapolei, HI 96707</td>
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<td>(Well Nos. 2003-04, 07) State of Hawaii, Housing Finance &amp; Development Corp. 7 Waterfront Plaza, Suite 300 500 Ala Moana Blvd. Honolulu, HI 96813</td>
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<td>(Well Nos. 2003-01, 02, 05) Kapolei People’s Inc. 91-701 Farrington Hwy. Kapolei, HI 96707</td>
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<td>(Well No. 2001-03) City and County of Honolulu Department of Parks and Recreation 650 South King Street Honolulu, HI 96813</td>
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<td>(Well Nos. 2001-04, 09, 10) Gentry Development Co. P.O. Box 295 Honolulu, HI 96809</td>
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LOCATION MAP: See Exhibit 1

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Walawa, Ewa-Kunia, and Makaiwa Aquifer Systems. Due to uncertainties regarding the caprock's sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock.

On April 28, 1993, the Commission awarded temporary one-year permits for new irrigation uses of ground water in the Ewa Caprock because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture. In analyzing water availability, the Commission used guidelines for sustainable yields for the Puuola, Kapolei, and Malakole areas (Yuen & Associates, Inc., 1989).

On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.
At the July 5, 1995 Commission meeting in Honokaa, Hawaii, the Commission extended the permits, which were now called interim permits, until such time that a formal decision could be made on Oahu.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a sustainable yield for the caprock.

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for individual irrigation wells at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The Commission also adopted the Puuloa, Kapolei, and Malakole Aquifer Systems in the Ewa Caprock Sector and approved pending applications for new and continued irrigation uses. The specified duration of the interim water use permits is to October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincides with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provides a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999.

ANALYSIS/ISSUES:

There has been no significant change in permitted, actual, or projected uses or water supply. Current interim water use permits and 12-month moving average withdrawals are shown in Exhibit 2. (Standard and Special Conditions of the interim permits are shown in Attachments A and B.) Exhibit 3 contains a complete listing of all permitted uses in the Puuloa and Kapolei Aquifer Systems. (Please note that the October 22, 1998 agenda includes three items that, if approved, will reduce the total permitted uses in Puuloa.)

PROTECTION OF THE RESOURCE

The current sustainable yield for the caprock aquifers is defined by a sustainable capacity at all irrigation wells in the Puuloa and Kapolei Aquifer Systems which prohibits individual pumpages that cause the specific well to exceed a 1,000 mg/l chloride cap. Enforcement of the chloride cap provides adequate protection for the aquifer.

The chloride cap is tied to anticipated wastewater reuse, which was planned to occur via a percolation trench to recharge the caprock aquifer with up to 13 million gallons per day (mgd) of treated effluent (Kumagai, 1996, Final Report. Recommendation for Water Reclamation, Nonpotable Water Plan for Oahu, Prepared for: Commission on Water Resource Management, State of Hawaii, and Department of Wastewater Management, City and County of Honolulu). However, the City now plans to deliver R-1 water directly to individual users. In either reuse application, the current sustainable yield method is and has been an effective means to protect the aquifer.

MAXIMIZING THE UTILITY OF THE RESOURCE(S)

Maximizing the utility of the caprock is intimately tied to wastewater reuse. As wastewater reuse comes on line, the sustainable yield of the caprock will increase, meaning more pumpage may be sustained under the 1,000 mg/l chloride limit. However, the distribution of reclaimed wastewater is uncertain, which will affect chloride distributions and total nonpotable supply. Although the City has not yet made reclaimed water available for nonpotable uses that will support their plans for urbanization of the Ewa area and the City-required dual water systems for new urban
developments, the City has indicated that private irrigation uses over the caprock may be served by reclaimed water by July, 2001. Of the projected total 13 mgd R-1 water from the Honolulu Wastewater Treatment Plant, 1 mgd is needed for in-plant process water, and 2 mgd is planned for industrial uses at James Campbell Industrial Park. This leaves about 10 mgd available for irrigation needs in the region.

The City is in the process of finalizing a contract with U.S. Filters for the construction, operation, and marketing for a reclamation system. Until the contract is finalized, the City will not enter into any agreements with individual users for the purchase of the R-1 water. As such, Special Condition D (Attachment B) could not be met by the users, and these users should not be penalized for this noncompliance.

Given the City’s current plans, the staff estimates that the potential future supply of nonpotable water for irrigation uses on lands overlying the Puuloa Aquifer System, where the competition for nonpotable irrigation water is most severe, could be up to about 15 mgd: 10 mgd reclaimed water plus approximately 5 mgd natural sustainable yield (Bauer, 1996). This assumes that 100% of the treated effluent will be available for reuse in Puuloa, which is improbable. But the availability of reclaimed water will present permittees with a possible alternative should their wells exceed the 1,000 mg/l chloride limit. Likewise, should the 1,000 mg/l limit not be exceeded, the permittees may continue to pump and may even work out a management plan which would allow for alternating between caprock and wastewater reuse to maximize the economical use of both resources. But ultimately, based on current reclaimed water plans, total allocations should not exceed 15 mgd.

Management of the resource via a chloride cap was adopted on May 14, 1997 as an interim management plan, subject to review in two (2) years. By May, 1999 or as total allocations begin to approach the total nonpotable supply in Puuloa, the Commission may consider establishing a regional sustainable yield, which would be something less than 15 mgd for the Puuloa area, unless additional water supply (e.g., expansion of the wastewater reclamation plant) becomes available. It is uncertain whether the chloride cap would be supplanted by a regional sustainable yield number.

WELL INTERFERENCE

Since there are no ground-water models (solute-transport) which can predict chloride response to pumpage at individual well sites, close monitoring of the resource and enforcement of the chloride cap is critical to protect the resource in this interim period while the City finalizes plans to implement a reclamation program. Exhibit 6 shows that the caprock aquifer was significantly influenced by sugarcane irrigation practices and is still in a state of flux. Currently, all interim permittees are required to submit weekly reports of pumpage, water levels, chlorides, and water temperature (unless a variance from this requirement has been approved). All permittees are put on notice that the reporting requirement will be strictly enforced.

Although enforcement of the 1,000 mg/l chloride cap at each well site will provide adequate protection for the resource, it may not be sufficient to preclude well interference. However, not only will wastewater reuse further protect the resource, it will also help to reduce the effects of well interference that may cause individual wells to exceed the 1,000 mg/l chloride cap. Special Condition e. has been added to the existing interim permits recommended for extension and will be added to all future caprock permits to put the permittees on notice of the risk of reliance on caprock ground water and its uncertain sustainable yield.

The staff proposes to send all interim permittees in Puuloa the monthly bulletin which shows all pending permit applications, which should provide the permittees sufficient notice of new proposed uses of Puuloa Caprock ground water. Permittees should review new applications and water data from other nearby wells to proactively protect their sources. Permittees are encouraged to submit comments or objections in accordance with Administrative Rule 13-171-18 (Objection to Proposed...
Water Use Permit). Further, the staff has been analyzing the weekly water data reports, and we are currently working on triggers to implement a water shortage plan. These triggers may be related to some modification of Exhibit 6. Should valid claims of well interference be raised, either by permittees or as a result of the staff's analysis, the Commission may consider implementing a water shortage plan to address the well interference issue.

However, at this time, only an informal and incomplete water shortage plan exists. On May 14, 1997, the Commission approved a permit classification system for a water shortage plan for the Puuloa Aquifer System as provided under Administrative Rule 13-171-42:

"(a) The commission shall formulate a plan for implementation during periods of water shortage. As a part of the plan, the commission shall adopt a reasonable system of permit classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.
(b) In accordance with this chapter, the commission may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.
(c) All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission."

The highest priority of nonpotable use is agriculture because the State's policy is to promote agriculture, and also because agricultural correlative uses are assured through the 1978 Constitutional Amendment. The second priority in water use is golf course irrigation because of the economic impacts that may result from inadequate water supply. The lowest priority in water use is landscape irrigation and dust control.

The priorities assigned to each permitted use and the maximum reductions indicated in the individual users' water shortage plans are shown in the last two columns of Exhibit 7. Individual water shortage plans outline smaller initial cutbacks (i.e., 10% to 30%), however under the most severe shortage situations, Exhibit 7 shows the maximum reduction in Puuloa Aquifer System pumpage would have been at least 3.718 mgd. However, this 3.718 mgd amount is subject to change following proposed revocation actions for unused agricultural allocations and formulation and adoption of a regional shortage plan.

Water shortage plans were requested from all of the users in Puuloa, with the exception of United States Fish and Wildlife Service. The requirement to submit individual water shortage plans is highlighted in the cover letter which transmits the permit and is also stated in Standard Condition 17. Not all users have submitted water shortage plans nor returned signed permits (see Exhibit 8). The staff will continue to work with these users to develop their individual plans. As part of the May 14, 1997 action, the Commission has also delegated the authority to the Chairperson to approve individual water shortage plans and the regional water shortage plan for the Puuloa Aquifer System.

RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 2, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

   a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.
b. 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.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available, acceptable and affordable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol shown in Exhibit 4 and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions shown in Exhibit 5.

h. In the event a water shortage is declared by the Commission, permittees shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

3. Refer "902-01 pending legal analysis of process required to modify the condition of a permit that was the subject of a CeH.

Respectfully submitted,

TIMOTHY E. JOHNS
Deputy Director

Attachment(s):
A (Standard Conditions for a Water Use Permit)
B (Special Interim Water Use Permit Conditions)

Exhibit(s):
1 (Location Map)
2 (Current Interim Permitted Uses, Puuloa and Kapolei Aquifer Systems)
3 (Current Permitted Uses, Puuloa and Kapolei Aquifer Systems)
4 (Chloride Sampling Protocol)
5 (Conservation Conditions)
6 (Chloride and Pumpage of Ewa Plantation Shallow Wells)
7 (Partial Water Shortage Plan)
8 (Summary of Unsigned Permits and No Water Shortage Plan)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

ATTACHMENT A
Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission’s periodic review of the Pualoa or Kapolei Aquifer System’s sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Pualoa or Kapolei Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS §174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee’s water use.

16. The permittee understands that under HRS §174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS §174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR §13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Pualoa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR §13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS §174C or HAR §13-171 may result in the suspension or revocation of this permit.

ATTACHMENT A
SPECIAL INTERIM WATER USE PERMIT CONDITIONS

a. The duration of the interim permits shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use or water supply occurs.

b. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data.

c. Require adherence to the Conservation Conditions shown in Exhibit 12.

d. Require the following PCUG members to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy reclaimed water by July 1, 1999 for the cumulative amounts specified in Exhibit 7 (Pro-Rata Share):

1) Gentry Investment Co. - Commitment to use a total of 0.430 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well No. 2002-15 and Well No. 2001-10.

2) Haseko (Ewa), Inc. - Commitment to use a total of 0.40 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well No. 1902-01.

3) Hawaii Prince Golf Club - Commitment to use a total of 0.40 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well Nos. 1900-02, 17 to 20 & 1901-03.

4) Ewa Beach International Golf Club - Commitment to use a total of 0.27 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well Nos. 1900-21, 22 & 1959-08.

ATTACHMENT B
Current Active Water Use Permits (Excluding salt water use permits) (f://wup-wma.rpt) October 5, 1998

ISLAND OF OAHU
WMA Aquifer System: KAPOLEI
Sustainable Yield = mgd

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7 Permits Totalling
Available SY 1.796 1.050

EXHIBIT 2

(t://work/database/reports/wup-wma.rpt)
**Current Active Water Use Permits** *(Excluding salt water use per WMA Aquifer)*

**ISLAND OF OAHU**

WMA Aquifer System: **PUULOA**

**Sustainable Yield = mgd**

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21 Permits Totaling 4.826

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**EXHIBIT 2**

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<td>HONOLULU KOaida, INC.</td>
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<td>PUULOA DUG WELLBB</td>
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<td>PACIFIC TSUNAMI</td>
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<td>HAWAII PRINCE GOLF CLUB</td>
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<td>WELL 1</td>
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<td>160</td>
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<td>1959-08</td>
<td>PUULOA DUG WELLAA</td>
<td></td>
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**EXHIBIT 3**

(\f\work\database\reports\wup-wma.rpt)
### Current Active Water Use Permits

*Excluding salt water use permits.*

<table>
<thead>
<tr>
<th>Well No</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1904-02</td>
<td>MAKAKILO GC</td>
<td>1.150</td>
</tr>
<tr>
<td>1904-03</td>
<td>MAKAKILO GC STBYDB</td>
<td></td>
</tr>
<tr>
<td>1905-08</td>
<td>KAPOLEI IRR 1</td>
<td>0.302</td>
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<tr>
<td>1905-10</td>
<td>KAPOLEI IRR 2</td>
<td></td>
</tr>
<tr>
<td>2003-01</td>
<td>KAPOLEI G COURSE A</td>
<td>1.000</td>
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<td>KAPOLEI G COURSE A</td>
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</tr>
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<td>2003-04</td>
<td>KAPOLEI IRR D</td>
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<td>2003-05</td>
<td>KAPOLEI G COURSE A</td>
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</tr>
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<td>2003-07</td>
<td>KAPOLEI IRR C-1</td>
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</tbody>
</table>

**Sustainable Yield = 2.946 mgd**

**9 Permits Totaling Available SY**

*Exhibit 3*
1. **Sample Collection**

- **Sampling Schedule**

  The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

- **When to Sample**

  Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

- **Sample Bottle**

  Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

- **Labeling**

  On the sample bottle, affix a label that contains the following information:

  - Well No.
  - Date
  - Time Sampled
  - Elapsed Time after pump on
  - Sampler's Name
  - Water Temperature (if available)
  - Pumping Rate (prior to sampling)
2. **Determination of Chloride Concentration**

- **Private Laboratories**

If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. Be consistent with the end-point color change.

For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

*Note*: Be consistent with the end-point color. Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. **Reporting Results**

• **How to Report**

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

Under "Notes" Section of the Monthly Water Use Report:

2. Method used for chloride analysis:__________________

3. Total elapsed time before sampling:_______________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
<table>
<thead>
<tr>
<th>Casing Diameter (in.)</th>
<th>Pump Capacity (gpm)</th>
<th>Minimum Time (min.)</th>
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<tr>
<td>6</td>
<td>10-20</td>
<td>140</td>
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<td></td>
<td>20-50</td>
<td>110</td>
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<td>8</td>
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<td>700-1000</td>
<td>68</td>
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<tr>
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<td>&gt;1000</td>
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<td>700-1000</td>
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<td>&gt;1000</td>
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<tr>
<td></td>
<td>&gt;1000</td>
<td>72</td>
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</tbody>
</table>

1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   
a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 5
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Start 1937

Basal (high Cl) irrigation

Basal (low Cl) irrigation

Pumps 15, 16

Total imported basal water from Koolau ranged < 50-70 mgd

Average monthly pumpage (mgd)

Est. average yearly pumpage (12)

Stop 1994

Average monthly pumpage (mgd)

FIGURE 7


Ref: CWRtd, BWS Bus, R-79, & Stearns (1939, 1940)
<table>
<thead>
<tr>
<th>User</th>
<th>Well Name/No.</th>
<th>Use</th>
<th>Current Allocation</th>
<th>Recommended Allocation</th>
<th>Basis</th>
<th>Water Shortage Plan</th>
<th>Priority¹</th>
<th>Reduction²</th>
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<tr>
<td>Pre-1978 Permanent Permits</td>
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<tr>
<td>Campbell</td>
<td>EP 21/2000-01</td>
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<td>2.080</td>
<td>2.080</td>
<td>Existing Use</td>
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<td>1.040</td>
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<td>EP 23/2001-01</td>
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<tr>
<td>Hawaii Prince</td>
<td>EP 22,Wells 1 to 5/1900-02,17 to 20,1901-03</td>
<td>G.Course</td>
<td>0.900</td>
<td>0.900</td>
<td>Actual Use</td>
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<td>0.450</td>
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<td>Sogo Hawaii (EBIGC)</td>
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<td>Dug Wells A&amp;B/1900-22,1959-06</td>
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<td>Actual Use</td>
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<td>Ewa Gentry/2001-02</td>
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<td>Interim Permits (5-yr)</td>
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<tr>
<td>Expired Interim Permits (1-yr)</td>
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<tr>
<td>Gentry</td>
<td>Sunrise Apt/2001-04</td>
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<td>Landscape</td>
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<td>Actual Use</td>
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<td>Landscape</td>
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</table>

¹ 1 = Highest priority (Ag)  
² 2 = Intermediate priority (G. Course)  
³ 3 = Lowest priority (Landscape Irr. dust control)  

Maximum reduction indicated in water shortage plan
<table>
<thead>
<tr>
<th>Well No</th>
<th>Applicant</th>
<th>Well Name</th>
<th>Signed</th>
<th>WUP (mgd)</th>
<th>Shortage Plan</th>
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## Current Active Water Use Permits

(Excluding salt water use permits)

**ISLAND OF OAHU**

WMA Aquifer System: **KAPOLEI**

**Sustainable Yield =** mgd

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<th>Well Name</th>
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9 Permits Totalling 2.946 Available SY

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**EXHIBIT 8**
MEMORANDUM

TO: Tim Johns, Deputy Director, CWRM
FROM: Linnel T. Nishioka, Deputy Attorney General
RE: Haseko Water Use Permits, Items 9 and 12.

I am requesting that the Commission defer any action on Haseko WUP 192 (item 9) and WUP 347 (item 12). Both permits were referenced in the final decision and order of the Commission in the Ewa Marina case. Currently our office is analyzing the legal issue of what process is required to modify any conditions of that permit that were the subject of the contested case hearing. We are undertaking a careful analysis of the issue since any advice given on this case would probably impact the other pending decisions, including Waiahole, Laie, and Waiola. In the meantime, we request that the Commission not take any action on these permits until our analysis is completed. We anticipate an answer prior to the next commission meeting in November, 1998. Thank you for your patience in this matter, it is greatly appreciated. Please contact me at 587-2990 should you have any questions or wish to discuss any matter further.
MEMORANDUM

TO: Tim Johns, Deputy Director, CWRM

FROM: Linnel T. Nishioka, Deputy Attorney General

RE: Haseko Water Use Permits, Items 9 and 12.

I am requesting that the Commission defer any action on Haseko WUP 192 (item 9) and WUP 347 (item 12). Both permits were referenced in the final decision and order of the Commission in the Ewa Marina case. Currently our office is analyzing the legal issue of what process is required to modify any conditions of that permit that were the subject of the contested case hearing. We are undertaking a careful analysis of the issue since any advice given on this case would probably impact the other pending decisions, including Waiahole, Laie, and Waiola. In the meantime, we request that the Commission not take any action on these permits until our analysis is completed. We anticipate an answer prior to the next commission meeting in November, 1998. Thank you for your patience in this matter, it is greatly appreciated. Please contact me at 587-2990 should you have any questions or wish to discuss any matter further.
April 28, 1998

Mr. Edwin Sakoda, Acting Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Edwin Sakoda:

Subject: Reuse Agreements Between the City and County of Honolulu and Gentry, Ltd.; Haseko, Inc./Coral Creek Golf Course; and Hawaii Prince Golf Course

This is to inform you that the City and County of Honolulu has issued an award to U.S. Filter Corporation (USF) for a contract to design, build, and operate a 13 mgd wastewater reclamation facility for beneficial reuse of the secondary effluent from the Honolulu Wastewater Treatment Plant.

The project will be implemented in two phases. Phase 1 will treat 8 mgd of secondary effluent to R-1 quality standards: 2 mgd will undergo further treatment for use as industrial service water for Campbell Industrial Park; 2 mgd is for Honolulu in-plant uses; 2 mgd is for irrigation of City owned golf courses West Loch and Ewa Villages and 2 mgd is available for customers between the Honolulu plant and the City of Kapolei. In Phase 2 of the project USF will expand the capacity of the plant to 13 mgd by July 1, 2001. The remaining 5 mgd will be available to non potable users in the Ewa Plain for landscape and golf course irrigation.

We are aware that our reclamation facility is an integral factor in managing the Ewa Caprock and are pleased to be part of this effort. We have continued to meet with Gentry, Haseko, Hawaii Prince Golf Course, Coral Creek Golf Course and New Ewa Beach Golf Course and keep them informed of the City's progress for the R-1 facility. The City, however, will not be able to enter into formal agreements regarding the purchase of reclaimed water in accordance with the timetable established for these permit users in their interim permits.

We suggest that the date to enter into agreements to purchase the reclaimed water be extended to October 31, 1999, or soon thereafter. As Phase 2 of the reclamation facility is developed, we will have a more definite time frame for the availability and cost of the
Mr. Edwin Sakoda  
April 28, 1998  
Page Two  

reclaimed water. The City will then be able to obtain commitments from customers to buy reclaimed water. We do look forward to coordinating the City's efforts with the Water Commission to make this water available for those now using groundwater from the Ewa Caprock.

If there are any questions, please do not hesitate to contact me at 527-6663.

Sincerely,

KENNETH E. SPRAGUE  
Director

cc:  Gentry Homes, Ltd.; Attn.: Jeffrey C. Dinsmore  
560 N. Nimitz Highway, Suite 213  
Honolulu, Hawaii 96817

Hawaii Prince Golf Club; Attn.: Garrick Iwamuro  
91-1200 Fort Weaver Road  
Ewa Beach, Hawaii 96706

Haseko, Inc.; Attn.: Nelson Lee  
820 Mililani Street, Suite 820  
Honolulu, Hawaii 96813-2938
Neal, we don't want weekly reports, do we?
Not really, but can... ask for it. Is this really necessary?

Anyway, I'm beginning to wonder if something temporary is necessary like dust control constitutes a "change" in use. Even a farm may need to do dust control even more regularly than a construction site. 0.315 mgd was approved for dust control.
March 3, 1998

MEMORANDUM FOR THE RECORD

FROM:       Glenn Bauer

SUBJECT:    Weekly Reporting of Chlorides by Haseko for EP-27

Haseko has submitted weekly pumpage, water level, and chloride data from their EP-27 source (well no. 1902-01). The question as to whether they should continue to report weekly or switch to monthly reporting has been asked. My feeling is that weekly reporting is valuable in this case because of the possibility that their water use permit for a marina will be granted. If, indeed it is, then weekly data will be collected from a proposed series of monitor holes surrounding the marina. These monitoring holes will be a part of the Corps of Engineers and CWRM permit requirements. Weekly reporting of EP-27 will provide us more baseline data to use in the monitoring of the Puuloa caprock aquifer.

Table 1 is a summary of the data that they have provided us and including the average weekly ocean level measured at Tom Nance’s tide gage established at Barbers Point Deep Draft Harbor for the expansion project. Also attached is a graph of the chloride, water level, ocean level, and pumpage data presented in Table 1.

Table 1

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<th>Week No.</th>
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<th>Chloride (mg/l)</th>
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<th>Av. Ocean Level (ft. msl)</th>
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Table 1 and the graphical representation of the data are important in that chloride trends are clearly shown. The data also show that water quality improved from 994 mg/l to 888 mg/l over the first six weeks of use. From week no. 7 on, the chloride concentration seems to be directly
related pumpage. Average weekly water levels at EP-27 generally mimics the ocean tide measured at Barbers Point Harbor.

In summary, weekly water level, chloride, and pumpage data collected from EP-27 provide good baseline data prior to any construction of a marina. The data also show changes within the caprock aquifer that cannot be picked up by monthly sampling.
Weekly Chloride, Head, Pumpage, & Ocean Level @ EP-27 (Well No. 1902-01)

Chloride Concentration (mg/l)

Week No. from 11/27/97-1/28/98

- Chloride
- Average Water Level
- Average Pumpage
- Average Ocean Level

Water Level & Pumpage (ft, msl & mgd)
Michael Wilson, Chairman,  
and Members of the Commission on Water Resource Management  
1151 Punchbowl Street, Room 227  
Honolulu, Hawaii 96813  

Re: Ocean Pointe: WUP No. 192 and WUP No. 347  

Dear Chair Wilson and Commissioners:  

On May 14, 1997, the Commission on Water Resource Management (Commission) granted Water Use Permit No. 347 which authorizes HASEKO (Ewa), Inc. to withdraw 1.5 mgd of nonpotable water from the Ewa Caprock Aquifer for golf course and landscape irrigation and construction dust control. At the same time, an existing water use permit (WUP No. 192) was modified to authorize withdrawal of 1.8 mgd from the Ewa Caprock for agricultural uses. 

The purpose of this letter is severalfold: (1) To provide an update on the status of the project. (2) To correct errors in monthly usage reports that had been submitted for the months of November and December, 1997, and for January, 1998. (3) To provide a status report on the use of reclaimed wastewater as an alternative nonpotable water resource. (4) To report a transfer of land from HASEKO (Ewa), Inc. to HASEKO Homes, Inc.

**Project Status.** Ocean Pointe was formerly known as the Ewa Marina Community Development. Since the above-referenced water use permits were issued last May, there has been significant visible progress on the project. Following a groundbreaking ceremony in October, 1997, construction commenced in November on the first residential “cluster” component.

As we had reported in an October 24, 1997 letter to the Commission’s Deputy Director, the elevation of the Cluster site must be raised, approximately 10 feet in some areas, in accordance with mass grading plans approved by the City Department of Public Works. The approximately 1.2 million cubic yards of fill material needed for this purpose is being excavated from the marina footprint.
Thus, while the Cluster development is limited to 92.66 acres on the northeastern section of the property, construction activity is occurring over a much larger area.

Because there is yet no decision on HASEKO’s water use permit application for the marina, excavation for fill material has been confined to elevations above the water table. This limitation on depth of excavation has meant a greater expanse of excavated area. In turn, this has resulted in higher water requirements for dust control. Water for dust control is used on approximately 90 acres of the Cluster development site, approximately 40 acres of the excavation site, and another approximately 40 acres of roadways to and from the construction sites.

The dry windy weather has made constant watering a necessity. To date, HASEKO has not received any complaints from its neighbors about fugitive dust.

In applying for WUP No. 347, we had provided the Commission with a schedule of the project’s nonpotable water needs for the period October 1997 to July 1998. Attached as Exhibit A is an updated schedule. The significant changes are: 1) Construction activity began a month later than originally anticipated, thus, most of the remainder of the schedule is set back by one month. 2) As noted above, water requirements for dust control have been higher than originally anticipated. 3) At this point it does not appear that HASEKO will obtain the necessary permits to begin golf course construction prior to July 1998.

**Water Usage Reports.** Using water for dust control began with the onset of construction in November, 1997. Our water usage reports, however, continued to report all water usage from EP-27 as being for agricultural purposes. This is erroneous, and we have enclosed corrected reports for the months of November and December, 1997 and for January, 1998.

Please note that the amounts reported for agricultural and urban uses are estimates. The uses are not separately metered; thus we are unable to report on the precise amounts withdrawn for each type of use. Given the vast acreages that are involved and the fact that the locations of use for both agricultural and construction activities shift from time to time, it is impractical to install separate meters. In fact, both agricultural and construction uses currently utilize the same transmission lines and spigots.

We have estimated water usage for construction activity by calculations based on pipe size and hours of use for areas watered directly off EP-27 transmission lines and by the average number of water truck trips per week. The remainder is assumed to be agricultural use. The amount attributed to agricultural use coincides with amounts being pumped from EP-27 prior to
the commencement of construction, taking into account the increase in agricultural acreage that is being irrigated.

We apologize for not having done these calculations for the water usage reports for the past three months. We have instructed our consultant, Gary Howard, who submits these reports to the Commission, to hereafter provide separate estimates for each of the permits.

Reclaimed Water. A special condition to WUP No. 347 requires HASEKO “to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).”

Long before this special condition was imposed HASEKO had been working with the City and others for the development and use of reclaimed effluent from the Honouliuli Wastewater Treatment Plant. Last year, HASEKO successfully supported an amendment to the Ewa Development Plan public facilities map to include a pipeline for reclaimed water extending from the wastewater treatment plant to the Ocean Pointe property.

Since the condition was imposed, HASEKO has continued to meet with DWM, both as part of a larger group and individually. To date, however, DWM has not been ready to enter into any agreements with private users of reclaimed water. Complicating matters even further, we understand that very recently DWM has contracted with US Filters to operate the reclamation facility and to be the purveyor of the reclaimed water. Our brief discussion with US Filters personnel in late January indicated that US Filters is still finalizing their contract with the DWM. We will be in contact with US Filters to begin negotiations for the use of reclaimed water when US Filters' contract with DWM is finalized.

Although HASEKO will continue to use its best efforts to fulfill the special condition, in light of the current circumstances, it appears unlikely that a signed agreement with DWM, or its assigned purveyor, can be consummated by May of this year. We will continue to keep you apprised of our progress in this area.

Property Transfer. HASEKO (Ewa), Inc. is a wholly owned subsidiary of HASEKO (Hawaii), Inc. To develop the Cluster residential component of the Ocean Pointe project, HASEKO (Hawaii), Inc. created another wholly owned subsidiary, HASEKO Homes, Inc. HASEKO (Ewa), Inc. transferred to HASEKO Homes, Inc. less than 100 acres of the Ocean Pointe property for this first increment of residential development. The remainder of the 1100 acres of the Ocean Pointe property is retained by HASEKO (Ewa), Inc.
The property transfer did not include a transfer of the water use permit. Instead, HASEKO (Ewa), Inc. has agreed to provide water to HASEKO Homes, Inc. We understand that under these circumstances the provisions of HRS §174C-59 are not applicable.

Please feel free to call Raymond Kanna or me if you have any questions or comments.

Very truly yours,

Nelson W.G. Lee
Executive Vice President

cc: Lenore Nakama
    Oshima Chun Fong & Chung
**REVISED 2/98**

**EWA MARINA COMMUNITY DEVELOPMENT**

**NONPOTABLE WATER NEEDS FOR URBAN USES**

**TO JULY 1998**

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Cumulative Water Need</th>
</tr>
</thead>
</table>
| November 1997 | Begin on-site excavation for fill material  
                                  | Begin on-site grading for residential project | 500,000 gpd |
| December 1997 | Continue on-site excavation for fill material  
                                  | Continue on-site grading for residential project  
                                  | Begin subdivision and infrastructure development | 500,000 gpd |
| January 1998  | Continue on-site excavation for fill material  
                                  | Continue on-site grading for residential project  
                                  | Continue subdivision and infrastructure development | 500,000 gpd |
| February 1998 | Continue on-site excavation for fill material  
                                  | Continue on-site grading for residential project  
                                  | Continue subdivision and infrastructure development, including landscaping roadways  
                                  | Begin model unit construction | 500,000 gpd |
| March 1998   | Continue on-site excavation for fill material  
                                  | Continue on-site grading for residential project  
                                  | Continue subdivision and infrastructure development, including landscaping roadways  
                                  | Continue model unit construction | 500,000 gpd |
| April 1998 | Continue subdivision and infrastructure development, including landscaping roadways  
                                  | Begin housing construction | 500,000 gpd |
| May 1998     | Maintain landscaping  
<pre><code>                              | Continue housing construction | 600,000 gpd |
</code></pre>
<table>
<thead>
<tr>
<th>Month</th>
<th>Maintenance Activities</th>
<th>Capacity (gpd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1998</td>
<td>Maintain landscaping</td>
<td>600,000</td>
</tr>
<tr>
<td></td>
<td>Continue housing construction</td>
<td></td>
</tr>
<tr>
<td>July 1998</td>
<td>Maintain landscaping</td>
<td>600,000</td>
</tr>
<tr>
<td></td>
<td>Continue housing construction</td>
<td></td>
</tr>
</tbody>
</table>
MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Milliani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of November, 1997 Week 1

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yyyy)</th>
<th>Period End Date (mm/dd/yyyy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DHW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27 (agriculture use)</td>
<td>10/27/97</td>
<td>11/2/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>994</td>
<td>75.4</td>
<td>2.90'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27 (urban use)</td>
<td>10/27/97</td>
<td>11/2/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>994</td>
<td>75.4</td>
<td>2.90'</td>
</tr>
</tbody>
</table>

** Flow meter; electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running just prior to a pumping cycle;
  If measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

** Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by (Print) Gary D. Howard
Signed __________________________________________
Title Consultant
Date 2/17/97

Form mgwurf.frm (10/96)
<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yyyy)</th>
<th>Period End Date (mm/dd/yyyy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (ft TVM)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/3/97</td>
<td>11/9/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>942</td>
<td>75.9</td>
<td>3.12'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/3/97</td>
<td>11/9/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>942</td>
<td>75.9</td>
<td>3.12'</td>
</tr>
</tbody>
</table>

** Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc...):

** Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by (print) Gary D. Howard
Title Consultant
Signature
Date 2/17/97

Form mgwurf.frm (10/96)
## MONTHLY GROUND WATER USE REPORT

**Haseko (Ewa) Inc.**  
820 Mililani St., Ste. 820  
Honolulu, HI 96813

**REVISED**

Month of **November, 1997 Week 3**

### INSTRUCTIONS:
Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (OTW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27 (agriculture use)</td>
<td>11/10/97</td>
<td>11/16/97</td>
<td>1,500,000</td>
<td>Flowmeter</td>
<td>928</td>
<td>74.8</td>
<td>2.94'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27 (urban use)</td>
<td>11/10/97</td>
<td>11/16/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>928</td>
<td>74.8</td>
<td>2.94'</td>
</tr>
</tbody>
</table>

**Note:**  
- Flow meter, electrical consumption, weir of flume, not metered (estimated).  
- Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

- Attitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by (print): **Gary D. Howard**  
Title: **Consultant**  
Date: **2/17/97**

Form: mgwurdfm (10/96)
### MONTHLY GROUND WATER USE REPORT

**Haseko (Ewa) Inc.**
820 Millili St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of November, 1997 Week 4

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DTW)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>11/17/97</td>
<td>11/23/97</td>
<td>650,000</td>
<td>Flowmeter</td>
<td>917</td>
<td>74.3</td>
<td>3.13'</td>
</tr>
</tbody>
</table>

** Note:
- Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running just prior to a pumping cycle.
- If measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

** Attitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by (print): Gary D. Howard  
Title: Consultant  
Signature: [Signature]  
Date: 2/17/97  

Form mgwufm (10/96)
MONTHLY GROUNDWATER USE REPORT

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of November, 1997 Week 5

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yyyy)</th>
<th>Period End Date (mm/dd/yyyy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (GWL)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27 (agriculture use)</td>
<td>11/24/97</td>
<td>11/30/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>933</td>
<td>73.8</td>
<td>2.92'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27 (urban use)</td>
<td>11/24/97</td>
<td>11/30/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>933</td>
<td>73.8</td>
<td>2.92'</td>
</tr>
</tbody>
</table>

** Flow meter, electrical consumption, weir of flume, not metered (estimated).
** Measurement should be taken while pump is NOT running just prior to a pumping cycle;
If measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc...):

** Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by (print) Gary D. Howard
Signature
Title Consultant
Date 2/15/97
**STATE OF HAWAII**
**COMMISSION ON WATER RESOURCE MANAGEMENT**
**DEPARTMENT OF LAND AND NATURAL RESOURCES**

**MONTHLY GROUND WATER USE REPORT**

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of December, 1997 Week 1

---

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 621, Honolulu HI 96809. For assistance, please call (808) 587-0264.

---

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DWT)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/1/97</td>
<td>12/7/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>888</td>
<td>75.9</td>
<td>3.05'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/1/97</td>
<td>12/7/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>888</td>
<td>75.9</td>
<td>3.05'</td>
</tr>
</tbody>
</table>

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**Flow meter, electrical consumption, weir of flume, not metered (estimated).**

**Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.**

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

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Submitted by (print) Gary D. Howard

Title Consultant

Signature

Date 2/17/98

Form mgwurf.frm (10/96)
**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96808. For assistance, please call (808) 587-0264.

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<tr>
<th>State Well No.</th>
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<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DTW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/8/97</td>
<td>12/14/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>864</td>
<td>73.0</td>
<td>3.03'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/8/97</td>
<td>12/14/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>864</td>
<td>73.0</td>
<td>3.03'</td>
</tr>
</tbody>
</table>

---

- Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running last prior to a pumping cycle;
  if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc...):

** Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.

Submitted by (print): Gary D. Howard
Title: Consultant
Signature: [Signature]
Date: 2/17/98
**STATE OF HAWAII**

**COMMISSION ON WATER RESOURCE MANAGEMENT**

**DEPARTMENT OF LAND AND NATURAL RESOURCES**

**MONTHLY GROUND WATER USE REPORT**

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of December, 1997 Week 3

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (GWH)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/15/97</td>
<td>12/21/97</td>
<td>8,500,000</td>
<td>Flowmeter</td>
<td>877</td>
<td>75.6</td>
<td>3.12'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/15/97</td>
<td>12/21/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>877</td>
<td>75.6</td>
<td>3.12'</td>
</tr>
</tbody>
</table>

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**Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc.):**

**Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print) **Gary D. Howard**

Title **Consultant**

Signature

Date 2/17/98

Form mgwufm.ffd (10/96)
# MONTHLY GROUND WATER USE REPORT

**Haseko (Ewa) Inc.**
820 Mililani St., Ste. 820
Honolulu, HI 96813

**REvised**

Month of December, 1997 Week 4

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<table>
<thead>
<tr>
<th>State/Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (FT)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/22/97</td>
<td>12/28/97</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>836</td>
<td>75.4</td>
<td>3.10'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(agriculture use)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/22/97</td>
<td>12/28/97</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>836</td>
<td>75.4</td>
<td>3.10'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(urban use)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**- Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running just prior to a pumping cycle.
- If measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

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Submitted by (print) Gary D. Howard

Title Consultant

Signature

Date 2/17/98

Form mgwurf.frm (10/96)
MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Millilani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of **January, 1998, Week 1**

<table>
<thead>
<tr>
<th>State/Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (DTH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/29/97</td>
<td>1/4/98</td>
<td>8,500,000</td>
<td>Flowmeter</td>
<td>853</td>
<td>75.9</td>
<td>3.07'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>12/29/97</td>
<td>1/4/98</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>853</td>
<td>75.9</td>
<td>3.07'</td>
</tr>
</tbody>
</table>

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu, HI 96809. For assistance, please call (808) 587-9264.

**Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print) Gary D. Howard  
Title Consultant  
Signature   
Date 2/17/98  
Form mgwurfrm (10/96)
### Monthly Ground Water Use Report

**Haseko (Ewa) Inc.**  
820 Mililani St., Ste. 820  
Honolulu, HI 96813

**REVISED**  
Month of **January, 1998 Week 2**

**Instructions:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu, HI 96809. For assistance, please call (808) 587-0284.

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (OTW)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/5/98</td>
<td>1/11/98</td>
<td>6,500,000</td>
<td>Flowmeter</td>
<td>850</td>
<td>75.6</td>
<td>3.24'</td>
</tr>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/5/98</td>
<td>1/11/98</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>850</td>
<td>75.6</td>
<td>3.24'</td>
</tr>
</tbody>
</table>

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**Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc...):**

- Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running just prior to a pumping cycle.
- If measurement is taken while pump is running, please indicate so.

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**Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

---

Submitted by (print) **Gary D. Howard**  
Title **Consultant**  
Signature **[Signature]**  
Date **2/17/98**
## MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Millilani St., Ste. 820
Honolulu, HI 96813

**REVISED**

Month of **January, 1998, Week 3**

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<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Non-Pumping Water Level (FTW)?</th>
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</thead>
<tbody>
<tr>
<td>1902-01</td>
<td>EP-27</td>
<td>1/12/98</td>
<td>1/18/98</td>
<td>8,500,000</td>
<td>Flowmeter</td>
<td>855</td>
<td>75.2</td>
<td>3.24'</td>
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<tr>
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<td>EP-27</td>
<td>1/12/98</td>
<td>1/18/98</td>
<td>3,500,000</td>
<td>Flowmeter</td>
<td>855</td>
<td>75.2</td>
<td>3.24'</td>
</tr>
</tbody>
</table>

**• All water levels are measured at the depth to water below the measuring point.**

**• Flow meter, electrical consumption, weir of flume, not metered (estimated).**

**• Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.**

Other comments or additional information (e.g., date and method of chloride measurement; how pumpage amounts are estimated; etc...):

**• Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print) **Gary D. Howard**

**Title** Consultant

Signature [Signature]

Date **2/17/98**

Form mgwurf.frm (10/96)
MONTHLY GROUND WATER USE REPORT

Haseko (Ewa) Inc.
820 Mililani St., Ste. 820
Honolulu, HI 96813

REVISED

Month of January, 1998 Week 4

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0264.

<table>
<thead>
<tr>
<th>State Well No</th>
<th>Well Name</th>
<th>Period Begin Date (mm/dd/yy)</th>
<th>Period End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Mid-Point Pumping Water Level (ftTW)</th>
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<td>1/19/98</td>
<td>1/25/98</td>
<td>8,500,000</td>
<td>Flowmeter</td>
<td>866</td>
<td>76.8</td>
<td>3.30'</td>
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<td>3,500,000</td>
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</tr>
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**Flow meter, electrical consumption, weir of flume, not metered (estimated).**
**Measurement should be taken while pump is NOT running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.**

Other comments or additional information (e.g. date and method of chloride measurement; how pumpage amounts are estimated; etc...):

**Altitude of measuring point has not been determined yet. Water level is measured at depth to water below measuring point.**

Submitted by (print): Gary D. Howard
Title: Consultant
Signature: [Signature]
Date: 2/17/98

Form mgwurf.frm (10/96)
October 24, 1997

Ms. Rae Loui  
Deputy Director  
Commission on Water Resource Management  
Kalaninoku Building  
1151 Punchbowl Street  
Honolulu, Hawaii 96813

RE: Ewa Marina Community Development: Cut and Fill Activity

Dear Ms. Loui:

Components of the Ewa Marina Community project other than the marina have progressed to a point where physical construction activity at the site will commence before the end of this year. Because the on-site activity will be significant, we would like to apprise you of the current status of the Ewa Marina Community Development project and the construction activities that will be taking place over the next several months.

Initial Residential Phase

Construction of the Ewa Marina Community Development will commence with a residential "cluster" component located on 92.66 acres on the northeastern section of the Ewa Marina property. The attached Exhibit A depicts the location of the Cluster project identified as Area 1.

Initially, the elevation of the Cluster site must be raised, approximately 10 feet in some areas, in accordance with mass grading plans approved by the City Department of Public Works. Approximately 1.2 million cubic yards (CY) of fill material is needed for this purpose.
Cut and Fill

To obtain the fill material needed to raise the elevation of the Cluster site, approximately 1.5 million CY of material will be excavated from other areas within the Ewa Marina site. As noted in the Environmental Impact Statement for the project, prepared in April 1992 by Wilson Okamoto & Associates, Inc. (EIS), obtaining fill material onsite will minimize construction traffic and, thereby, vehicle exhaust and emissions.

Initially, fill material will be obtained from grading portions of the marina footprint. The "borrow" locations designated on Exhibit A are the locations to be graded and from which fill material will be obtained. Assuming the marina is eventually constructed, this area will ultimately be excavated. Even if the marina is not constructed\(^1\), a portion of the area will have to be graded and the elevation lowered to accommodate regional drainage needs.

Excavations may be as deep as 9 feet. Inasmuch as the current elevation of the marina footprint averages approximately +12.0 feet, elevations may be lowered to +3.0 feet. All of the excavation, however, will be confined to elevations above the water table.

The portions of the marina footprint that will be graded in this initial phase all lie more than 60 feet inland of the shoreline. No construction activity will take place at the shoreline or seaward of the shoreline.

Grading and excavating fill material will be timed to coincide with filling, grading, and construction of the Cluster project to minimize stockpiling of fill material, and, thereby, minimize fugitive dust impacts of construction. (See EIS, Page VI-2).

Water Use

Upon commencement of the cut and fill activity, nonpotable caprock water will be used for dust control and other construction purposes in accordance with the interim water use permit granted by the Water Commission earlier this year.

\(^1\) As the water use permit application for the construction of the marina is still pending before the Commission on Water Resource Management, it is still unknown whether or not the marina will be constructed. HASEKO, therefore, has developed alternative (with and without marina scenarios) infrastructure plans in order to keep the development processing active.
In hearings before the Water Commission on the allocation of caprock water for Ewa Marina's urban irrigation needs, HASEKO had represented that construction on the initial residential phase would begin in October, 1997. Construction is now scheduled to begin in November.

Pursuant to conditions attached to the interim water use permit, HASEKO will submit to the Commission the required pumping and chloride data. Additionally, we will continue to keep the Commission apprised of the Project's significant activities.

Please feel free to call me if you have any questions or comments.

Very truly yours,

Vicki Gaynor
Manager of Community and Government Affairs

Attachment
Exhibit A, Map Showing Approximate Location of Activities
EWA MARINA - AREA I PROJECT SITE

EWA MARINA DEVELOPMENT

PHASE I, INCREMENT I

EWA MARINA - AREA I PROJECT SITE

LEGEND

--- EWA MARINA BOUNDARY

--- PHASE I, INCREMENT I BOUNDARY

EWA MARINA - AREA I PROJECT SITE

Exhibit A

Scale in Feet

1200 600 0 1200 2400

TRUE NORTH
**Commission on Water Resource Management**

**FROM:**

**DATE:** 8/18

**SUSPENSE DATE:_________**

<table>
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<tr>
<th>TO</th>
<th>INIT</th>
<th>TO</th>
<th>INIT</th>
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**Information**

**PLEASE:**

- See Me
- Review & Comment
- Take Action
- Type Draft
- Type Final
- File
- Xerox __ copies

---

6pm comments on test?

1. CI approved to stabilize.
2. To determine T in G027129 seed dataset from logoim (1/2w)
3. No attempt to pull out total influence

chlorides stable 

pumped at ~3.5 mgd for 96 hours.
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani Street, Suite 810  
Honolulu, HI 96813  

Dear Mr. Lee:  

Thank you for submitting the EP-27 Pumping Test Data Report, dated August, 1997, in compliance with the May 14, 1997 action by Commission on Water Resource Management. The results of the pumping test show that the chlorides in the well stabilized at 900 ppm after being pumped at 3.5 million gallons per day for 96 hours.  

As was discussed during an August 25, 1997 telephone conversation with Mr. Raymond Kanna, we will look forward to receiving the datafile on diskette that was used to construct Figure 9 in the report (Quattro Pro or Lotus format). This information will be used to determine the transmissivity of the caprock in the vicinity of your well.  

If you have any questions, please contact Glenn Bauer at 587-0263.

Sincerely,

RAE M. LOUI  
Deputy Director  

LN:ss
Mr. Kenneth E. Sprague, Director  
Department of Wastewater Management  
City & County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Sprague:

Ground Water Use Permit No. 347
for Haseko Well No. 1 (Well No. 1902-01)
Puuloa Ground Water Management Area, Oahu

Haseko recently received an interim Water Use Permit for Well No. 1902-01 for Puuloa Ground Water Management Area for use of 1,500 mgd. A condition to this permit requires Haseko to use reclaim water when available.

We would like to initiate discussions with your Department to explore the current status of your reclaim water program. Haseko has been an advocate and supporter of reclaimed water and we look forward to the opportunity to discuss this matter in detail with your staff.

Could you please let us know who is coordinating your reclaim water program? I will have Mr. Raymond Kanna of my office arrange for a mutually convenient meeting date.

Sincerely,

Nelson W.G. Lee  
Executive Vice President

NWGL: dsl  
Enclosure: Letter/Permit dated 5/30/97 from CWRM-SS

cc: Mr. Michael D. Wilson, Chairperson  
State Department of Land and Natural Resources  
Commission on Water Resource Management
Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Approval of Water Use Permit for Well No. 1902-01
Puuola Ground Water Management Area, Oahu

This letter transmits your water use permit for Haseko Well No. 1 (Well No. 1902-01) for use of 1,500 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission’s approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. The duration of the interim permit shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use of water supply or water quality occurs.

b. Require adherence to the chloride sampling protocol (attached) and the submittal of weekly chloride data, as may be amended by the Commission staff.

c. Require adherence to the Conservation Conditions (attached).

d. Require the permittee to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).

Enclosed with this letter of approval are the following:

1. Your water use permit

2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

MICHAEL D. WILSON
Chairperson

Attachments
GROUND WATER USE PERMIT
WUP NO. 347

PERMITTEE

Applicant/Water User
Address  HASEKO (EWA), INC.
         820 MILILANI ST., SUITE 810
         HONOLULU, HI 96813

Landowner of Source
Address  HASEKO (EWA), INC.
         820 MILILANI ST., SUITE 810
         HONOLULU, HI 96813

PERMITTED SOURCE INFORMATION

Island                          OAHU
Water Management Area          PUULOA
    Aquifer Sector             EWA CAPROCK
    Aquifer System             PUULOA
    System Sustainable Yield   NA
Well Name                      HASEKO WELL NO. 1
State Well No.                 1902-01

PERMITTED USE INFORMATION

Reasonable beneficial use       GOLF COURSE, ROADWAY, & MAINTENANCE IRRIGATION; DUST CONTROL
Withdrawal (12 month moving ave.) 1,500 mgd
Chloride Cap                    1,000 mg/l
Location of water use
    TMK #                      9-1-12:5-7
    Address                     EWA MARINA PROJECT
    State land use classification URBAN
    County zoning classification P-2, A-1, R-5

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest" (HRS § 174C-3).

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: Nelsem W. Lee Date: 7/17/97

Printed Name: Nelsem W. Lee Firm or Title: Haseko (EWA) Inc.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.
July 7, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Approval of Water Permit Well No. 1902-01 (WUP #347)
Puuloa Ground Water Management Area, Oahu

Dear Sir:

Haseko encloses for your records, an executed copy of our Ground Water Use Permit WUP No. 347. A copy will be forwarded to you under a separate cover.

If you have any questions with regards to these matters, please contact me at 536-3771 ext. 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President

Enclosure
GROUND WATER USE PERMIT
WUP NO. 347

PERMITTEE

Applicant/Water User
Address
HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

Landowner of Source
Address
HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

PERMITTED SOURCE INFORMATION

Island
OAHU
Water Management Area
PUULOA
Aquifer Sector
EWA CAPROCK
Aquifer System
PUULOA
System Sustainable Yield
NA
Well Name
HASEKO WELL NO. 1
State Well No.
1902-01

PERMITTED USE INFORMATION

Reasonable beneficial use
GOLF COURSE, ROADWAY, & MAINTENANCE IRRIGATION; DUST CONTROL
Withdrawal (12 month moving ave.)
1,500 mgd
Chloride Cap
1,000 mg/l
Location of water use

TMK #
9-1-12;5-7
Address
EWA MARINA PROJECT
State land use classification
URBAN
County zoning classification
P-2, A-1, R-5

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
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8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
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Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

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20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

MICHAEL D. WILSON, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.
July 7, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Approval of Water Permit Well No. 1902-01 (WUP #192)
Puuloa Ground Water Management Area, Oahu

Gentlemen:

Haseko encloses for your records, an executed copy of our Ground Water Use Permit WUP No. 192. A report of a pump test completed on June 2, 1997 is currently being prepared by our consultant, Camp Dresser and McKee. A copy will be forwarded to you under a separate cover.

If you have any questions with regards to these matters, please contact me at 536-3771 ext 225.

Sincerely,

Nelson W.G. Lee
Executive Vice President

Enclosure
# GROUND WATER USE PERMIT

**WUP NO. 192**

## PERMITTEE

**Applicant/Water User**

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Landowner of Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>HASEKO (EWA), INC.</td>
<td>820 MILILANI ST., SUITE 810, HONOLULU, HI 96813</td>
<td>HASEKO (EWA), INC.</td>
</tr>
</tbody>
</table>

## PERMITTED SOURCE INFORMATION

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<tr>
<th>Island</th>
<th>OAHU</th>
<th>Water Management Area</th>
<th>PUULOA</th>
<th>Aquifer Sector</th>
<th>EWA CAPROCK</th>
<th>Aquifer System</th>
<th>PUULOA</th>
<th>System Sustainable Yield</th>
<th>NA</th>
<th>Well Name</th>
<th>EP 27</th>
<th>State Well No.</th>
<th>1902-01</th>
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</table>

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<tr>
<th>Reasonable beneficial use</th>
<th>AGRICULTURE</th>
<th>Withdrawal (12 month moving ave.)</th>
<th>1.800 mgd</th>
<th>Chloride Cap</th>
<th>1.000 mg/l</th>
<th>Location of water use</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMK #</td>
<td>OSCO FIELDS 71,84,86,88,(POR)91</td>
<td>Address</td>
<td>EWA, OAHU</td>
<td>County zoning classification</td>
<td>P-2, RESORT, R-5, B-2, A-1, A-2</td>
<td></td>
</tr>
</tbody>
</table>

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses mean "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission’s periodic review of the PUULOA Aquifer System’s sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

---

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ___________________________ Exec. U.P. Date: 7/1/97

Printed Name: Nelson W. Lee Firm or Title: Haseko (Ewa), Inc.

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 821
HONOLULU, HAWAI 96809
MAY 30 1997

Mr. Nelson W.G. Lee
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

Dear Mr. Lee:

Approval of Water Use Permit for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu

This letter transmits your water use permit for Haseko Well No. 1 (Well No. 1902-01) for use of 1,500 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. The duration of the interim permit shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use of water supply or water quality occurs.

b. Require adherence to the chloride sampling protocol (attached) and the submittal of weekly chloride data, as may be amended by the Commission staff.

c. Require adherence to the Conservation Conditions (attached).

d. Require the permittee to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well No. 1902-01 (WUP No. 347).

Enclosed with this letter of approval are the following:
1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

MICHAEL D. WILSON
Chairperson

Attachments
GROUND WATER USE PERMIT
WUP NO. 347

PERMITTEE

Applicant/Water User
Address: HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

Landowner of Source
Address: HASEKO (EWA), INC.
820 MILILANI ST., SUITE 810
HONOLULU, HI 96813

PERMITTED SOURCE INFORMATION

Island: OAHU
Water Management Area: PUUOLA
Aquifer Sector: EWA CAPROCK
Aquifer System: PUUOLA
System Sustainable Yield: NA
Well Name: HASEKO WELL NO. 1
State Well No.: 1902-01

PERMITTED USE INFORMATION

Reasonable beneficial use: GOLF COURSE, ROADWAY, & MAINTENANCE IRRIGATION, DUST CONTROL
Withdrawal (12 month moving ave.): 1,500 mgd
Chloride Cap: 1,000 mg/l
Location of water use
TMK #: 9-1-12:5-7
Address: EWA MARINA PROJECT
State land use classification: URBAN
County zoning classification: P-2, A-1, R-5

Pursuant to Hawaii’s State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:
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4. The ground water use here must not interfere with surface or other ground water rights or reservations.

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6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
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   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

   Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOIA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOIA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
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Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

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16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

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18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

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20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant’s Signature: ___________________________ Date: ___________________________

Printed Name: ___________________________________________ Firm or Title: ___________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani St., Suite 810  
Honolulu, HI 96813

Dear Mr. Lee:

Modification of Water Use Permit for Well No. 1902-01  
Puuloa Ground Water Management Area, Oahu

This letter transmits your modified water use permit for EP 27 (Well No. 1902-01) for use of 1.800 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. As part of the Commission’s approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. Standard Condition 18 for interim water use permits shall not apply.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

In addition, the Commission is requiring you to conduct a pump test by June 14, 1997 to confirm that the source can sustain withdrawals at the modified permitted amount without exceeding 1,000 mg/l of chloride. The Commission has delegated the authority to approve or modify the proposed pump test procedure to the Commission staff.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

MICHAEL D. WILSON  
Chairperson

Attachments
# GROUND WATER USE PERMIT

**WUP NO. 192**

## PERMITTEE

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## PERMITTED USE INFORMATION

| Reasonable beneficial use       | AGRICULTURE                                          |
| Withdrawal (12 month moving ave.) | 1.800 mgd                                           |
| Chloride Cap | 1,000 mg/l                                        |

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The ground water use here must not interfere with surface or other ground water rights or reservations.

The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:

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18. The water use permit granted shall be an interim water use permit, pursuant to HAR §13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS §174C or HAR §13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ___________________________ Date: ___________________________

Printed Name: ___________________________ Firm or Title: ___________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.
TO: Mr. Dean Uchida, Administrator
Land Division
FROM: Rae M. Loui, Deputy Director
Commission on Water Resource Management (CWRM)
SUBJECT: Review Comments - Proposed Cluster Housing Application No. 96/CL-1 - Ewa Marina (Area I), Ewa, Oahu, Tax Map Key: 9-1-11:7 and 9-1-12:5
FILE NO.: PM-97-040

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

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas which are important for the maintenance of streams and the replenishment of aquifers.

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

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

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

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

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

[ ] We recommend that no development take place affecting highly erodible slopes which drain into streams within or adjacent to the project.

[ ] If the proposed project diverts additional water from streams or if new or modified stream diversions are planned, the project may need to obtain a stream diversion works permit and petition to amend the interim instream flow standard for the affected stream(s).

[ ] Based on the information provided, it appears that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

[ ] Based on the information provided, it does not appear that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

[ ] An amendment to the instream flow standard from the CWRM would be required before any streamwater is diverted.

[ ] Any new development that is permitted along a stream that is not yet channelized should be based on the express condition that no streams will be channelized to prevent flooding of the development. Development in the open floodplain should not be allowed; other economic uses of the floodplain should be encouraged.

[X] OTHER:

We understand that the City is requiring dual water lines to service new developments in the Ewa area. The application does not describe non-potable water service to the project area. Haseko (Ewa), Inc. (Haseko) has applied and received interim approval for nonpotable ground water from the Ewa Caprock Aquifer for golf course, landscape, and maintenance irrigation and for dust control on fallow areas formerly in sugarcane. This interim water use permit expired on July 12, 1995. The Commission extended the duration of the permit pending a decision on Haseko’s request for a new water use permit.

Ground water in the Ewa Caprock Aquifer is expected to become more saline as the return irrigation recharge from Oahu Sugar Co.'s irrigation practices has ceased. We are encouraging the use of reclaimed water to serve nonpotable needs in Ewa when that resource becomes available in 1998.

With regard to the Ewa Marina project, the water use permit application to excavate the marina is in a contested case hearing. Closing arguments will be heard on February 25, 1997. A decision on the application is expected soon thereafter.

If there are any questions, please contact Lenore Nakama at 587-0218.
MEMORANDUM

TO: Division of Aquatic Resources
    Historic Preservation Division
    Division of State Parks
    Commission on Water Resource Management
    Division of Forestry and Wildlife
    Division of Conservation and Resources Enforcement
    Division of Boating and Ocean Recreation
    Land Division - Planning & Technical Services, Oahu District Land Office,
    Engineering Branch

FROM: Dean Y. Uchida, Administrator

SUBJECT: Request for Comments - Proposed Cluster Housing Application No. 96/CL-1 - Ewa
Marina (Area 1), Ewa, Oahu, Tax Map Key: 9-1-11:7 and 9-1-12:5

Please review the attached:

- DRAFT SUPPLEMENTAL EIS
- DRAFT EIS PREPARATION NOTICE
- ENVIRONMENT ASSESSMENT

and submit your comments within the time requested above. If you wish to review the original
application and attachments, please contact Patti Miyashiro at 587-0430.

If no response is received by the suspense date, we will assume there are not comments.

Attachment(s)

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

Signed ____________________________
Date: ____________________________
APPLICATION FOR CLUSTER DEVELOPMENT

OF THE

CLUSTER-HOUSING DEVELOPMENT,
EWA MARINA - AREA I

APPLICANT:

HASEKO (EWA), INC.

DECEMBER 16, 1996
CITY AND COUNTY OF HONOLULU
DEPARTMENT OF LAND UTILIZATION
680 South King Street, 7th Floor
Honolulu, Hawaii 96813

DLU MASTER APPLICATION FORM

Additional data, drawing/plans, and fee requirements are listed on a separate sheet titled “Instructions for Filing.”

Please ask for these instructions.

All specified materials and fees must accompany this form; incomplete applications could delay processing. You are encouraged to consult with department staff in completing the application. Please call the appropriate phone number given in the “Instructions for Filing” sheet.

R E M I T   R E Q U E S T E D (Check one or more as appropriate):

Clusters:
Agricultural Cluster
Cluster Housing
Country Cluster

Conditional Use Permits:
Type 1
Type 2

Existing Use
Flood Hazard Variance

Special Management Area Permit
Assessment
State Special Use Permit
Subdivision
Sunlight Reflection
Variance from L.U.O. Section

Waiver (public use/utilities)
Zero Lot Line
Zone Change, From __________ to __________
Zoning Adjustment, L.U.O. Section

TAX MAP KEY(S):
Portion of 9-1-012:7 and portion of 9-1-012:5

LOT AREA: 82.66 Acres
ZONING DISTRICT: R-5/F-2
STATE LAND USE DISTRICT: Urban

STREET ADDRESS/LOCATION OF PROPERTY: Ewa Beach

RECORDED FEES OWNER:
Name: HASEKO (Ewa), Inc.
Mailing Address: 820 Mililani Street Suite 820
Hawaii, HI 96813
Phone Number: (808) 536-3771
Signature

APPLICANT: HASEKO (Ewa), Inc.
Name
Mailing Address: 820 Mililani Street Suite 820
Hawaii, HI 96813
Phone Number: (808) 536-3771
Signature

PRESENT USE OF PROPERTY/BUILDING: Vacant

AUTHORIZED AGENT/CONTACT PERSON:
Name: Paul Jordan
Mailing Address: 820 Mililani Street Suite 820
Hawaii, HI 96813
Phone Number: (808) 536-3771
Signature

PROJECT NAME or any: Ewa Marina-Area 1

PROJECT PROPOSAL (Briefly describe the proposed activity or project):

Application for cluster housing development - Ewa Marina-Area 1

FOR DEPARTMENT USE ONLY

Submitted Fee Amount: $ __________
Date Application Accepted: ________ / ________ / ________
Accepted By:
Date of Public Hearing:
Approved
Approved with conditions indicated below.
Denied for reason(s) given below.
Exempt project.

THIS COPY, WHEN SIGNED BELOW, IS NOTIFICATION OF THE ACTION TAKEN.

Signature
Time
Date

The above approval does not constitute approval of any other required permits, such as building permits.
II. INTRODUCTION

HASEKO (Ewa), Inc. (HASEKO or Applicant) is the owner and developer of the Ewa Marina Community Development (Ewa Marina) located in Ewa Beach, Oahu, Hawaii.

This application for a cluster housing development is submitted pursuant to Article 6, Chapter 21, Revised Ordinances of Honolulu, 1978, as amended (ROH). It is prepared in conformance with the City and County of Honolulu (City) Department of Land Utilization’s (DLU) Instructions for Filing a Cluster - Housing Development and the City’s Cluster/PD-H Guidebook.

By this application, Applicant seeks to develop the initial residential phase of Ewa Marina as a cluster housing project, consisting of both single and multi-family dwellings. The cluster housing project will be called the “Cluster-Housing Development, Ewa Marina - Area I” and will provide 835 housing units on approximately 92.66 acres. (See Exhibit A). The cluster housing project consist of four (4) sub-areas, which are identified as Areas IA through ID. (See Exhibit B). The overall cluster housing project is referred to in this application as the “Cluster Project”.

The Cluster Project incorporates certain “neo-traditional” town planning principles. Because cluster development allows development of sites which would otherwise be difficult to develop under current LUO provisions and subdivision standards, the Cluster Project will include neo-traditional features such as a mix of housing types, alleyways, and a pedestrian friendly network of gridded streets and walkways. Moreover, notwithstanding the zoning restrictions which prohibit retail uses within the Cluster Project, some of the desired commercial uses under neo-traditional principles, i.e., a town center, could be provided on the B-2 zoned parcel located immediately adjacent to the Cluster Project.

Applicant will also be filing an application for the bulk subdivision of the Cluster Project property and the subdivision of the single family dwelling lots within the Cluster Project to be processed concurrently with this cluster application.
III. DESCRIPTION OF EWA MARINA COMMUNITY DEVELOPMENT

A. Brief Overview of Ewa Marina Community Development

Ewa Marina is a master-planned mixed-use development project, which will be developed on approximately 1,110 acres of land and will be a part of the secondary urban center of Kapolei.

Consistent with the concept of Oahu’s secondary urban center, Ewa Marina will be a harmoniously integrated residential, recreational and commercial community where residents can live, work and play.

The residential component of Ewa Marina will consist of several residential neighborhoods and will include single-family homes, mid-rise apartments, and townhouses providing a total of approximately 4,850 housing units.

The focal point of Ewa Marina will be a full service man-made marina approved for up to 1,400 boat slips and various marina-support facilities. Also serving the recreational needs of the region will be the Ewa Marina golf course and a district park located at the northeast entrance to Ewa Marina.

Adjoining the western section of the marina will be a retail/commercial center, visitor accommodations, and various recreational facilities and opportunities. The mixed-used commercial area will serve as a major employment and recreation center for residents of Oahu, particularly residents of the Ewa region.

B. Brief Overview of Residential Component of Ewa Marina

As previously indicated, the residential component of Ewa Marina will provide a total of approximately 4,850 housing units, including single-family homes, mid-rise apartments, and townhouses. The residential component will be developed in phases, with each phase being identified as a separate “area”.

As an alternative to the “suburban sprawl” created under modern suburban designs and landscapes, urban planning has seen a resurgence of interest in developing old-style “communities” which incorporate features of the traditional neighborhood or village. These “neo-traditional” neighborhoods incorporate planning principles and concepts that seek to integrate various age and economic classes within the same neighborhood, reduce the importance of the automobile, encourage walking and interaction among its residents, and generally provide a sense of community.

Applicant has prepared a conceptual plan for the residential component of Ewa Marina, which incorporates various neo-traditional features. However, several of
the neo-traditional features envisioned under the conceptual plan are not permitted under the existing City Land Use Ordinance (LUO).

The Cluster Project, which is the subject of this application, is the initial residential phase of Ewa Marina and incorporates certain neo-traditional features that are permitted under the current LUO such as: providing a mixture of housing sizes and types within the same neighborhood to (e.g., a mixing of single family dwellings with townhouses and other multi-family dwellings); clustering of dwellings on smaller lots to allow for more efficient and useable open space; providing a pedestrian oriented network of gridded streets, sidewalks and pedestrian pathways to encourage walking and socializing and reduce dependence on the automobile; placing garages at the rear of the lots accessible by private service alleys, and increasing streetscaping in the front of the dwellings.

Because of limitations under the LUO, the Cluster Project does not include commercial uses, which is a primary feature of neo-traditional neighborhoods. This neo-traditional concept of mixing uses within the same neighborhood seeks to provide a community in which residents of all ages can live, work and play. Therefore, neo-traditional principles call for residences, shops, workplaces and civic buildings or town centers to all be located within close proximity. For example, neighborhood grocery stores, post offices, and eating establishments are commonly found strategically located among residences in neo-traditional neighborhoods. This mixing of uses not only further encourages walking and interaction among the residents, but by reducing the importance of the automobile, all residents, even those that are unable to drive such as children and the elderly, are able to live, work and play -- all within the boundaries of the neighborhood.

Notwithstanding the zoning restrictions which prohibit commercial uses within the Cluster Project, Applicant plans to provide some of the desired commercial uses on a commercially zoned parcel located within the Ewa Marina project immediately adjacent to the southeastern corner of the Cluster Project. Such commercial uses will be developed as part of a subsequent phase of the Ewa Marina project.

Applicant does not foresee developing all of its proposed 4,850 housing units for Ewa Marina under the neo-traditional concept. However, subject to market conditions, limitations under the current LUO, and future opportunities created by amendments to the LUO, Applicant envisions that subsequent residential phases/areas will include certain other neo-traditional features, such as: the mixing of uses discussed above; making public transportation a viable alternative to the automobile, and providing town centers or civic buildings that reinforce the identity of the neighborhood and provide gathering places for the entire community to engage in social, cultural and other activities.
B. Objectives Of The Design Concept

1. Ewa Marina Design Concept: The objective of the design concept for the overall Ewa Marina project is to create a mixed-use “community” utilizing neo-traditional neighborhood land use planning concepts and principles. The overall design concept for the Ewa Marina and the Cluster Project can be realized by taking advantage of the flexibility offered under the LUO for cluster housing developments.

The design concept for the overall Ewa Marina project incorporates neo-traditional concepts which seek to: encourage social interaction within the neighborhood by mixing uses and housing types and providing town centers and/or civic centers; encourage walking and public transportation and reduce dependence on the automobile; provide for more efficient and usable open space areas by cluster housing on smaller lots; provide a choice of routes through a network of gridded streets.

Ewa Marina will be developed in phases, with the Cluster Project serving as the initial residential phase. The Cluster Project will incorporate certain neo-traditional features to the extent permitted under the LUO and as dictated by the current housing market. Subject to market conditions and limitations of the LUO, subsequent phases will incorporate additional neo-traditional features.

2. Cluster Project Planning Concept: The objective of the planning for the Cluster Project is to meet the following criteria:

a. Create a viable and marketable “first phase” of development that will enable the Cluster Project to successfully lead itself into the future phases of Ewa Marina.

b. Create a site plan that meets the City’s current cluster development zoning and engineering ordinances that govern the property and the planned roadways, and that will support the community’s long term infrastructure needs.

c. Create a mixed-housing development of single-family and multi-family building types that creates a community which integrates residents of various age and economic classes.

d. Create a pedestrian oriented network of sidewalks and pedestrian pathways throughout the community, which encourages walking and reduces dependence on automobiles.
e. Create an efficient and usable network of parks, open space and landscape areas throughout the community, which are connected by a network of pedestrian sidewalks and pathways.

f. Create yard space for all housing types throughout the community, and connect these yards and community open space, landscape areas and parks by a network of pedestrian sidewalks and pathways.

3. Housing Design Concept: The objective of the housing design for the Cluster Project is to meet the following criteria:

a. Create a design that takes advantage of the neo-traditional neighborhood planning approach, the natural attributes of the site, allows for flow-through natural ventilation, provides exterior living spaces, and affords an acceptable level of privacy and security to each unit.

b. Create a mixture of housing sizes and types, including both detached and attached dwelling units, that meets the community's needs and that range in price from affordable to market rate.

4. Site Development and Infrastructure Concept: The objective of the site development concept is to reduce grading requirements, to allow for efficient design of utility infrastructure and to provide a pedestrian friendly layout through the use of a gridded network of streets and pedestrian walkways. The use of through streets, secondary alleys and pedestrian walkways provide for greater options in utility locations such as trash pickup and drainage infrastructure, in addition to improving the pedestrian environment.

5. Landscape Design Concept: The objective of the landscape design concept is to create a blending of a tropical oasis theme and the dry outer fringes. Coconut and kiawe trees, or species with similar characteristics, will be planted as accents and theme trees to carry the character indicative of the arid landscape in Ewa Beach. A hierarchy of trees species will be used with zones based on underlying street right of way dimensions. Narrower pavement widths within standard right-of-ways are proposed to further enhance the pedestrian environment by allowing for wider planting strips and street trees.
C. Existing Conditions

1. Abutting Land Uses

The Cluster Project is bounded by Fort Weaver Road along its eastern boundary. The southeastern corner of the Cluster Project is abutted by commercial zoning, including the Ewa Beach Shopping Center and an undeveloped B-2 zoned parcel which is also part of the Ewa Marina project. Abutting the southern portion of the Cluster Project is the Ewa Beach Elementary School, which is zoned R-5. The remainder of the Cluster Project is surrounded by the overall Ewa Marina project, which is currently undeveloped.

2. Hazardous Areas

There are no known hazardous areas adjacent to or on the Cluster Project site.

The Federal Emergency Management Agency’s Flood Insurance Rate Map (FIRM) indicates that the lower portion of the overall Ewa Marina (makai of the Cluster Project) is located in Zones A and AE which are designated as special flood hazard areas inundated by the 100-year flood. Base flood elevations have been determined in Zone AE, but not in Zone A. As indicated on the FIRM maps, the flood elevation ranges from elevation 6 to elevation 8.

The Cluster Project is located within Zone D on the FIRM maps. Zone D is designated for areas in which the flood elevations are undetermined.

3. Slope and Topographic Analysis

The Cluster Project site is located within the Ewa Coastal Plain. The property is relatively flat with elevations ranging from 21 feet above mean sea level at the mauka end adjacent to Fort Weaver Road to 12 feet above mean sea level at the makai end adjacent to Ewa Beach Elementary School.

The surface of the site is fairly uniform and slopes at a rate of 0.2% to 1.0%.
4. Soil and Drainage Analysis

Surface Soils

The overall development area for Ewa consists of five soils types as classified by the Soil Conservation Service. The soil type within the Cluster Project is Fill land (Fd), which consists of fill material from dredging, excavation from adjacent uplands, garbage and bagasse and slurry from sugar mills.

Subsurface Condition

The Soils Investigation, Ewa Marina Total Project, dated November 13, 1984, prepared by Dames & Moore, describes the subsurface soils of the Ewa Marina Project, including the Cluster Project, as follows:

In general, the site is underlain by a thin mantle of soil over coral. The coral is exposed in some areas. The upper portion of the mantle, which averages less than 2 feet in thickness, is composed mainly of sandy and clayey silt. In a few cases, sieve analyses indicate that the upper soils are classified as silty sands. A thin layer of silty coralline gravel underlies the upper silt and extends as deep as 4-1/2 feet below the ground surface.

The coral consists principally of in situ reef rock and conglomerate which is hard and strong. Locally, softer and weaker shell rock and dune rock were encountered. However, the areas of softer rock do not appear extensive. Coral consistency is typically erratic and hard rock is often encountered overlying zone of softer materials.

Existing Drainage

Storm runoff generated on-site of the Cluster Project percolates into the soil and eventually reaches the ocean as groundwater. During heavier storms, runoff generally flows toward the ocean.

There is an existing underground drainage system within Fort Weaver Road which is presently accepting a small portion of runoff from the Cluster Project site.

Papipi Road and the adjoining existing residential areas have a limited underground drainage system which is presently accepting a small portion of runoff from the Cluster Project site.
Drainage Studies

The Drainage Master Plan for HASEKO (Ewa), Inc. Cluster-Housing Development Ewa Marina - Area I, dated August 1996, prepared by Gray, Hong, Bills & Associates, Inc., has been prepared in conjunction with the proposed Cluster Project and is consistent and compatible with the Site Drainage Master Plan, dated August 1996, prepared by GMP Associates, Inc.

5. Existing Structures and Uses

There are no existing structures located on the property encompassing the Cluster Project. The property was previously used for sugar cane cultivation. However, it is currently fallow.

6. Desirable Views

The property is generally flat with minor gradient changes and is located approximately 20 feet above sea level. Because of this there are no discernible views with the exception of the Waianae Mountain ranges to the north of the property.

7. Easements

The Cluster Project site is subject to the easements described below. Copies of the easement documents will provided upon request.

a. There are five (5) water pipeline easements located within the Cluster Project along Fort Weaver Road. These easements have all been dedicated to the City, and are described in further detail as follows (Land Court Document No. 2237810):

   Easement 1987 for water pipeline and road purposes, as described in Land Court Order No. 92211 and shown on Land Court Map 452.

   Easement 1988 for water pipeline purposes, as described in Land Court Order No. 92211 and shown on Land Court Map 452.

   Easement 2307 for water pipeline purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.
Easement 2308 for water pipeline and road purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.

Easement 2309 for water pipeline purposes, as described in Land Court Order No. 96916 and shown on Land Court Map 503.

b. A drainage/flowage easement (Easement 2310), is part of the water pipeline easement system described above, and is described in Land Court Order No. 96916 and shown on Land Court Map 503. This easement was dedicated to the City together with the water pipeline easements described above (See Land Court Document No. 2237810). Applicant is considering an alternate drain connection for the water pipelines, which if provided, will allow this easement to be canceled.

c. A temporary utility easement has been granted to Hawaiian Electric Company, Inc. to run power lines across the Ewa Marina project and provide electricity during development of the project. (See Land Court Document Nos. 2284736 and 2284737). The easement and power lines will be relocated to a permanent utility easement to be designated at a later date.

8. **Existing Road Widths, Conditions and Ownership of All Access Roads**

The Cluster Project site is bounded on the east side by Fort Weaver Road, which is a public 100-foot right-of-way. Fort Weaver Road is fully improved fronting the Cluster Project site and the pavement is in good condition.

9. **Existing Public Facilities**

**Potable Water**

Various water facilities, including source, storage and transmission, have been constructed by the Ewa Plain Water Development Corporation (EPWDC). Applicant has contributed its proportionate share of the cost for the improvements. Therefore, water service can be provided to the Cluster Project by connection to the 20-inch line which has been provided off the 36-inch transmission line within Fort Weaver Road. This 20-inch connection line is located at the northeast portion of the Cluster Project site.
Sanitary Sewer

As part of the Ewa Beach Sewers Section I, Improvement District 259, the sizes of various sewer lines in the existing Ewa Beach area were increased to provide sufficient capacity for portions of the Ewa Marina project. The cost for the larger size lines were paid for by the previous developer.

A maximum of 2.4 mgd of sewer flow can be accommodated by the existing 24-inch Ewa Interceptor Sewer at Papipi Road located on the southeast side of the Cluster Project site. This is adequate to handle the entire sewer flow from the Cluster Project site.

The Honouliuli Wastewater Treatment Plant presently has a capacity of 38 million gallons a day (mgd), of which 13 mgd is being upgraded to secondary treatment. According to the Department of Wastewater Management, this should provide enough capacity to cover the overall Ewa Marina project, including the Cluster Project. The improvements for secondary treatment were recently completed.

The Honouliuli Wastewater Treatment Plant is planned for further upgrading to 51 mgd. Construction is scheduled to commence in 1997, with completion in July 1999.

10. Unique Site Conditions

The entire Cluster Project site is extremely flat with little or no gradient changes. This provides the ideal topographic conditions for a neo-traditional development, which seeks to provide a pedestrian friendly project through a network of gridded streets and pedestrian walkways. In contrast, hilly or mountainous sites typically require curvilinear, non-gridded streets to allow reasonable road inclines, but which limit usage by pedestrians.

D. Proposal

1. Dwelling Units

a. Number, Type and Size.

The Cluster Project will provide a total of 835 dwelling units, consisting of 379 single family units, 320 townhouse units, and 136 apartment units. The Cluster Project will also provide a variety of building and unit types, as well as dwellings of various sizes. For example, the Cluster Project will provide three (3) different building
Cluster-Housing Development, Ewa Marina - Area 1 - Application for Cluster Development

types for the single family units, which will include 3 and 4-bedroom units. The project will also provide five (5) different building types of townhouses, with 2 and 3-bedroom units, and apartments consisting of 2-bedroom units. (See Table D1 on page 15).

The buildings and units within each sub-area of the Cluster Project are described in Table D2. (see pages 16-19)

b. Sale or Rental Price

The projected sales prices, which are projected 1997 sales prices and are subject to change depending on market conditions, are as follows:

- Single Family Dwellings: Approx. $250,000 to $350,000
- Townhouses: Approx. $150,000 to $250,000
- Apartments: Based on 80% of median income, adjusted by the U.S. Department of Housing and Urban Development rates and per agreement with the City Department of Housing and Community Development regarding “affordable units”

c. Form of Ultimate Ownership

- Single Family Dwellings: Fee Simple
- Townhouses: Fee Simple Condominium
- Apartments: Fee Simple or Rental

d. Development Schedule

The projected development schedule for the dwelling units, which is subject to change depending on market conditions, is as follows:

- Year 1: Area IA
- Year 2: Area IB
- Year 3 and beyond: Areas IC and ID

e. Other Features

Applicant originally contemplated developing the project as a zero lot line development. However, Applicant subsequently opted to develop the project as a cluster development to provide for “walk around” single family units with 5-foot side and rear setbacks from
the property line. The side yards and building setbacks and heights for the Cluster Project are based on the 10-foot separation of buildings originally proposed for the zero lot line project. The decision to not develop a zero lot line project was also in part due to Applicant’s desire to eliminate or minimize potential ownership and property line encroachment disputes.

Concurrent with this cluster application, Applicant will be submitting an application for a bulk lot subdivision of the Cluster Project, and for subdivision of the single family dwelling lots.
2. **Building Design**

The proposed buildings have been designed to be compatible with the overall design concept for Ewa Marina. Exterior colors and materials will be harmonious with the existing neighborhood. (See “Ewa Marina Cluster Development Color Scheme” submitted herewith). The orientation of the buildings will take advantage of the views and natural ventilation. The placement of the buildings relative to vehicular lanes and sidewalks will reflect neo-traditional planning concepts and principles and enhance the sense of community.

3. **Open Space/Recreation/Landscaping**

By incorporating the neo-traditional concept of clustering the dwellings together, the Cluster Project will provide a network of usable open space, parks, and landscape areas, including five (5) park areas, and will be connected by a network of pedestrian sidewalks and pathways. The interconnected street system, another neo-traditional feature, is designed to encourage pedestrian use instead of being a series of high volume one way in and one way out collector streets. As a result, it is expected that greater use will be made of the streets as an open space amenity for the Cluster Project, as opposed to the vehicular dominated corridors found in conventional subdivisions, in which landscaping serves only an aesthetic purpose for drivers and passengers.

Planting strips along the streets will include canopy trees that provide character and shade. These canopy trees are made possible by the Cluster Project’s neo-traditional street layout, which provide for wider planting strips and narrower pavement widths than that which are permitted in conventional subdivisions.

Where possible, the Cluster Project will also incorporate the neo-traditional concept of using different species of street trees as a design element to indicate a street hierarchy based on street widths. In addition, if transplanting proves successful and depending on availability of potable water sources, kiawe trees may be moved from adjacent parcels and utilized. Coconut trees will also be planted as accents and theme trees to emphasize the tropical seaside character of the Ewa Marina project. Large areas of grasses will be planted to provide play fields and picnic areas throughout the open space/parks.

Landscape quantities and area calculations are set forth in detail in Table D3 (see pages 21-23).
The sanitary sewer system for the Cluster Project will be in accordance with the standards of the City Department of Wastewater Management (DWM) and will be dedicated to the City upon completion.

The sewer improvements for the Cluster Project will also be developed in accordance with the sewer master plan for the Ewa Marina project, as approved by DWM.

Electrical, Telephone, CATV & Street Lighting Systems

Underground electrical, telephone, CATV and street lighting systems will be in accordance with the standards of the various utility companies and the City.

Upon completion, the improvements will be dedicated to the applicable public utility commissions.

7. Grading and Drainage

Drainage

Drainage of the Cluster Project can be accomplished with storm runoff flowing to the future marina except for small areas where it is not possible to contain the runoff on-site. These areas include the areas adjacent to Fort Weaver Road, Papiipi Road, the Ewa Beach Shopping Center and the Ewa Beach Elementary School.

The on-site drainage system for the Cluster Project will consist of underground storm drains that will ultimately discharge into the future marina. On-site drainage improvements will be designed to City standards. Drainage systems within public roads and applicable easements will be dedicated to the City. Small inlets and drain pipes within the privately owned alleys will remain private and will connect to the dedicated City storm drainage system.

Until such time that the marina is constructed, the on-site drainage system for the Cluster Project will discharge into a temporary detention/retention basin located makai of the Cluster Project site. The basin will be provided to meet City and NPDES requirements during the interim period until the marina is completed. The basin will be designed per the U.S. Soil Conservation Services method outlined in their Erosion and Sediment Control Guide for Hawaii Manual.
The on-site drainage system for the Cluster Project will be designed in accordance with the drainage master plan for the Cluster Project, as approved by the City Department of Public Works.

Grading

Applicant envisions that fill for the Cluster Project site will consist of materials excavated from proposed cut areas located outside of the Cluster Project site, but within the overall Ewa Marina project site.

The Cluster Project site will be graded to minimize storm runoff from flowing outside of the project limits. Generally, the surrounding areas will be graded to drain towards the future marina, with slopes ranging from 0.5% to 1.0%.

All grading will be done in accordance with the City's grading ordinance.

Erosion Control

A temporary sediment and retention basin located outside of the Cluster Project site will serve as the sediment and retention basin for the Cluster Project during the interim period until the marina is completed.

An erosion control plan will be developed in conjunction with the design phase of the Cluster Project and shall be in accordance with the Soil Erosion Standards and Guidelines of the City Department of Public Works.

8. Relationship of the Cluster Project to the Neighborhood

The residential character of the Cluster Project is compatible with the existing zoning and character of the existing neighborhood. Clustered units have been located adjacent to the highest intensity use surrounding the site of the commercial and school district.

The neo-traditional neighborhood concept envisioned for the Cluster Project is very compatible with the existing planning for Ewa Beach. Consistent with neo-traditional principles, residents of the Cluster Project would be encouraged to interact with the existing neighborhoods through the pedestrian friendly network of gridded streets and pedestrian pathways, which would connect to the existing commercial areas.

In addition, although commercial uses are not included within the Cluster Project due to LUO restrictions, the overall development concept for Ewa Marina envisions that some of the commercial uses desired under
MAP OF EWA MARINA - AREA I PROJECT SITE

EWA MARINA DEVELOPMENT

PHASE I, INCREMENT 1

EWA MARINA - AREA I PROJECT SITE

LEGEND

---
EWA MARINA BOUNDARY

---
PHASE I, INCREMENT I BOUNDARY

Square dots
EWA MARINA - AREA I PROJECT SITE

Scale in Feet

1200 600 0 1200 2400
MAP OF COMMUNITY-BASED PARKS

EXHIBIT D

For Park Dedication Only
August 8, 1997

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

EP-27 (Well #1902-01)
Water Use Permit #192

Gentlemen:


If you have any questions, please contact Mr. Raymond S. Kanna at 536-3771 ext. 242.

Sincerely,

Nelson W.G. Lee
Executive Vice President

NWGL: dsl
Enclosure
EP-27 Pumping Test
Data Report

August, 1997

Prepared for HASEKO (Ewa) Inc.
by
Camp Dresser & McKee Inc.
10 Cambridge Center
Cambridge, MA 02142
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Section 1  Introduction

In response to the Commission on Water Resource Management’s request of February 21, 1997 a 96-hour pumping test was conducted at well EP-27. This test was conducted to determine the specific capacity and any trend in salinity at EP-27.

EP-27 is a coral/borrow pit with an areal extent of approximately 1000 ft², and a water depth of 5 to 7 feet. Three wells, GC-1, GC-2 and GC-3, were monitored during the pumping test. GC-1 is located approximately 1,900 feet west of EP-27, GC-2 is located 2,500 feet southwest of EP-27, and GC-3 is located 2,900 feet northeast of EP-27. Figure 1 presents the locations of the pumping test well EP-27, and of the three monitoring wells GC-1, GC-2, and GC-3.

Transducers (In-Situ Troll Dataloggers) recorded the water level in EP-27 and three monitoring wells, GC-1, GC-2 and GC-3. Water levels were monitored for 72 hours prior to the pumping test, during the 96 hour pumping test, and for 75 hours following the cessation of pumping. Enclosed with this report is a diskette containing the water level data in spreadsheet format. The water level data refer to the static water level above the pressure transducer at the beginning of each test phase. At the beginning of each phase the static water level is zero, and subsequent water levels are measured above or below this reference. A Stevens Water Level Recorder - Type F was also installed in the EP-27 pool.

The pumping test began at 11:27 AM on Monday, May 26, 1997 and concluded at 12:00 noon on Friday, May 30, 1997. The pumping rate was maintained at approximately 2,400 gallons per minute (gpm). During the pumping test discharge water samples were taken and conductivity and pumpage records were recorded every 4 hours. The conductivity and water temperature in the EP-27 pool were also measured every 4 hours. The measurements in the EP-27 pool were taken at depths of 1 foot (top), 3 feet (mid), and 6 feet (bottom), and at approximately 6 feet laterally from the intake to the pump. The discharge water from the pumping test was pumped through the irrigation system and applied to Haseko property to the east of EP-27.

Section 2  Pre-Test Monitoring

Water levels in the aquifer were monitored for a period of 72 hours prior to the pumping test. This monitoring was designed to evaluate tidal influences in the aquifer, and to evaluate the responses at each of the monitoring wells to the tide cycle. Measurements were made at 6 minute intervals throughout the monitoring period.

Water level measurements taken during the Pre-Test monitoring at pumping well EP-27 and at the three monitoring wells are plotted in Figures 2 through 5. This data can be found in spreadsheet PTEST.XLS on the accompanying diskette. Very similar tidal signals are evident at well EP-27 and monitoring well GC-1. A slightly different tidal signal with greater amplitude is apparent at monitoring well GC-2. This is expected since GC-2 is located closer to the shoreline than is GC-1.
The Pre-Test water level record at monitoring well GC-3, which is located further inland than the other three wells, was influenced by external factors (the transducer cable was apparently disturbed) during the Pre-Test period and appears to contain some anomalous readings. Since the water level readings at GC-3 are relatively unimportant to the analysis of the pumping test results, these anomalous readings are not considered a problem in the pumping test.

Since EP-27 and GC-1 appear to have very similar tidal signals, and these wells are located approximately the same distance from the shoreline, it was decided to use the GC-1 water level readings to remove the tidal signal from the EP-27 readings during the pumping test. Figure 6 presents the water level readings at EP-27 minus the water level readings at GC-1, during the Pre-Test monitoring. The resultant readings display a very small remaining tidal cycle with an amplitude of approximately 0.015 feet, which is a result of the slightly stronger tidal signal at EP-27.

During the pre-test period the temperature and conductivity in the EP-27 pool were monitored. Conductivity levels during the pre-test period were relatively constant, ranging from 3300 to 3350 microsiemens (μS).

Section 3 Pumping Test

The 96-hour pumping test began at 12:00 noon on May 26th, and the response at EP-27 and the 3 GC wells was recorded. Water level measurements were recorded on a logarithmically increasing time frequency until the interval between readings was 6 minutes, at which time measurements continued at 6 minute intervals until the end of the test. The water level data are presented in the spreadsheet PTEST.XLS on the accompanying diskette, and the pumping rate data are presented in Table 1.

Figures 7 and 8 present the water level at well EP-27 during the 96-hour pump test versus a linear time scale. Figure 7 displays the raw water level data which still include the tidal signal. Figure 8 presents the water level at EP-27 minus the water level at GC-1 during the pumping test. From this figure it is apparent that the pumping test created a drawdown of approximately 0.15 feet at well EP-27. In Figure 9 the adjusted water level at EP-27, during the pumping test is plotted versus a logarithmic time scale. The majority of the drawdown occurs within the first 100 minutes of the pumping test. The specific capacity at EP-27 is calculated to be approximately 15,700 gpm/ft.

Plots of the unadjusted water level at the monitoring wells GC-1, GC-2, and GC-3 during the pumping test are presented in Figures 10, 11 and 12. There is no obvious impact of the pumping at any of these wells, only a continuing tidal signal. As in the pre-test period, the aquifer response to the tide cycle at GC-3 is quite different from that observed at GC-1 and GC-2.
Section 4 Recovery Period

The pumping was terminated at 12:00 noon on May 30th and the recovery was monitored for 75 hours. The dataloggers were again set to record on a logarithmic scale at the beginning of the recovery period, and then at 6 minute intervals for the remainder of the period. The water level data are contained in spreadsheet PTEST.XLS on the enclosed diskette.

Figures 13 through 16 present water levels at all 4 wells during the recovery period immediately following the conclusion of the pumping test. Again, the only obvious evidence of a recovery from the pumping test is observed at EP-27. Figures 17 and 18 present the water level at EP-27 minus the water level at GC-1, during the recovery period. Figure 17 presents this data versus a linear time scale, and Figure 18 presents the data versus a logarithmic time scale. The majority of the recovery occurs within the first 200 minutes following the conclusion of pumping. After 200 minutes the residual influence of the tidal cycle is observed. Figures 17 and 18 indicate that the water level at EP-27 recovers between 0.12 and 0.15 feet, an amount comparable to the earlier recorded drawdown.

Section 5 Water Quality Data

Water quality samples were collected from the discharge water every 4 hours during the pumping test, and from the EP-27 pool daily during the recovery period. In Figures 19 and 20, conductivity and chloride concentration are plotted versus time. The conductivity data display a smooth increase during time, appearing to stabilize after approximately 3 days of pumping. Conductivity levels declined once the pumping stopped and returned to pre-test levels. Figure 20 presents the measured chloride concentration vs time. During the pumping test chloride values increase from approximately 860 to 900 mg/l. The chloride concentration also appears to stabilize at a value of approximately 900 mg/l. Once pumping stopped the chloride concentration returned to its pre-test value of approximately 860 mg/l. The conductivity data are presented in Table 2, and the chloride data are presented in Table 3.

Conductivity and temperature measurements were also made at three depths in the pool every 4 hours during the pumping test, and daily during the recovery period. Figure 21 presents the conductivity measurements versus time at all three depths in the EP-27 pool. The behavior observed is consistent across the three depths, with the highest levels being noted at the bottom of the pit. The tidal cycle appears to slightly influence the conductivity levels. Such influences are not noted in the pump discharge samples. During the pumping test the conductivity values rise, and appear to stabilize at a value between 3550 and 3600 μS. Once the pumping test stopped the conductivity values declined to pre-test conditions. The data collected from the EP-27 pool is included in the file EP27WQ.XLS which accompanies this report.
Section 6  Summary

A 96-hour pumping test was conducted at EP-27. This pumping test indicated that an extraction rate of 2,400 gpm can be maintained at EP-27 with approximately 0.15 feet of drawdown. During the pumping test the drawdown at EP-27 occurred over approximately the first 3 hours of the test, with a drawdown of approximately 0.15 feet. The chloride levels measured in the discharge water increased from 860 to 900 mg/l, and stabilized at that level after 3 days of pumping. Water levels and chlorides recovered to pre-test conditions following the test.
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Note: Samples 1 - 25 from Discharge Water  
Samples 26 - 29 from EP-27 Pool

Table 2  
Conductivity Measurements During  
Pumping Test and Recovery Period
<table>
<thead>
<tr>
<th>Sample Number</th>
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<td>5</td>
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<td>29</td>
<td>6/2/97</td>
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<td>860</td>
</tr>
</tbody>
</table>

Note: Samples 1 - 25 from Discharge Water
Samples 26 - 29 from EP-27 Pool

Table 3
Chloride Measurements During Pumping Test and Recovery Period
Location of Pumping Well EP-27 and Monitoring Wells

96-Hour Pumping Test at EP-27
Figure 2
Water Level at EP-27 During Pre-Test
Figure 3
Water Level at GC-1 During Pre-Test
Figure 4
Water Level at GC-2 During Pre-Test
Figure 5
Water Level at GC-3 During Pre-Test
Figure 7
Water Level at EP-27 During Pre-Test
Adjusted Water Level at EP-27 During Pumping Test
Figure 11
Water Level at GC-2 During Pumping Test
Figure 12
Water Level at GC-3 During Pumping Test
Water Level at EP-27 During Recovery Period
Figure 14

Water Level at GC-1 During Recovery Period
Figure 15
Water Level at GC-2 During Recovery Period
Figure 16
Water Level at GC-3 During Recovery Period
Figure 17

Adjusted Water Level at EP-27 During Recovery Period
Figure 18

Adjusted Water Level at EP-27 During Recovery Period

<table>
<thead>
<tr>
<th>Elapsed Time Since Pumping Stopped (min)</th>
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<tr>
<td>0.001</td>
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<tr>
<td>0.05</td>
</tr>
<tr>
<td>0.1</td>
</tr>
<tr>
<td>0.15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Level (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.001</td>
</tr>
<tr>
<td>0.05</td>
</tr>
<tr>
<td>0.1</td>
</tr>
<tr>
<td>0.15</td>
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</table>
Figure 19: Conductivity vs Time

- Discharge Water Samples
- EP-27 Pool Samples
- Pump Test Begins
- Pump Test Ends
Figure 21
Conductivity Measurements in the EP-27 Pool
<table>
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<th>TO:</th>
<th>INIT.</th>
<th>FOR:</th>
<th>PLEASE:</th>
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<td>LOUI, R.</td>
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<td>CHING, F.</td>
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<td>NAKAMA, L.</td>
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<td>Signature</td>
<td>Review &amp; Comment</td>
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<td>OHYE, M.</td>
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<td>YODA, K.</td>
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<td>KUNIMURA, I.</td>
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<td></td>
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</table>

This is from the Uncle group test.

Are you file?
FILE CLOSED

SEE 1902-01 FOLDER #2
TESTIMONIES:

Mr. Jim Anthony, a party in the Hawaii Reserves, Inc. contested case hearing, testified against the staff's recommendation to delete Well No. 3554-02 and to reinstate Well No. 3654-03.

MOTION: (COX/MIIKE)

To approve staff's recommendation.

UNANIMOUSLY APPROVED.

ITEM 2.

APPLICATIONS FOR WATER USE PERMITS, REQUESTS FOR NEW AND CONTINUED NONPOTABLE URBAN USES, ALLOCATION PLAN FOR WATER USE PERMITS IN RESPONSE TO LOWER SUSTAINABLE YIELD ESTIMATE FOR THE PUULOA AREA, EWA CAPROCK GROUND WATER MANAGEMENT AREA, OAHU

The Estate of James Campbell, (Well Nos. 1905-08,10)
State of Hawaii, Housing Finance & Development Corp. (Well Nos. 2003-04,07)
Kapolei People's Inc., (Well Nos. 2003-01,02,05)
Hawaii Prince Golf Club, (Well Nos. 1900-02,17 to 20 & 1901-03)
Gentry Development Co., (Well Nos. 2001-03,04,05,09,10,11 & 2002-15)
The Arbors Association, (Well No. 2001-07)
Palm Villas II Association, (Well No. 2001-08)
Palm Court Association, (Well No. 2002-12)
Haseko (Ewa), Inc., (Well No. 1902-01)

PRESENTATION OF SUBMITTAL: Deputy Director Rae Loui

Correction on Page 4, Section B:

The current schedule for the demonstration recharge trench (5 mgd) and full application (10 mgd) is:

<table>
<thead>
<tr>
<th>Operation</th>
<th>Date</th>
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<tr>
<td>Honouliuli Secondary Treatment Operational</td>
<td>9/1996</td>
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<tr>
<td>Demonstration Recharge Trench Operational (5 mgd)</td>
<td>12/1998</td>
</tr>
<tr>
<td>Testing Complete</td>
<td>12/1999</td>
</tr>
<tr>
<td>Complete Trench Operational (10 mgd)</td>
<td>12/2001</td>
</tr>
</tbody>
</table>

STAFF RECOMMENDATION:

The staff requested that the recommendation be amended as follows:

1. Defer action on the sustainable yield for the Ewa Caprock Aquifer to the December 18, 1996 Commission meeting in order to consider the Puuloa Caprock Users Group's draft nonpotable master plan for the Puuloa area.

2. Require that the draft nonpotable master plan include each of the elements outlined in the Group's proposal, be as specific as possible (eg. annual
projections of all nonpotable supply requirements detailed by project and TMK area), encompass the entire Puuloa area and all users in Puuloa, and include a scenario complying with the proposed 5 mgd sustainable yield. The Plan shall also address the current overpumpage at Well Nos. 1902-03 & 04 and Well Nos. 2001-05 & 2001-08.

3. Extend the deadline to September 30, 1996 for the submittal of any additional data or evidence (related to ground water modelling, hydrologic data, or other) which a party wishes to have considered in setting the sustainable yield of the Ewa Caprock Aquifer.

TESTIMONY BY APPLICANT:

Mr. Jeff Dinsmore, Vice President of Gentry Homes, Ltd., submitted a written and oral testimony on behalf of the Puuloa Caprock Users Group. He stated that they were in agreement with the staff submittal, however, requested that the deadline for the submittal of any additional data for consideration of the sustainable yield be extended from September 30, 1996 until December 18, 1996.

Mr. Douglas Ing, attorney for Hawaii Prince Golf Club, stated his objections to the staff's recommendation of a 5 mgd ceiling. (Note: Subsequent to Mr. Ing's testimony, the staff's submittal was amended to specify that the draft plan shall include a scenario complying with the 5 mgd sustainable yield estimate.)

TESTIMONIES:

Mr. Tim Steinberger, of the City and County Department of Wastewater Management was available for questions from the Commission.

MOTION: (MIKE/NOBRIGA)

To approve staff's recommendation as amended.

UNANIMOUSLY APPROVED AS AMENDED.

The Chairperson adjourned the meeting at 3:32 p.m.

Respectfully submitted,

JANIS F. UWAIN
Secretary

APPROVED AS SUBMITTED:

RAE M. LOUI
Deputy Director
APPLICATIONS FOR WATER USE PERMITS
Requests for New and Continued Nonpotable Urban Uses

ALLOCATION PLAN FOR WATER USE PERMITS
In Response to Lower Sustainable Yield Estimate for the Puuloa Area
Ewa Caprock Ground Water Management Area, Oahu

APPLICANT(S):

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<tr>
<th>Well Nos.</th>
<th>Applicant Name</th>
<th>Address</th>
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<td>1905-08,10</td>
<td>The Estate of James Campbell</td>
<td>1001 Kamokila Blvd., Kapolei, HI 96707</td>
</tr>
<tr>
<td>2003-04,07</td>
<td>State of Hawaii, Housing Finance &amp; Development Corp.</td>
<td>7 Waterfront Plaza, Suite 300, 500 Ala Moana Blvd., Honolulu, HI 96813</td>
</tr>
<tr>
<td>2003-01,02,05</td>
<td>Kapolei People's Inc.</td>
<td>91-701 Farrington Hwy., Kapolei, HI 96707</td>
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<tr>
<td>1900-02,17 to 20 &amp; 1901-03</td>
<td>Hawaii Prince Golf Club</td>
<td>91-1200 Fort Weaver Rd., Ewa Beach, HI 96706</td>
</tr>
<tr>
<td>2001-03,04,05,09,10,11 &amp; 2002-15</td>
<td>Gentry Development Co.</td>
<td>P.O. Box 295, Honolulu, HI 96809</td>
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</tbody>
</table>

LANDOWNER(S):

Same
BACKGROUND:

On September 28, 1979, the Board of Land and Natural Resources (BLNR) designated the Pearl Harbor Ground Water Control Area (Pearl Harbor GWCA; Judicial Boundaries of Ewa and Wahiawa Districts) pursuant to Chapter 177, HRS, Ground Water Use Act.

On March 22, 1985, the BLNR established subareas for the Pearl Harbor GWCA, including the Coastal Caprock Subarea.

In 1990, the Commission on Water Resource Management (Commission) adopted the Water Resources and Protection Plan (Plan). The Plan included, as required by HRS 174C-31(c), "hydrologic units and their characteristics, including the quantity and quality of available resources...". The Plan did not include the brackish Ewa Caprock Aquifer as a hydrologic unit.

In the 1988-1992 timeframe, water use permits totalling 19.524 million gallons per day (mgd) were awarded in the Ewa Caprock Aquifer mainly to existing irrigation uses (e.g. Oahu Sugar Co.). Other existing water use permits totaled 39.608 mgd for various salt water and brackish to saline water uses (chlorides > 1,000 MG/L).

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer within the existing designated ground water management area. Due to uncertainties regarding the aquifer's sustainable yield, the Commission did not adopt a sustainable yield estimate for the aquifer.

Since March 1993, the Commission has been awarding one-year interim permits for new uses for the Ewa Caprock Aquifer.

In May 1996, the staff completed a re-evaluation of the Ewa Caprock Aquifer sustainable yield. Based on the staff's analysis of historic data, the staff proposed the establishment of three (3) aquifer systems within the Ewa Caprock Aquifer: Puuloa, Kapolei, and Malakole (see Exhibit 2).
Staff Submittal
September 11, 1996

1), with sustainable yields of 5 mgd, 3 mgd, and 1 mgd, respectively, for chloride concentrations less than 1,000 MG/L.

On August 14, 1996, a public hearing was held on the proposed establishment of aquifer systems and sustainable yields for the caprock aquifer. Before the close of the public hearing, Hawaii Prince Golf Club (HPGC) submitted a written request for a contested case hearing on the proposed establishment of a 5 mgd sustainable yield for the Puuloa area. The written petition was received on August 23, 1996.

ANALYSIS/ISSUES:

Normally, the staff lists and analyzes the criteria set forth in §13-171-13 HAR which must be established by the applicant. However, there are larger issues which must be addressed before this analysis can occur. These are discussed as follows:

A. Nonpotable Water Demand Expected to Increase

The Planning Department, City and County of Honolulu, is in the process of revising the Development Plans for Ewa and Central Oahu. The draft plan shows a projected population increase from 130,526 in 1990 to 185,091 in 2020. This corresponds to a 42% increase in population for the area. A 60% increase in housing units over the same time period is projected: from 36,262 units in 1990 to 58,118 units in 2020 (for Ewa Employment and Dispersed Residential; Exhibit 2). This growth will result in an increase in water needs, both potable and nonpotable.

Although the water demand for Ewa was not available, City and County planners have testified that the 2020 demand for water for the projected growth of the Ewa, Central, Waianae, and Honolulu districts will be about another 90 mgd. This increased demand consists of 56.5 mgd for potable water needs and 33.5 mgd for nonpotable water needs. This is exclusive of agricultural water demand, which is specified in the City’s plans to provide an open space buffer for the proposed urban growth in Central Oahu. Thus, the 90 mgd water demand exceeds the remaining water resources on the island (75 mgd). It is critical that alternative nonpotable sources of water be a part of Oahu’s water planning in order to reduce the competition for potable water as an irrigation source. Further, these figures underscore the important role of the brackish Ewa Caprock Aquifer and of the reclaimed sewage effluent in future growth plans.

To address the expected increase in nonpotable water demand for urban uses, the Commission and the City Department of Wastewater Management retained a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. The February, 1996 plan recommends construction of a demonstration recharge trench in the Ewa Caprock using reclaimed water. The staff has participated in a group consisting of representatives from the Department of Health, City Department of Wastewater Management, City Planning Department, and the Board of Water Supply to champion the use of reclaimed water and a water reclamation project for the Ewa Plain. The major issues include identification of a purveyor for the reclaimed water resource and rates/cost of the resource.

In further support of the plan for reuse on the Ewa Plain, the Commission adopted the following reclaimed water policy on March 13, 1996:

It is the policy of the Commission on Water Resource Management (Commission)
to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

B. Current Allocations Exceed Sustainable Yield in Puuloa

The staff's recommendation of a sustainable yield for the Ewa Caprock Aquifer is based on historical data reflecting the aquifer's response to natural sugarcane irrigation and current urban conditions. The lack of imported basal water by Oahu Sugar Company (OSCo) augmenting the natural sustainable yield of the caprock will affect water availability.

If the Commission were to approve the staff's recommendation to establish three aquifer systems within the Ewa Caprock Aquifer with sustainable yields of 5 mgd for Puuloa, 3 mgd for Kapolei, and 1 mgd for Malakole, only the Puuloa area would be over-allocated. Exhibit 3 (column 5) shows the current allocations in the Puuloa area of the caprock, totalling 15.177 mgd.

However, the over-allocation problem may be only temporary because the City Department of Wastewater Management is moving forward with their plans for a demonstration recharge trench that will recharge the Puuloa area of the Ewa Caprock Aquifer with 5 mgd of R-2 effluent from the Honouliuli Wastewater Treatment Plant. This would replace some of the lost imported basal irrigation recharge from OSCo. It is expected that the demonstration recharge trench will be online by 1999. If the pilot project is successful, additional trenches will be installed to recharge the Kapolei as well as Puuloa area.

The current schedule for the demonstration recharge trench (5 mgd) and full application (13 mgd) is:

| Honouliuli Secondary Treatment Operational | 12/1997 |
| Demonstration Recharge Trench Operational (5 mgd) | 12/1998 |
| Testing Complete | 12/1999 |
| Complete Trench Operational (13 mgd) | 12/2000 |

The current design also allows for direct use of the R-2 effluent in addition to recharging the aquifer. The City is evaluating the feasibility of constructing an R-1 treatment facility to enable less restricted uses.

C. New Water Use Permit Applications

Pending applications for the Puuloa area, shown in Exhibit 4, total 3.174 mgd. For the Kapolei area, requests total 1.796 mgd (Exhibit 5). All pending requests are for various nonpotable non-agricultural uses. On March 13, 1996, the Commission deferred action on all pending requests in the Ewa Caprock until a decision is made on the proposed establishment of a sustainable yield estimate in the Water Resources Protection Plan.
Also shown as a pending request shown in Exhibit 4 is an application for Haseko (Ewa), Inc.'s (Haseko) proposed Ewa Marina project in the Puuloa area, which is the subject of a contested case hearing. The "quantity of the use" for the marina excavation has not been established. The State Department of Transportation also has a pending water use permit application for the Barbers Point Harbor expansion in the Malakole area; action on this application has been deferred pending written notification of the reclassification of the lands from the Agricultural to Urban designation. There are no other pending requests in Malakole.

One condition that new water use permit applications must meet is that the use: "[Can be accommodated with the available water source..." §174C-49(a) HRS. There has been a request for a contested case hearing on the proposed sustainable yield for Puuloa. The staff does not believe that there is a right to a contested case hearing on this matter and is planning to submit the proposed Hawaii Water Plan update to the Commission for action at the Commission meeting of December 18, 1996.

D. Step-Down of Allocations to Match Sustainable Yield

The staff will submit for Commission action a proposal to step-down current allocations to match sustainable yield as well as a recommendation regarding pending new water use permit requests. We have discussed several alternatives with a self-elected Steering Committee of the users and with the Reclaimed Water Champions (Department of Health, City Department of Wastewater Management, City Planning Department, Honolulu Board of Water Supply, Commission on Water Resource Management). In response, on August 29, 1996, a written proposal (Exhibit 6) was received from the Puuloa Caprock Users Group (Group), which includes HPGC, Sogo Hawaii, Inc., Haseko, Gentry Homes, Ltd., and the Navy. The Group does not include Honolulu Board of Water Supply, City Department of Wastewater Management (DWWM), Campbell Estate, and the U.S. Fish and Wildlife Service, the latter three of which are permitted water users in the Puuloa area and are necessary partners in any usable plan.

The Group has requested 90 days to prepare and submit a draft nonpotable master plan (Plan) to the Commission, which will include a recommended plan to manage water use over a proposed two-year interim period. The proposal is very general and does not address issues important to this effort such as the current overpumpage by DWWM (Well Nos. 1902-03 & 04) and Gentry (Well No. 2001-05). Further, the Group implies that it is in possession of data not previously submitted that would be helpful to the Commission in setting the sustainable yield. Although the deadline for testimonies has passed, staff recommends allowing additional time for submittal of the information.

RECOMMENDATIONS:

The staff recommends that the Commission:

1. Defer action on the sustainable yield for the Ewa Caprock Aquifer to the December 18, 1996 Commission meeting in order to consider the Puuloa Caprock Users Group's draft nonpotable master plan for the Puuloa area.

2. Require that the draft nonpotable master plan include each of the elements outlined in the Group's proposal, be as specific as possible (eg. annual projections of all nonpotable supply requirements detailed by project and TMK area), and encompass the entire Puuloa area and all users in Puuloa. The Plan shall also address the current overpumpage at it include a scenario complying
with the proposed supply estimate.
Staff Submittal

September 11, 1996

Well Nos. 1902-03 & 04 and Well Nos. 2001-05.

3. Extend the deadline to September 30, 1996 for the submittal of any additional data or evidence (related to ground water modelling, hydrologic data, or other) which a party wishes to have considered in setting the sustainable yield of the Ewa Caprock Aquifer.

Respectfully submitted,

W. Foy
Deputy Director

Attachments
Exhibit 1 - Location Map
Exhibit 2 - Scenario Comparisons
Exhibit 3 - Ewa Caprock Permittees - Puuloa Area
Exhibit 4 - Puuloa Aquifer System
Exhibit 5 - Kapolei Aquifer System
Exhibit 6 - Puuloa Caprock Users Group Proposal

APPROVED FOR SUBMITTAL:

Michael D. Wilson, Chairperson

1. Dinsmore: love raw data that has not previously been submitted.
   Request add’l time to present & analyze data, may have effect on SY estimate.
   Campbell was helpful & won’t be in again.

2. Joy, H Prince: request that amendment to Resolution C be reconsidered (5 mgd compliance). Would in effect, be C at 15 mgd. Was hoping to manage aquifer system ceiling in performance standards.
   Mike: do scenarios 1 w/5 mgd, 1 w/another 5 mgd.

7. Steinberg: DHWW re: overpumping.
   Washdown, polymer, enhancement, injection.
   Long range projection is 2 mgd. (to come at 2 mgd).
   Land use projection 2 mgd. (to come at 5 mgd).
   Impacts for Barber Pt.
   13 decrease to 10 mgd.
### SCENARIO COMPARISONS

#### CENTRAL OAHU DEVELOPMENT PLAN AREA

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<td>130,526</td>
<td>186,350</td>
<td>55,824</td>
<td>43</td>
</tr>
<tr>
<td>Dispersed Development</td>
<td>130,526</td>
<td>184,444</td>
<td>53,918</td>
<td>41</td>
</tr>
<tr>
<td>Eva Employment</td>
<td>130,526</td>
<td>185,091</td>
<td>54,565</td>
<td>42</td>
</tr>
<tr>
<td>Eva &amp; Central Oahu Urban Centers</td>
<td>130,526</td>
<td>213,802</td>
<td>83,276</td>
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<tr>
<td>Current Trend</td>
<td>130,526</td>
<td>177,738</td>
<td>47,212</td>
<td>36</td>
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</tbody>
</table>

NOTE: Baseline forecast for 1990-2020 islandwide increase is 25%.

<table>
<thead>
<tr>
<th>Development Scenario</th>
<th>1990 Housing Units</th>
<th>2020 Housing Units</th>
<th>1990-2020 Increase</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive Eva</td>
<td>36,282</td>
<td>53,240</td>
<td>16,958</td>
<td>47</td>
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<tr>
<td>Dispersed Development</td>
<td>36,282</td>
<td>57,807</td>
<td>21,525</td>
<td>60</td>
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<tr>
<td>Eva Employment</td>
<td>36,282</td>
<td>58,118</td>
<td>21,836</td>
<td>60</td>
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<tr>
<td>Eva &amp; Central Oahu Urban Centers</td>
<td>36,282</td>
<td>68,006</td>
<td>31,724</td>
<td>86</td>
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<tr>
<td>Current Trend</td>
<td>36,282</td>
<td>55,728</td>
<td>19,446</td>
<td>54</td>
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</tbody>
</table>

NOTE: Baseline forecast for 1990-2020 islandwide increase is 43%.

#### Change in Resident Population

#### Change in Non-Construction Jobs
<table>
<thead>
<tr>
<th>(1) PERMITTEE</th>
<th>(2) WELL NAME (WELL NO.)</th>
<th>(3) DATE OF APPROVAL</th>
<th>(4) TYPE OF USE</th>
<th>(5) ALLOCATION</th>
<th>(6) LATEST 12-MAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hasako</td>
<td>EP 27A,27B,28,29 (1902-01)</td>
<td>12/16/92</td>
<td>Irrigation (Agric.)</td>
<td>2.660</td>
<td>0.000</td>
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<tr>
<td></td>
<td>EP 21 (2000-01)</td>
<td>12/16/92</td>
<td>Irrigation (Agric.)</td>
<td>2.080</td>
<td>0.000</td>
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<tr>
<td></td>
<td>EP 23 (2001-01)</td>
<td>12/16/92</td>
<td>Irrigation (Agric.)</td>
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<td>0.000</td>
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<tr>
<td>Hawaii Prince</td>
<td>EP 22 (1900-02)</td>
<td>10/19/88</td>
<td>Irrigation (G. Course)</td>
<td>0.900</td>
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<tr>
<td></td>
<td>EP 22 &amp; Wells 1 to 5 (1900-02, 1901-17 to 20, 1901-03)</td>
<td>7/13/94</td>
<td>Irrigation (G. Course)</td>
<td>0.129</td>
<td>1.049</td>
</tr>
<tr>
<td>Sogo Hawaii</td>
<td>Puulos Wells A &amp; B (1900-22 &amp; 1929-00)</td>
<td>2/13/91</td>
<td>Irrigation (G. Course)</td>
<td>0.100</td>
<td>0.000</td>
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<tr>
<td></td>
<td>Hasako No. 1 (1902-01)</td>
<td>7/13/94</td>
<td>Irrigation (G. Course, Landscape, Dust Control)</td>
<td>1.500</td>
<td>0.000</td>
</tr>
<tr>
<td>C&amp;C DWWM</td>
<td>Honokuli STP 1 &amp; 2 (1902-03 &amp; 04)</td>
<td>3/15/90</td>
<td>Industrial</td>
<td>0.500</td>
<td>0.992</td>
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<td>Geentry</td>
<td>Ewa Geentry (2001-02)</td>
<td>9/27/83</td>
<td>Irrigation (Park, Landscape)</td>
<td>0.080</td>
<td>0.000</td>
</tr>
<tr>
<td>Geentry</td>
<td>Geiger Park (2001-03)</td>
<td>7/13/94</td>
<td>Irrigation (Park)</td>
<td>0.030</td>
<td>0.014</td>
</tr>
<tr>
<td>Geentry</td>
<td>Sunrise Apt (2001-04)</td>
<td>7/13/94</td>
<td>Irrigation (Park, Landscape)</td>
<td>0.040</td>
<td>0.024</td>
</tr>
<tr>
<td>Geentry</td>
<td>Soda Creek III (2001-05)</td>
<td>7/13/94</td>
<td>Irrigation (Park, Landscape)</td>
<td>0.020</td>
<td>0.064</td>
</tr>
<tr>
<td>Palm Villa I Homeowners</td>
<td>Palm Villa I (2001-06)</td>
<td>7/13/89</td>
<td>Irrigation (Landscape)</td>
<td>0.080</td>
<td>0.016</td>
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<td>Arbors Homeowners</td>
<td>Arbors (2001-07)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.063</td>
<td>0.048</td>
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<td>Palm Villa II Homeowners</td>
<td>Palm Villa II (2001-08)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.048</td>
<td>0.071</td>
</tr>
<tr>
<td>Gentry</td>
<td>Pt. Weaver Apt (2001-09)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.023</td>
<td>0.020</td>
</tr>
<tr>
<td>Gentry</td>
<td>Geentry Area 24 (2001-10)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.022</td>
<td>UNUSED</td>
</tr>
<tr>
<td>Palm Court Homeowners</td>
<td>Palm Court 3 (2002-12)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.066</td>
<td>0.026</td>
</tr>
<tr>
<td>Gentry</td>
<td>Geentry G.C. (2002-15)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.130</td>
<td>UNUSED</td>
</tr>
<tr>
<td>U.S. Fish &amp; Wildlife</td>
<td>Honokuli Unit (2101-14)</td>
<td>10/27/93</td>
<td>Habitat Maintenance</td>
<td>0.216</td>
<td>1</td>
</tr>
<tr>
<td>TOTALS</td>
<td></td>
<td></td>
<td></td>
<td>15.177</td>
<td>2.836</td>
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</table>

EXHIBIT 3
## PUULOA AQUIFER SYSTEM

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PUULOA AQUIFER SYSTEM (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Yield Estimate</td>
<td>15,000</td>
</tr>
<tr>
<td>Less: Other Existing Permits</td>
<td>(shown in Exhibit 3)</td>
</tr>
<tr>
<td>Current Available Allocation</td>
<td>-2,170</td>
</tr>
<tr>
<td>Less: Requests for New Interim Permits</td>
<td></td>
</tr>
<tr>
<td>Hawaii Prince Golf Club</td>
<td></td>
</tr>
<tr>
<td>(1900-02, 17 to 20, 1901-03)</td>
<td>0.129</td>
</tr>
<tr>
<td>Gentry Co.</td>
<td></td>
</tr>
<tr>
<td>(2001-03)</td>
<td>0.030</td>
</tr>
<tr>
<td>(2001-04)</td>
<td>0.040</td>
</tr>
<tr>
<td>(2001-05)</td>
<td>0.020</td>
</tr>
<tr>
<td>(2001-09)</td>
<td>0.023</td>
</tr>
<tr>
<td>(2001-10)</td>
<td>0.022</td>
</tr>
<tr>
<td>(2002-15)</td>
<td>0.130</td>
</tr>
<tr>
<td>Haseko (Ewa), Inc. (1902-01)</td>
<td>1.500</td>
</tr>
<tr>
<td>Arbors Assoc. (2001-07)</td>
<td>0.063</td>
</tr>
<tr>
<td>Palm Villa II Assoc. (2001-08)</td>
<td>0.048</td>
</tr>
<tr>
<td>Palm Court Assoc. (2002-12)</td>
<td>0.066</td>
</tr>
<tr>
<td>Less: New Applications</td>
<td></td>
</tr>
<tr>
<td>Hawaii Prince Golf Club</td>
<td></td>
</tr>
<tr>
<td>(1900-02, 17 to 20, 1901-03)</td>
<td>0.371</td>
</tr>
<tr>
<td>Gentry Development Co. (2001-11)</td>
<td>0.172</td>
</tr>
<tr>
<td>Gentry Development Co. (2002-15)</td>
<td>0.560</td>
</tr>
<tr>
<td>Haseko (Ewa), Inc. (Ewa Marina)</td>
<td>*</td>
</tr>
<tr>
<td>Available Allocation</td>
<td>-5.344</td>
</tr>
</tbody>
</table>

* Proposed marina project will result in a permanent reduction in caprock storage capacity.

EXHIBIT 4
## KAPOLEI AQUIFER SYSTEM

<table>
<thead>
<tr>
<th>ITEM</th>
<th>KAPOLEI AQUIFER SYSTEM (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sustainable Yield Estimate</strong></td>
<td>5.000</td>
</tr>
<tr>
<td><strong>Less: Other Existing Permits</strong></td>
<td></td>
</tr>
<tr>
<td>Pu‘u Makakilo (1904-02)</td>
<td>-1.150</td>
</tr>
<tr>
<td><strong>Current Available Allocation</strong></td>
<td>3.850</td>
</tr>
<tr>
<td><strong>Less: Requests for New Interim Permits</strong></td>
<td></td>
</tr>
<tr>
<td>Campbell Estate (1905-08,10)</td>
<td>0.302</td>
</tr>
<tr>
<td>State HFDC (2003-04,07)</td>
<td>0.494</td>
</tr>
<tr>
<td>Kapolei People’s Inc. (2003-01,02,05)</td>
<td>1.000</td>
</tr>
<tr>
<td><strong>Less: New Applications</strong></td>
<td></td>
</tr>
<tr>
<td>(none)</td>
<td>-0.000</td>
</tr>
<tr>
<td><strong>Available Allocation</strong></td>
<td>2.054</td>
</tr>
</tbody>
</table>

EXHIBIT 5
1. The PCUG will prepare a non-potable master plan for the Puuloa Aquifer System which will include: a projection of all non-potable supply requirements; a management plan to optimize use of non-potable resources including treated wastewater effluent and the available supply of brackish groundwater; and a compilation of hydrologic data which will provide the basis for the proposed use of non-potable resources.

2. A draft of the non-potable master plan, as a work in progress, will be submitted in 90 days. In addition to a discussion of each of the master plan topics indicated above, this draft report will also include a recommended plan to manage water use over a proposed two-year interim period. The management plan at a minimum shall include the following:

   (a) An agreement among PCUG members to keep actual water use of the Puuloa Aquifer System below an amount jointly agreed to by the PCUG members and the CWRM. Actual water use shall be evaluated on a 12-month moving average basis.

   (b) An agreement among the PCUG members for the pro-rata participation in wastewater reuse by all PCUG members.

   (c) An agreement to allow new interim water uses by PCUG members as long as they are consistent with conditions (a) and (b) above.

3. The PCUG requests that the CWRM enter into agreements confirming that the interim 2-year period shall not be counted as part of a 4-year "use it or lose it" assessment by the CWRM.

4. The PCUG will form a steering committee to work directly with the City's Department of Wastewater Management on wastewater effluent reuse. Based on a preliminary assessment of the quantity and location of required non-potable supply, an evaluation of pipeline delivery of effluent treated to R-1 quality will be given the highest priority.

5. The PCUG believes that a more complete set of data is necessary in order to make a confident assessment of the Puuloa aquifer system's sustainable yield. PCUG members will collect and provide to the CWRM hydrologic data over and above that which is being submitted to the CWRM on a monthly basis as a requirement of its water use permits.
EXHIBIT 6
**OAHU DRINKING WATER PICTURE**

Groundwater Sources:

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developable Yield</td>
<td>415 mgd</td>
</tr>
<tr>
<td>Utilized</td>
<td>340 mgd</td>
</tr>
<tr>
<td>Available</td>
<td>75 mgd</td>
</tr>
</tbody>
</table>
OAHU DEMAND VS. SUPPLY

2020 Projected Demand 90 mgd

(Ewa, Central Oahu, Waianae, Honolulu)

Available Supply 75 mgd

DEFICIT -15 mgd
### OAHU 2020 DEMAND

**Forecasted Demand:**

<table>
<thead>
<tr>
<th>Source</th>
<th>Demand (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potable</td>
<td>56.5</td>
</tr>
<tr>
<td>Nonpotable</td>
<td>33.5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>90</strong></td>
</tr>
</tbody>
</table>

**Alternative Sources:**

<table>
<thead>
<tr>
<th>Source</th>
<th>Demand (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groundwater</td>
<td>75</td>
</tr>
<tr>
<td>Wastewater Effluent</td>
<td>110</td>
</tr>
<tr>
<td>Conservation</td>
<td>?</td>
</tr>
</tbody>
</table>
September 11, 1996

Commission on Water Resource Management
Department of Land and Natural resources
State of Hawaii

Re: In the matter of the Allocation Plan For Water Use Permits
In Response to Lower Sustainable Yield Estimate for the Puuloa Area
Ewa Caprock Ground Water Management Area, Oahu

Chairman Wilson and members of the State Water Commission:

My name is Jeff Dinsmore. I am a Vice President of Gentry Homes, Ltd., and I am here to testify on behalf of the Puuloa Caprock Users Group on the Commission On Water Resource Management’s Staff submittal on the above mentioned subject. I previously testified at the August 14 hearing for the PCUG and requested a 90 day extension to prepare and submit a draft nonpotable water master plan for the Puuloa Caprock area.

The Puuloa Caprock Users Group is in agreement with the Staff recommendations and would like to thank them for their effort. We are confident that a mutually beneficial plan can be prepared and implemented.

We do have one change to request of the staff recommendation. We would like to request that the deadline for the submittal of any additional data for consideration of the sustainable yield be extended from September 30, 1996 until December 18, 1996.

Thank you for your time and due consideration of our request. If you have any questions, I will do my best to answer them for you.

Sincerely,
Puuloa Caprock Users Group

[Signature]

Jeffrey C. Dinsmore
April 17, 1996

Rae M. Loui, Deputy Director
Commission on Water Resource Management
Kalanikou Building
1151 Punchbowl Street
Room 227
Honolulu, HI 96813

Dear Ms. Loui:

During the Water Commission meeting held on April 15, 1996, a Summary of Ewa Caprock Permitted Uses was distributed by your staff to various interested persons. By this letter, I offer a couple of corrections to the information included in that Summary with regard to permits held by HASEKO (Ewa), Inc.

First of all, the pertinent well name is EP-27, not EP-24.

Second, HASEKO holds two separate permits. One is an interim permit for 1.5 mgd for golf course, landscaping, and construction uses. The other is a permanent permit, transferred from Oahu Sugar to HASEKO, for 2.66 mgd for agricultural use.

I note that the March 13, 1996 Staff Submittal on the Ewa Caprock Sustainable Yield agenda item correctly identifies the two separate permits, although the holder of the permanent permit is still listed as Oahu Sugar.

I offer these corrections to avoid any confusion in the future. If you or your staff do not concur with the information I offer, I would appreciate notification as soon as possible so that we may clear up any discrepancies. You may contact Raymond S. Kanna or myself at 599-1444.

Sincerely,

Nelson W.G. Lee
Executive Vice President

Yvonne Izu, Esq.
Raymond S. Kanna
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 621
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

April 15, 1996
Honolulu, Oahu

REPORT ON PERMIT VIOLATIONS
Applicants for New Interim Water Use Permits
Ewa Caprock Ground Water Management Area, Oahu

APPLICANT(S):

(Well Nos. 1905-08,10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-04,07)
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 1900-02,17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10,11)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

(Well No. 2001-07)
The Arbors Association
91-920 La‘aulu St., #1G
Ewa Beach, HI 96706

LANDOWNER(S):

Same

Same

Same

Same

Same

Same

Item 10
(Well No. 2001-08)
Palm Villas II Association
91-1119 Mikohu St., #D
Ewa Beach, HI 96706

(Well No. 2002-12)
Palm Court Association
91-1019 Puaniu St., #25R
Ewa Beach, HI 96706

(Well No. 1902-01)
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

BACKGROUND:

On March 13, 1996, the Commission on Water Resource Management (Commission) deferred action on all pending requests to continue uses in the Ewa Caprock and directed the staff to submit a report describing permit violations in the Ewa Caprock. The Commission also directed staff to resolve the violations prior to Commission action on the requests for new interim water use permits.

A summary of the permit violations is shown in Table 1.
Table 1. Summary of Permit Violations

<table>
<thead>
<tr>
<th>APPLICANT/WELL NO.</th>
<th>NO PERMIT APPLICATION</th>
<th>WELL</th>
<th>PUMP</th>
<th>WATER USE</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>WCR</td>
<td>ELEV</td>
<td>AS-BUILT</td>
</tr>
<tr>
<td>Hawaii Prince</td>
<td></td>
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<td></td>
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<tr>
<td>1901-03</td>
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<tr>
<td>1900-02</td>
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<td>Gentry Development</td>
<td>WELL/PUMP**</td>
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</tr>
<tr>
<td>2001-03</td>
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<td>2003-01</td>
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<tr>
<td>2003-05</td>
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</tr>
<tr>
<td>2003-07</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Not a clear condition of the permit
** After-the-fact application for a pump installation permit received 3/13/96.

WCR: Well Completion Report
ELEV: Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
AS-BUILT: As-built sectional drawing of the well
PUMP TEST: Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.
PCR: (Permanent) Pump Installation Completion Report
AS-BUILT: As-built sectional drawing of the permanent pump installation
WUR: Water Use Report
OVER PUMPAGE: 12-month moving average withdrawals in excess of allocation

April 15, 1996
WELL CONSTRUCTION/PUMP INSTALLATION PERMIT VIOLATIONS:

The asterisk (*) denotes items that were not clear conditions of the permit, but are needed by the staff to carry out resource assessment and analytical work. In most cases, the lack of clarity resulted from the issuance of combined well construction/pump installation permits, which did not specifically require pump completion reports and as-built sectional drawings of the pump installation. The staff has addressed this problem by developing a new procedure for combined well construction/pump installation permits applications, whereby the staff will recommend that the Commission approve the issuance of the well construction permit and delegate to the Chairperson the authority to approve the issuance of the pump installation permit upon the Commission’s receipt of adequate pump test results and any other items that were required under the terms of the well construction permit.

Table 1 shows a number of wells under "Gentry Development" that have been transferred to individual homeowner’s associations. However, Gentry was the entity in control of the well at the time that the construction violations occurred and thus should be responsible for seeking after-the-fact permits and/or compliance with well/pump permit conditions. A similar condition exists for wells listed under "State HFDC", where three (3) of the wells have been transferred to Kapolei Peoples, Inc.

WATER USE REPORTING:

The frequency of reporting water data for Well No. 2001-03 is inconsistent. As of April 3, 1996, the staff is not in receipt of any reports for 1996. Section 13-168-7(b) HAR requires the owner or operator of any well to file a report "...on a regular monthly (calendar or work schedule) basis to the commission on forms provided by the commission on or before the end of the month following the month for which water usage is to be reported."

At present, water data are being reported for Well No. 2001-05 on a regular basis; however, as of April 3, 1996, a report for January 1996 has not been submitted, and there are no reports for March-June 1995.

Reports for Well No. 2002-12 are inadequate, ie for the January 1996 report, the beginning of the period for which the amount is reported is unknown. In addition, when withdrawals are zero, monthly reports should still be submitted with the "Date Measurement(s) Taken" field filled in. A sample of the Commission’s official report form is shown in Exhibit 1.

OVERPUMPAGE:

Table 1 also shows that withdrawals at the Hawaii Prince wells (Well Nos. 1900-02, 17 to 20 & 1901-03) and two Gentry-developed wells (Well Nos. 2001-05 and 2001-08) are in excess of the respective allocations. The graphs of reported monthly water use and computed 12-month moving averages are shown in Exhibits 2 to 4. The water use permit for Well No. 2001-08 has been transferred to Palm Villa II Homeowners Association. The current water use permittees should be held responsible for any violations related to usage and water use reporting.
An issue is whether the overpumpage should be viewed as an indication of underestimated water needs or whether enforcement action is more appropriate. The Commission has been approving interim permits for new uses pending verification of the actual quantity of water needed. Section 174C-50(g) provides "In the final determination, the Commission may increase or reduce the amount initially granted the permittee".

With regard to pumpage at the Hawaii Prince wells, the extent to which the withdrawals have exceeded the allocation is not certain. Hawaii Prince has been estimating their water use on the basis of pumping times and pump capacities. The pump in EP 22 (Well No. 1900-02), Hawaii Prince's major pumping source, is a very old OSCo pump that is most likely running at less than 100% efficiency. Therefore, reported estimated pumpage is probably greater than actual pumpage. The installation of flowmeters in each of the Hawaii Prince wells was completed on February 29, 1996. A review of actual water use in relation to the allocation should be done in light of metered pumpage data.

**SUMMARY/CONCLUSION:**

Letters have been sent to each of the entities listed in Table 1, notifying them of their lack of compliance with permit conditions and requesting the submittal of other items and documents that are needed by the Commission but were not clear conditions of the permit. The letters establish a May 15, 1996 deadline for compliance.

The requests for continued uses will be resubmitted for Commission action once all violations have been resolved and following the public hearing to modify the Water Resources and Protection Plan to include the Ewa Caprock as a hydrologic unit and to establish a sustainable yield for the caprock aquifer system. We are planning to hold the public hearing in July 1996.

Respectfully submitted,

 Rae M. Loui
Deputy Director

Exhibit(s): 1 (Monthly Water Use Report Form)
2 (Graph of Monthly Water Use for Well No. 2001-05)
3 (Graph of Monthly Water Use for Well No. 2001-08)
4 (Graph of Monthly Water Use for Well Nos. 1900-02, 17 to 20 & 1901-03)

APPROVED FOR SUBMITTAL:

Michael D. Wilson, Chairperson
State of Hawaii
Department of Land and Natural Resources
COMMISSION ON WATER RESOURCE MANAGEMENT

MONTHLY GROUNDWATER USE REPORT FOR

GENTRY DEVELOPMENT CORP.
P.O. BOX 295
HONOLULU, HI 96809

Month of __________, 19__

Date Measurement(s) Taken

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly groundwater use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 621, Honolulu HI 98809. For assistance, please call 587-0265 (Oahu only) or 1-800-468-4644 (neighbor islands).

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Water Level (ft. above mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-10</td>
<td>GENTRY AREA 24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other comments or additional information:

Submitted by (print) ____________________________ Title ____________________________
Signature ____________________________ Date ____________________________

EXHIBIT 'I
Ewa By Gentry Community Association
Soda Creek III (Well No. 2001-05)

EXHIBIT 2

monthly values — WUP

CI (mg/l) — 12-MAV
Hawaii Prince G.C. Combined Pumpage
(Well Nos. 1900-02,17 to 20;1901-03)

EXHIBIT 4

pumpage (mgd)

JAN 93           JAN 94           JAN 95           JAN 96
date (latest data 12/95)

- 12-MAV

--- WUP

. combined monthly withdrawal
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Millilani Street, Suite 810  
Honolulu, HI 96813  

Dear Mr. Lee:

Thank you for your letter of October 12, 1995, notifying the Commission on Water Resource Management (Commission) that no pumpage of Well No. 1902-01 has taken place due to electrical power constraints. We will look forward to receiving regular monthly reports of pumpage, water levels and chlorides once the power is connected.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI  
Deputy Director

LN:ss
October 12, 1995

Ms. Rae M. Loui, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Loui:

Monthly Water Use Reporting for Well 1902-01
Ewa Caprock Groundwater Management Area, Oahu

In July 1994, the Commission on Water Resource Management (CWRM) granted a 1.5 MGD Water Use Permit from Well 1902-01 (also known as EP 27) to HASEKO (Ewa), Inc. for golf course irrigation and dust control. At that time, the remaining 2.66 MGD allocation for the well was retained by Oahu Sugar Company (OSCO) for sugarcane cultivation. OSCO’s active use of the facility ended in November 1994. Shortly after that, OSCO cut off electric power from its grid to the four well pumps. In June 1995, CWRM transferred the 2.66 MGD Water Use Permit for agricultural use from OSCO to HASEKO.

Since the facility was de-energized, HASEKO has been working to provide electrical power to the pumps, to put agricultural tenants on the property, and to obtain the necessary permits to proceed with the golf course’s construction. Up to now, no pumpage of Well 1902-01 by HASEKO for either golf course or agricultural use has taken place. As soon as the power is connected, HASEKO will begin filing its monthly water use report.

I understand this will satisfactorily meet HASEKO’s monthly reporting requirement under Administrative Rule 13-168-7. If this understanding is erroneous, please let me know. If you have any questions or require additional information, please contact Ray Kanna at 599-1444.

Sincerely,

Nelson W.G. Lee
Executive Vice President
MINUTES
FOR THE MEETING OF THE
COMMISSION ON WATER RESOURCE MANAGEMENT

DATE: March 13, 1996
TIME: 9:00 a.m.
PLACE: Honolulu Int'l Airport
       Interisland Terminal Conference Center, 7th Floor

Chairperson Michael Wilson called the meeting of the Commission on Water Resource Management to order at 9:15 a.m.

The following were in attendance:

MEMBERS: Mr. Michael Wilson
          Mr. Richard Cox
          Dr. Lawrence Milke
          Mr. Robert Girald
          Mr. David Nobriga
          Mr. Herbert Richards, Jr.

STAFF: Ms. Rae Loui
       Ms. Lyann Mizuno
       Mr. Roy Hardy
       Mr. Eric Hirano
       Mr. Glenn Bauer
       Ms. Lenore Nakama
       Mr. Charley Ice
       Ms. Janis Uwaine

COUNSEL: Mr. William Tam

OTHERS:

Alan Suwa
James Kumagai
Piikea Miller
Bob Nakata
Ryan Inata

Yvonne Izu
Kathleen Hoff
Lola N. Mench
Stephen Thomas
Raymond Kanna

Garrick Iwamuro
E.A. Ho'oiipo Martin
Yukie Y. Ohashi
Tom Nance

All written testimonies submitted at the meeting are filed in the Commission office and are available for review by interested parties. The items were not taken in the order posted on the agenda.

1. MINUTES OF THE FEBRUARY 21, 1996 MEETING

MOTION: (NOBRIGA/RICHARDS)

To approve the minutes.

UNANIMOUSLY APPROVED.

2. OLD BUSINESS/ANNOUNCEMENTS

Deputy Director Rae Loui announced that there would be a hearing on Friday, March 15, 1996 on Maui regarding the following:
ORDER TO SHOW CAUSE TO THE COUNTY OF MAUI WHY:

1. A WATER EMERGENCY SHOULD NOT BE DECLARED FOR THE IAQ AQUIFER SYSTEM

2. THE ACTIONS NECESSARY TO MEET THE EMERGENCY SHOULD NOT BE ORDERED

3. REQUEST TO SCHEDULE A PUBLIC HEARING TO MODIFY WATER RESOURCES AND PROTECTION PLAN, SUSTAINABLE YIELD ESTIMATE FOR EWA CAPROCK AQUIFER SYSTEM

GENTRY DEVELOPMENT COMPANY, APPLICATION FOR A WATER USE PERMIT, APPLICATION FOR WELL PERMITS, GENTRY AREA 26 WELL (WELL NO. 2001-11), WELL CONSTRUCTION: 19-INCH DIAMETER, 58-FOOT DEEP WELL, PUMP INSTALLATION: 500 GPM PUMP, WATER USE: FUTURE NONPOTABLE URBAN USE FOR 0.172 MGD

APPLICATIONS FOR WATER USE PERMITS, REQUESTS TO CONTINUE NONPOTABLE URBAN USES, EWA GROUND WATER MANAGEMENT AREA, OAHU

(WELL NOS. 1905-08.10), THE ESTATE OF JAMES CAMPBELL

(WELL NOS. 2003-01,02,04,05,07), STATE OF HAWAII, HOUSING FINANCE & DEVELOPMENT CORP.

(WELL NOS. 1900-02,17 TO 20 & 1901-03), HAWAII PRINCE GOLF CLUB

(WELL NOS. 2001-03,04,05,09,10,11 & 2002-15), GENTRY DEVELOPMENT CO.

(WELL NO. 2001-07), THE ARBORS ASSOCIATION

(WELL NO. 2001-08), PALM VILLAS II ASSOCIATION

(WELL NO. 2002-12), PALM COURT ASSOCIATION

(WELL NO. 1902-01), HASEKO (EWA), INC.

PRESENTATION OF SUBMITTAL: Deputy Director Rae Loui and Glenn Bauer

STAFF'S RECOMMENDATION:

Staff requested to amend the recommendation as follows:

1. The Commission directs staff to submit the preliminary draft report for a peer review and to finalize the report in light of any review comments that may be received. The final report should include recommendations on further delineation of aquifer systems within the Ewa Caprock Aquifer and the possible adoption of a sustainable yield estimate(s).
2. The Commission authorizes staff to schedule a public hearing to modify the Water Resources and Protection Plan in accordance with HRS 174C-31(m). This hearing must be held on Oahu and must be noticed at least 90 days in advance. Permittees shall be mailed a copy of the notice.

3. The Commission directs staff to notify existing water use permittees and applicants for new water uses in the Ewa Caprock Aquifer System that the applications for continued or future use will be deferred for a period of approximately six (6) months until a decision is made on the possible establishment of a sustainable yield estimate in the Water Resources Protection Plan.

4. Direct staff to resolve violations prior to Commission action on requests for continued uses.

5. The Commission adopts the following policy statement on water reclamation:

   It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

   I. Ewa Caprock

   Recognizing that reclaimed water is a valuable resource in the Ewa Plain and reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

TESTIMONIES:

James Kumagai, consultant for the Commission on Water Resource Management was available to answer questions.

Deputy Director Rae Loui stated that a report on the progress of the recharge trench would be submitted to the Commission at the next Oahu Commission meeting.

MOTION: (COX/GIRALD)

To approve staff's recommendation as amended.

UNANIMOUSLY APPROVED AS AMENDED.

Chairperson Wilson directed Deputy Director Rae Loui to send a letter informing the Ewa caprock users that there may not be enough water to go around at a certain time and to stress to the users that it is important for them to work with the City and County and also to indicate to the City and County that we are anxious to help them in working with the users. In the event that the users and the City and County cannot work together to come up with a solution, then the Commission will have to step in and institute a solution.

The Commission requested staff to submit a report on the permit violations in the Ewa Caprock.
The Commission also requested a report on current allocations and potential pumpages in the caprock.

4. PACIFIC ATLAS (HAWAI'I) INC., DEFERRAL--APPLICATION FOR A WATER USE PERMIT, BAY VIEW NOS. 1 TO 5 WELLS (WELL NOS. 2447-02 TO 06), TMK 4-5-30:37, FUTURE IRRIGATION USE FOR 0.208 MGD, KOOLAUPOKO GROUND WATER MANAGEMENT AREA, OAHU

PRESENTATION OF SUBMITTAL: Ms. Lyann Mizuno

Staff amended the second paragraph under the Background section of the submittal as follows:

On October 5, 1995, pump installation permit applications were received from Pacific Atlas (Hawaii), Inc. for Bay View Nos. 1 to 5 (Well Nos. 2447-02 to 06).

STAFF'S RECOMMENDATION:

Staff recommended that the Commission:

1. Defer action on the water use permit application for Bay View Nos. 1 to 5 (Well Nos. 2447-02 to 06) until the next regular meeting on Oahu.

2. Direct staff to report to the Commission on the applicant's compliance with the well construction permit conditions, along with recommendations on the imposition of fines, if any. This report shall be submitted prior to recommendations for Commission action on the applications for the pump installation permits, the after-the-fact stream channel alteration permit, and the water use permit.

TESTIMONY BY APPLICANT:

Mr. Tom Nance, project engineer, stated that they pumped each of the wells for just two days. There is an effect on the other wells that is noticeable and in that time period they did not see any affect on the stream. He also stated that there may be one over a longer period of time, although he does not think it will happen but he is willing to run more tests. He further stated that these are very small capacity wells with a cost of around $15,000 each and a seven day pump test would double their cost. He requested that they put the permanent pumps in the wells and pump them simultaneously, which is how they would be operated, and run the aquifer test in that manner. They would pump three of the five wells over a seven day period, producing a little more than the water use permit that they are asking for and they would monitor all the wells, including the two that weren't pumped. They would also monitor several locations on Kawa Stream and would get all the information that they would need. He further testified that the grassing begins next week. The only source of water that they have is a temporary connection to the Board of Water Supply and they received notice that they need to get off. He asked that the Commission consider allowing the permanent pumps to be installed for testing and grassing. Therefore, he requested that the Commission allow them to go ahead and
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 621
HONOLULU, HAWAI'I 96808

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

March 13, 1996
Honolulu, Oahu

REQUEST TO SCHEDULE A PUBLIC HEARING
TO MODIFY WATER RESOURCES AND PROTECTION PLAN
Sustainable Yield Estimate for
Ewa Caprock Aquifer System

Gentry Development Company
APPLICATION FOR A WATER USE PERMIT
APPLICATION FOR WELL PERMITS
Gentry Area 26 Well (Well No. 2001-11)
Well Construction: 19-inch Diameter, 58-foot Deep Well
Pump installation: 500 gpm Pump
Water Use: Future Nonpotable Urban Use for 0.172 mgd

APPLICATIONS FOR WATER USE PERMITS
Requests to Continue Nonpotable Urban Uses
Ewa Ground Water Management Area, Oahu

APPLICANT(S):
(Well Nos. 1905-08,10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-01,02,04,05,07)
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

LANDOWNER(S):
Same

Same

Item 3
Staff Submittal

March 13, 1996

(Well Nos. 1900-02,17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10,11 & 2002-15)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

(Well No. 2001-07)
The Arbors Association
91-920 La'aulu St., #1G
Ewa Beach, HI 96706

(Well No. 2001-08)
Palm Villas II Association
91-1119 Mikohu St., #D
Ewa Beach, HI 96706

(Well No. 2002-12)
Palm Court Association
91-1019 Puaniu St., #25R
Ewa Beach, HI 96706

(Well No. 1902-01)
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

BACKGROUND:

In 1990, the Commission on Water Resource Management (Commission) adopted the Water Resources and Protection Plan (Plan). The Plan included, as required by HRS 174C-31(c), "hydrologic units and their characteristics, including the quantity and quality of available resource...". The Plan did not include the brackish Ewa Caprock Aquifer as a hydrologic unit (Exhibit 1).

In the 1988-1992 timeframe, Ewa Caprock water use permits totalling 19.524 million gallons per day (mgd) were awarded mainly to existing irrigation uses (eg. Oahu Sugar Co.). Other existing water use permits totaled 39.608 mgd for various salt water and highly brackish to saline water uses (chlorides > 1,000 MG/L).
On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer and designated the aquifer as a water management area (Exhibit 1). Due to uncertainties regarding the aquifer's sustainable yield, the Commission did not adopt a sustainable yield estimate for the aquifer.

On March 17, 1993, the Commission deferred action on pending applications for water use permits in the Ewa Caprock Aquifer to provide additional time for the public to review the proposed permits and issues related to water use permit processing.

On April 28, 1993, to satisfy the needs of new developments in the Kapolei and Puuloa areas of the caprock, applicants were awarded interim water use permits with a specified duration of one year. Special conditions were attached to each interim permit; these are shown in Exhibit 2.

On May 18, 1994, the Commission deferred action on requests for new interim permits to continue nonpotable urban uses to provide applicants with an additional thirty (30) days to comply with the data reporting requirement of the expired interim permits. In order for the Commission to track the behavior and response of aquifers in designated ground water management areas, all water use permits are conditioned on regular monthly reporting of pumpage, chlorides, water levels, and water temperatures. Water use reporting is required from all ground and surface water users statewide in accordance with §13-168-7 HAR.

On July 13, 1994, the Commission awarded new interim permits, valid for one year, for the above sources (excluding Well Nos. 2001-10 & 11). The special conditions of the new interim permits are shown in Exhibit 3.

On January 25, 1995, an interim water use permit was issued to Gentry Development Corp. for a new source to supply the Ewa by Gentry developments (Well No. 2001-10). The duration of this permit was for less than one year to be consistent with all other interim permits set to expire on July 13, 1995.

At the July 5, 1995 Commission meeting at Honokaa, Hawaii, the Commission voted to extend the duration of the interim permits that were due to expire on July 13, 1995, to allow decision-making on these requests to be made on Oahu. Requests for new water use permits to continue ground water uses after the July 12, 1995 expiration date have been received from each of the above applicants. Hawaii Prince has requested that their interim permitted use be increased by 0.371 mgd to bring their total interim allocation to 0.5 mgd.

On August 25, 1995, Gentry Development Company submitted applications for new well construction/pump installation and water use permits for Gentry Area 26 Well (Well No. 2001-11) for future nonpotable urban use for 171,600 gpd. At the January 24, 1996 Commission meeting in Wailuku, Maui, action on the water use permit application was deferred to the Commission's next regular meeting on Oahu.
Staff Submittal

On February 21, 1996, the Commission approved the staff's recommendation to again defer action on the applications for Well No. 2001-11 pending the staff's review and analysis of ground water conditions in the Ewa Caprock Aquifer.

ANALYTICAL WORK:

The Ewa Caprock Aquifer is currently undergoing a period of change in response to the large-scale modifications in land and water use as sugarcane is replaced by urban developments. There has been much effort involved in modelling the behavior of the caprock aquifer. In an effort to better understand the existing and historical data upon which assessments of Ewa Caprock Aquifer dynamics are based, the available historical data from basal and caprock wells that were used for sugarcane irrigation supply were compiled and analyzed by staff. In addition, the staff has established a monitoring network and has been collecting ground water data at Oahu Sugar Company (OSCo) and private wells since April 1994. The primary purpose of sampling is to provide baseline data that can measure changes to the caprock aquifer over time.

A preliminary draft report of this analysis is submitted herewith as Exhibit 4. The major preliminary conclusions drawn in the draft report include recommendations for:

1. A sustainable yield of less than 10 mgd in the Puuloa area and less than 5 mgd in the Kapolei area. (Exhibits 5 and 6 show the current allocations and pending requests for ground water in the Puuloa and Kapolei areas.)

2. Reduction in permitted uses, unless there is a drastic change to the inflow of ground water to the caprock.

3. Adoption of a "go slow" approach to new wells in the Puuloa region.

4. Further division of the caprock into smaller management areas.

WATER USE PERMITS:

One condition that new water use permit applications must meet is that the use: "can be accommodated with the available water source..." §174C-49(a) HRS. An estimate of sustainable yield is critical to this determination.

In light of the staff's recent analysis, which recommends a sustainable yield that is considerably less than current permitted uses, the Commission should defer action on new use applications pending 1) a final draft report, revised subsequent to peer review, and 2) incorporation of the Ewa Caprock Aquifer in the Water Resources and Protection Plan (in the event that the final report recommends adoption of a sustainable yield for the caprock aquifer). Pursuant to §174C-31(m), a public hearing must be held to modify the Water Resources and Protection Plan. Staff hopes to hold the public hearing by July 1996.
Possible violations are another issue with the interim water use permits in the caprock. There are possibly twenty (20) violations which range from unpermitted well construction and pump installations to noncompliance with approved permit conditions concerning all permittees to differing degrees. The staff is in the process of identifying potential violations for each well listed above and will attempt to resolve these issues with the applicants.

With regard to well construction permit conditions for wells that have been transferred to another permittee, it is unclear who should be responsible for compliance. For example, pumps have been installed in a number of the Gentry wells without an application or approval. Some of these wells have since been transferred to individual homeowner's associations. Should the homeowner's association be responsible for seeking an after-the-fact permit, or should the entity who was in control of the well at the time of the violation be responsible?

NON-POTABLE WATER MASTER PLAN:

The Planning Department, City and County of Honolulu, is in the process of revising the Development Plans for Ewa and Central Oahu. The draft plan shows a projected population increase from 130,526 in 1990 to 185,091 in 2020. This corresponds to a 42% increase in population for the area. A 60% increase in housing units over the same time period is projected: from 36,262 units in 1990 to 58,118 units in 2020 (for Ewa Employment and Dispersed Residential; Exhibit 7). This will result in an unquantified (as yet) but certain increase in nonpotable water needs.

To address the expected increase in nonpotable water demand for urban uses, the Commission and the City Department of Wastewater Management hired a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. The plan recommends construction of a demonstration recharge trench in the Ewa Caprock using reclaimed water. There are many issues regarding the use of reclaimed water. An entity is needed to address and resolve these issues. Staff has been discussing the feasibility and potential application of the recharge trench proposed by our consultant as a means by which to ensure the future viability of the nonpotable Ewa Caprock Aquifer with key personnel from the Department of Health, City Department of Wastewater Management, City Planning Department, and the Board of Water Supply. The consensus is that a water reclamation program should move forward, and the recharge trench is a good first step.

It is recommended that the Commission adopt a reclaimed water policy statement, which specifically addresses only the Ewa Caprock, but may include other areas in the future. The policy statement should recognize reclaimed water as a valuable water resource. A policy statement is also needed to address the concerns of the Department of Health regarding contamination of potable water resources. Specific language is suggested in the recommendation section below.
RECOMMENDATIONS:

The staff recommends the following:

1. The Commission directs staff to submit the preliminary draft report for a peer review and to finalize the report in light of any review comments that may be received. The final report should include recommendations on further delineation of aquifer systems within the Ewa Caprock Aquifer and the possible adoption of a sustainable yield estimate(s).

2. The Commission authorizes staff to schedule a public hearing to modify the Water Resources and Protection Plan in accordance with HRS 174C-31(m). This hearing must be held on Oahu and must be noticed at least 90 days in advance. Permittees shall be mailed a copy of the notice.

3. The Commission directs staff to notify existing water use permittees and applicants for new water uses in the Ewa Caprock Aquifer System that the applications for continued or future use will be deferred for a period of approximately six (6) months until a decision is made on the possible establishment of a sustainable yield estimate in the Water Resources Protection Plan.

4. Direct staff to resolve violations prior to Commission action on requests for continued uses.
5. The Commission adopts the following policy statement on water reclamation:

It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

1. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

Respectfully submitted,

W. Pay Hardy

for RAE M. LOUI
Deputy Director

Attachments

APPROVED FOR SUBMITTAL:

Michael D. Wilson, Chairperson
Chairperson and Members  
Commission on Water Resource Management  
April 28, 1993

Special Conditions  
Ewa Caprock Temporary Water Use Permits

1. The temporary permits shall be valid for one (1) year from its approval date (April 28, 1994).

2. Quantities of allocations for each applicant are those calculated in Exhibit 3 for 1993 under the additional required allocation column. The pending applications which have no new or negative additional requirements are denied.

3. Each applicant’s allocation shall be for the cumulative withdrawals from the corresponding well sources specified by each applicant in Exhibit 2, except for Gentry Pacific’s well sources. Staff will be working with Gentry to associate water use permits for each well with each project individually within their total required allocation as shown in Exhibit 3.

4. Each applicant’s allocation shall be used only for the corresponding uses specified by each applicant in Exhibit 3.

5. Within one (1) year, the applicants shall jointly submit a plan for the conversion to an alternative non-potable source other than the Ewa Caprock Aquifer. This plan shall include the applicant’s intentions of funding the actual development of the alternative non-potable source.

6. Within sixty (60) days after approval, each applicant shall submit a water conservation plan or program according to the conditions in Attachment C.

7. The applicants shall continue to actively participate in the continuing development of the Ewa Caprock Regional Plan and its two main components which shall be coordinated by the Commission on Water Resource Management.

8. The applicants must actively participate in generating more information to show the utility of the caprock source in the absence of OSCo. recharge irrigation over the caprock and the complete absence of OSCo. irrigation in the Pearl Harbor area.

9. Temporary permits shall not be renewed if any of the above is not provided or followed.

EXHIBIT 2
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.
   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.
   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 2
5. Require applicants cooperate with the Commission’s initiative in the development of the Nonpotable Water Master Plan for Central and Leeward Oahu.

6. Require that all temporary permits be subject to the standard conditions of a water use permit listed in Attachment B and the Conservation conditions listed in Attachment C.

CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:

      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:

      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 3
EWA CAPROCK AQUIFER

Description of the Caprock Aquifer

The Ewa Plain caprock is a thick wedge of interbedded marine and terrestrial sediments that were deposited on the flanks of the Koolau and Waianae volcanoes during sea level changes and isostatic subsidence of Oahu during the Pleistocene ice ages. At the coast this sequence is greater than 1,000 feet thick (Stearns and Chamberlain, 1967). Inland, the sediments thin and pinch out against weathered lava flows.

The primary caprock aquifer is the highly permeable upper coralline limestone layer (referred to as "Limestone Aquifer 1" in Report R-79). The limestone layer continues offshore, but inland contacts alluvial sediments (Mink, 1989). Ground water within the aquifer is unconfined with a water level only several feet above sea level. The general ground water gradient is toward the coast.

Below this limestone layer, and found throughout the Ewa Plain, is a ubiquitous brown clay layer that acts as a bottom (aquiclude) to the coral aquifer. The clay layer is deeper at the coast than inland. Therefore, near the coast the brackish ground water floats on saline water as a Ghyben-Herzberg lens, but inland the brown clay truncates the salt water. Below the clay are other coral, sand, and mud deposits that contain very saline water. All plantation caprock wells and all new wells exploit the upper limestone aquifer. Alluvial ground water may be available in the Honouliuli area. However, developing alluvial water is not as easy as from coral due to the generally lower permeability of alluvium.

Prior to sugar cultivation, the caprock received a steady flux of ground water from natural leakage from the Koolau and Waianae basal aquifers, intermittent recharge from rainfall, and from occasional large storms which allowed dry streams, such as Kaloi Gulch, to flow to the Ewa Plain. The amount of leakage into the mauka caprock boundary is dependent upon the height of the water table in the basalt. When the first artesian well was drilled near Honouliuli in 1879 ground water rose to an estimated height of 32 feet msl (Cox, 1981, p. 55). West of Honouliuli the original ground water level in the Waianae aquifer would have been about 10 feet less (Mink, 1980, p.37). The demise of sugar recharge into the caprock aquifer is similar to pre-sugar days, except that the amount of natural leakage is much less due to the reduction of water levels in the basal aquifers.

Because of Ewa Plain's land use history, CWRM Report R-79 (Mink, 1989) divided the caprock into five broad areas: 1) Honouliuli; 2) Puuloa; 3) Kapolei; 4) BPNAS; and 5) Malakole. Honouliuli and Kapolei areas essentially overlie alluvium, while Puuloa, BPNAS, and Malakole areas are composed essentially of
coral limestone. However, for convenience of management, Honouliuli-Puuloa is considered to be a single region as are Kapolei-BPNAS and Malakole. Though in essence, the upper aquifers are hydraulically connected, and there may be only a weak connection between this aquifer and the lower ones.

History of Ewa Caprock Aquifer Development

The Ewa Plain has been irrigated with ground water since 1890. By 1930, Ewa Plantation had drilled 70 artesian basal wells (clustered as pumping batteries) through the Ewa Plain caprock sediments to irrigate cane lands makai of Farrington Highway (Stearns and Vaksvik, 1935). From 1930-35, five shallow wells (EP Pumps 20-24) were dug into the Ewa caprock to produce more irrigation water. All of them penetrated a shallow coral aquifer and were capable of producing large quantities of irrigation water. Later, other caprock sources were brought on line (EP Pumps 26, 27, 28, 29; EP Pump 30; and EP Pump 31). The accompanying map shows the location of Ewa Plantation basal and caprock pumps.

When the shallow caprock wells were constructed, they pumped brackish ground water that originated primarily from basal return irrigation water. Consequently, the caprock water mixed with the artesian basal water already irrigating the region.

Figures 1-3 illustrate the chloride and pumpage history of the Ewa Plantation's basal sources. Pumpage includes total draft from the Koolau Aquifer (excluding EP Pump 10-12), and well battery pumpage. For convenience, water quality from the various pump batteries are shown separately. Figure 1 presents the most saline of the sources. EP Pumps 1 and 9 probably applied all of its water in the vicinity of Ewa Mill and near the first caprock sources. These batteries had deep wells that were drilled into the upper transition zone. To improve quality some were plugged back with cement, but all were abandoned and sealed by 1950. Figures 2 and 3 show the marginal quality and potable quality sources respectively.

The freshest source, EP Pump 15, 16, was recommended by Stearns (Stearns and Vaksvik, 1935, p. 460) as a way to freshen up the limestone aquifer. He noted that chloride concentrations in the basal sources had approached high levels and that pumpage from the new caprock wells would increase chloride concentrations in the coral aquifer by recirculating irrigation water. Evapotranspiration by sugar cane concentrated the salts in the return water. Construction of EP Pump 15, 16 began in 1937 and it was put on-line to irrigate cane fields around 1939 or 1940.

Figure 4 shows initial (first 10 years) conditions in the caprock when the shallow wells were first constructed. Average yearly pumpage was about 11 mgd, while seasonal variations ranged from less than 5 mgd to more than 15 mgd. Water quality varied slightly with pumpage and with the seasonal variation of applied
basal water. Though Stearns mentioned (1935, p. 460) that much of the applied basal water had chlorides as high as 700± mg/l (and higher), Figure 4 shows that the caprock sources range between 700± mg/l to 1,000± mg/l.

Figure 5 presents the history of pumpage and chlorides for all caprock sources utilized by Ewa Plantation and Oahu Sugar Company (OSCo). Unfortunately there are missing monthly pumpage data between 1940 and 1963. The estimated average of 12 mgd is from CWRM Report R-79 (Mink, 1989). The graph does show a significant rise in chlorides for all caprock sources during the 1940's. Until the 1970's the average imported amount of Koolau basal water was 60-70 mgd. After 1981, the average amount dropped to less than 50 mgd.

CWRM Report R-88 entitled, Drought in Hawaii, indicates that the period from 1940-1954 was dry, and that "drought" was reported to be moderate to extreme. Though the data do not overlap, increased pumpage from artesian, and probably the caprock wells, contributed to the rise in chloride concentration around 1947 as seen in Figure 5. After EP Pumps 1 and 9 were abandoned and sealed, fresher basal water was used to irrigate Ewa cane lands. The result was a wholesale freshening of the caprock aquifer from the mid 1950's to the mid 1970's.

The rise in caprock chloride concentration beginning in the mid 1970's was due to several factors: 1) an increase in caprock well pumpage from 20 mgd to 30 mgd; 2) continued use of marginal quality basal water on lands near Ewa Mill and Fort Weaver Road; 3) several "extreme drought" periods throughout the 1970's reported in R-88; and 4) switching from furrow-irrigated cane to drip-irrigated cane in the mid 1970's to early 1980's (Hugh Morita, personal communication, 1996).

When OSCo took over from Ewa Plantation around 1970, they may have operated the irrigation system differently. Hugh Morita (personal communication, 1996) said that EP Pumps 3 and 7 supplied water to Field 57, which is mauka of EP Pump 23. From here the water split, some was piped to the EP 23 distribution system and the remainder was sent towards Ewa Mill. All of this water irrigated fields growing over the coral aquifer. EP Pumps 4 and 6 sent water west to a ditch system that runs at elevation 120± feet msl. EP Pump 5 supplied water to a ditch at elevation 160± feet msl. EP Pump 2 and Pumps 15 and 16 supplied water to cane in the Honouliuli area. All of this water irrigated fields growing on the alluvium. EP Pump 8 was for domestic use only.

Examination of Figures 2 and 3 will provide approximate 50-50 mixes of artesian water. For example during the last 15 years, Pumps 3 and 7 give a 50-50 mix of 500 mg/l chloride, while Pumps 4 and 6 show a mix of about 400 mg/l. The actual mix would be weighted to the pump which supplies the greatest proportion of water.
Report R-79 utilized a single cell mixing model to calculate ground water flows and caprock water chloride concentrations. The model calculated a steady-state inflow of return water and natural leakage for 1930 at 15 mgd. For the drip irrigation period between 1982-87 the model still assumes a 15 mgd inflow of ground water with a quality of 550 mg/l. The model calculated a steady-state mix of 1226 mg/l for water pumped from the caprock aquifer. Mink (1989) estimates that 4 mgd of the 15 mgd was due to natural leakage, and 11 mgd was return irrigation water.

Since the late 1980's, Ewa Plain land use changes occurred rapidly as many cane fields were replaced by golf courses and housing developments. Consequently, the amount and location of applied irrigation water changed considerably. By November 1994 all irrigation to Ewa Plain cane fields had ceased and all O'SCo caprock sources stopped pumping (except EP Pump 22). This action reduced the average 1994 pumpage from the caprock aquifer in the Puuloa area from 17 mgd to 3 mgd, and a portion of irrigation water ceased returning to the caprock aquifer.

Periods of Chloride Equilibrium

Examination of Figure 5 shows that only two periods of relative chloride stability exist in the record. The first is from 1930 to about 1940, and the second is from 1952 to approximately 1970. These intervals represent periods of stable pumping, acreage, and irrigation methods. The chloride quality of the mixture of the applied basal water (Figures 1-3) was relatively stable during the early 1930's, and again between 1952 to 1970. Chlorides in the caprock wells rose in the early 1940’s when water quality in EP Pumps 1 and 9 worsened.

All other periods in the record that show rising (1940-1949; 1975-present) or falling (1950-1952) chloride values are during times of non-equilibrium when a major change took place such as caprock pumpage, irrigation method, acreage, or quality of applied basal water.

It is interesting to note from Figure 5 that even after sugar ceased, and total pumpage reduced to less than 5 mgd, some wells continued to exhibit rising chlorides. Any ground-water flow or solute transport model constructed should calibrate to the two equilibrium periods outlined above.

Estimated Sustainable Yield of the Ewa Plain

Report R-79 provided sustainable yield estimates for the Ewa Plain caprock aquifer. Unlike the methodology used to calculate sustainable yield for large basaltic aquifer systems (State Water Resource Protection Plan, Vol. II, 1992), the sustainable yield estimate for the caprock is based on an optimal amount of pumpage to achieve an acceptable water quality for irrigation (< 1,000 mg/l chloride). Essentially, sustainable yield for the caprock aquifer is defined as "net pumpage" or the difference between
total pumpage and the return irrigation component plus natural leakage.

During the plantation time, water quality was a function of cane acreage, caprock pumpage, irrigation method (furrow or drip), and basal water quality. Assuming that natural leakage is constant, changes in the irrigation method and acreage changed net pumpage or sustainable yield. Since the upper limestone aquifer is a result of a 100 years of irrigation, past land use changes and irrigation methods have altered the sustainable yield several times. Return basal irrigation water and natural basal leakage inflow from the Honouliuli alluvium into the limestone aquifer contributed to recharge. The table below summarizes these changes as presented in R-79 and Figure 5 for the Puuloa area.

<table>
<thead>
<tr>
<th>Period</th>
<th>Average Caprock Pumpage (mgd)</th>
<th>Caprock Chloride (mg/l)</th>
<th>Irri. Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930-1940</td>
<td>11</td>
<td>700-1050</td>
<td>Furrow</td>
<td>Equilibrium condition 2500 acres of cane</td>
</tr>
<tr>
<td>1970-1980</td>
<td>22</td>
<td>600-800</td>
<td>Furrow</td>
<td>Non-equilibrium conditions EP Pumps 20,21,22 increasing chlorides</td>
</tr>
<tr>
<td>1980-1989</td>
<td>21</td>
<td>900-1000</td>
<td>Drip</td>
<td>Non-equilibrium conditions</td>
</tr>
<tr>
<td>1989-1994</td>
<td>14</td>
<td>1000-1400</td>
<td>Drip</td>
<td>Non-equilibrium conditions Reduced acreage</td>
</tr>
</tbody>
</table>

Report R-79 estimates (p. 41) that fields irrigated by Koolau or Waianae basal sources return 53 percent of the applied water if furrow irrigation methods are employed or 41 percent if drip methods are used (using water balance coefficients applied in CWRM Report R-78, 1988). For caprock sources 49 percent is returned for furrow, whereas only 29 percent is returned for drip. Using 1981 and 1986 (mentioned in R-79 as predominately furrow and drip years respectively) to compare differences for return water quantities over the entire region, the report estimates that 32 mgd of basal water and 15.3 mgd of caprock water was return irrigation in 1981, while 16 mgd basal and 5.5 mgd caprock was return water in 1986. Net pumpage in 1981 was 15.7 mgd, while in 1986 it was 13.5 mgd (R-79, p. 43).
From the above analysis of the return component, R-79 (p. 48) estimated the sustainable yield for the three areas. Sustainable yield is maintaining chlorides at "less than 1,000 mg/l for current [as of 1989] and anticipated land use conditions". "Future" means when sugar operations cease, our present condition, and when there is no significant amount of return irrigation water. Below is the table presented in R-79 (p. 48).

<table>
<thead>
<tr>
<th>Area</th>
<th>Current (mgd)</th>
<th>Future (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honouliuli-Puuloa</td>
<td>10-15</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Kapolei-BPNAS</td>
<td>5</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Malakole</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

The present time

Presently the Puuloa Sector caprock aquifer is in a state of non-equilibrium. All imported basal water has ceased. Though pumpage from private wells averages between 2-3 mgd, a very small fraction of that amount returns as recharge. Recirculation of the same water and salt build-up in the soil can only be alleviated by direct infusion of fresh water. This infusion comes from sporadic large winter storms and from an unknown amount of leakage from the basal aquifer. The estimated recharge by rainfall over the Puuloa Sector is 2 mgd (R-79, p. 42).

Leakage estimates for the range from 1-1.5 mgd/mile (CDM Report, 1993) to 5 mgd/mile as used in the Ewa Plain strip model (Bolke and Bauer, in prep.). Over the two mile boundary, the inflow estimates range from 3-10 mgd. The R-79 single-cell mixing model estimated 15 mgd inflow from Honouliuli into Puuloa, but of that amount natural leakage was estimated to be 4 mgd.

Eyre (1987, p. 12) estimated a net of 30 mgd leaking into the caprock (Kapolei area) from the Waianae basal lens during the plantation era (after removing plantation pumpage), and 33 mgd for pre-development (pre 1879) time (8 mgd of rainfall and 25 mgd natural ground-water flow from Schofield). The hydrologic budget was based on work by Giambelluca (1986) and employed by Eyre to solve a mixing-cell model that determined the effects of drip irrigation to water quality in the basal aquifer.

Changes to Sustainable Yield

The caprock aquifer is currently undergoing a period of change. It will take an unknown amount of time for a new equilibrium to set in. One and a half years have elapsed since the cessation of both sugar and the infusion of basal irrigation that resulted. Ground water (residual cane irrigation water +
storm recharge + natural leakage + minor irrigation return water) is slowly moving through the coral aquifer. Hydrologic properties of the aquifer will govern how long it takes to change to a new steady-state.

As stated above, estimated sustainable yield for the caprock was based on a net pumpage that supported a particular water quality. Net pumpage now does not include a large return irrigation component, but may include an increase in natural leakage due to reduction of 60± mgd of plantation pumpage and attendant changes in the basal water level. Therefore, a new sustainable yield that would maintain irrigation quality water must be much less than previously assigned. For the Honouliuli-Puuloa area, estimates for natural leakage and rain recharge could be as high as 12 mgd or as low as 5 mgd. A good estimate for caprock recharge was lost when sugar cultivation ceased.

Golf course irrigation is different than drip irrigation for cane since it is less intensive and is concentrated over a small area. Giambelluca (1991, p. 43) estimates that recharge attributed to park irrigation is about 6 percent of recharge from drip-irrigated cane fields. Golf courses may be somewhat greater. For natural areas Giambelluca's water balance puts recharge at 16 percent of drip irrigation.

The Commission granted a current allocated use of 19 mgd for the caprock aquifer. If everyone with a permitted use pumped their allocated amount, the aquifer would quickly salt up and become unusable for irrigation. Every user would have to cease or drastically reduce pumping and wait for natural leakage or for some kind of artificial recharge to improve water quality. From Figure 5, nonuse of EP Pump 27,28 after 1994 drastically reduced the chloride concentration at that source. Later, Figures 6-8 will show a movement of fresher water into the area surrounding EP Pumps 27,28.

Due to the profound changes in land and water use, the Commission should tread slowly until there is a better idea of the natural changes occurring within the aquifer. The new sustainable yield for the Puuloa area will be less than 10 mgd, perhaps close to 5 mgd. Constant monitoring of pumpages and chloride data will provide a refined estimate. As will be discussed below, we know that low capacity wells in Puuloa Sector have maintained relatively stable or improving water quality, whereas large capacity plantation wells appear to cause localized up-coning and increasing chlorides.

**Analysis of Caprock Aquifer Since 1994**

Anticipating the cessation of sugar and the accompanying widespread land and water use changes, the CWRM staff have regularly sampled OSCo and private wells since April 1994. Chloride samples and specific conductance measurements are collected from about 20 wells on a monthly to six week schedule,
and over a single day. Most of the wells are located in the Puuloa Sector, three wells are in the Kapolei Sector, and two wells are in the Malakole Sector. Since the program began, several wells were dropped and others added depending upon access or reliability of the measurement. The primary purpose of sampling is to provide baseline data that can measure changes to the caprock aquifer with time.

Figures 6, 7 and 8 are computer-drawn isochlor (lines representing equal chloride concentration) maps based on chloride data collected from wells in June 1994, September 1995, and February 1996. The isochlor lines only relate chloride data between the wells from which they were collected. In June 1994 sugar was still being cultivated in the vicinity of EP Pump 23. Figures 7 and 8 represents land and water use conditions as they are today. Recharge by rainfall and natural leakage will lower chloride concentrations and cause a shift of the isochlor lines. What is apparent when comparing Figures 6 with 7 and 8 is the worsening water quality around EP Pump 22, and freshening taking place west and southeast of Kapolei Golf Course. The EP Pump 22 situation may be a result of pumping and irrigation practices at Hawaii Prince Golf Course, whereas changes in water quality west of Kapolei Golf Course are probably natural.

Generally, the data collected since 1994 support an estimated sustainable yield that is less than 10 mgd for the Puuloa area (current pumpage averages 2-3 mgd). As will be shown later, individual wells equipped with small capacity pumps, show either a reduction or stabilization of chlorides, while EP Pump 22, fitted with a large capacity pump, shows a continuing rise in chlorides. Figures 6-8 provide a "animated" view of the changes now occurring.

In the Kapolei-BPNAS Sector, the majority of the pumpage is from the Kapolei Golf Course. Chlorides at the golf course are stable, and may be a result of basal ground-water leakage from the Waianae aquifer. The sustainable yield estimated by Mink (R-79, 1989) was less than 5 mgd. Present usage is about 1.1 mgd. A large portion of this aquifer is located under BPNAS where no pumpage occurs. Leakage from the Waianae basal aquifer is no longer 30 mgd estimated by Eyre (1987) but some lesser quantity. This amount would be natural ground-flux (estimated 33 mgd) minus total pumpage in Ewa-Kunia Aquifer System (present average about 9 mgd) or about 22 mgd.

R-79 estimated the Malakole area sustainable yield to be less than one mgd after sugar irrigation. Most of the usage is industrial. The upper aquifer supplies some water that is in excess of 1,000 mg/l. Pumpage from this sector is over 12 mgd. Some of the pumpage is from a lower coral aquifer in the caprock.

Honouliuli-Puuloa Area

Since the demise of OSCo the greatest aquifer changes will
occur in the Puuloa Sector. Present pumpage for the area averages 2.8 mgd. About 1.5 mgd of the present pumpage is east of Fort Weaver Road at the Hawaii Prince Golf Course and Ewa International Golf Club. Gentry Development Company irrigation wells and the Honouliuli Sewage Treatment Plant wells make up the remainder with small capacity wells.

Figures 9, 9a, 10, 10a, 11, and 11a focus on chloride as related to pumpage and land use changes since 1992 at Hawaii Prince Golf Course. Six wells supply the course with water. HPGC wells 1, 2, and EP Pump 22 (wells 1901-03, 1900-17, and 1900-02 respectively) are located about 500 feet, 1,000 feet, and 2,000 east of Fort Weaver Road respectively. Water quality at HPGC wells 1 and 2 appears to be improving over time, whereas at EP Pump 22 the opposite is occurring. EP Pump 22 pumps about four times the amount of water produced from each of the other wells. Though not shown, water quality at the HPGC wells near EP Pump 22 are affected by the high pumpage, suggesting possible upconing. Evaporation from the large reservoir ponds prior to irrigation will increase the chlorides of the applied water. Pan evaporation in Ewa is about 85 inches/year (R-79, p. 43). Salt can build up in the soil, only to be flushed back into the aquifer after a storm. The wells closer to Fort Weaver Road may also be affected more by storm recharge because of improving quality.

Currently, there is a request to increase the usage at EP Pump 22. From the data presented in Figures 11 and 11a, an increase in pumpage is not warranted since chlorides are already in excess of what the grass can tolerate and exceeds the 1000 mg/l associated with sustainable yield. Greater pumpage at this well could adversely affect their other sources by increasing the chloride mixture of the irrigation water applied to the west end of the course, as well as exacerbate the localized up-coning on the east side. Ewa International Golf Club, located south and down gradient of Hawaii Prince, could also be detrimentally affected.

Figures 12, 12a, 13, 13a, 14, and 14a illustrate chloride and pumping trends at three Gentry sources. Palm Villa 1 (2001-06), and Palm Court (2002-12) show a steady chloride decline since 1994. Palm Villa 2 (2001-08) averaged about 800 mg/l since 1994, but had declined from 1,200 mg/l from a sample collected in 1993.

Gentry Development is proposing two new wells and water use permits in Puuloa. Because of the small pump capacities proposed for these wells, the likelihood that they would detrimentally affect the aquifer or neighboring wells is simply unknown. What will occur will be a reduction of ground-water flux equal to amount of pumpage.

Figures 15 and 15a show an unusual phenomena at the Honouliuli Sewage Treatment Plant (STP). Wells 1902-03 and 04
are about 20 feet apart, both drilled to a bottom elevation of -15 feet msl. Chloride concentrations are typically 50-200 mg/l apart, with water quality ranging between 500 and 700 mg/l chloride. General trend shows that chlorides have increased in Well 1902-03 but have remained stable in Well 1902-04. The difference in water quality must be due to some geologic control, such as a crack or solution cavity within the coral aquifer.

As stated above, water levels within the caprock are do not enter into estimating sustainable yield. Water levels can fluctuate as much as 0.5 feet during the day due to the tidal signal. During 1957-58 water levels were collected in EP Pumps 21-24. Figure 16 shows that instantaneous water levels varied during the two years of measurement. Water levels dropped to a low of 1.3 in January 1958. The strike began in February 1958 and lasted two months. Even though irrigation ceased, water levels were increasing when the first measurements were done after the strike. Report R-88 indicates that years these years had average to slightly above average rainfall. Static water levels in January 1957 were about 2.5 feet msl. The highest water level during the entire time appears to be near EP Pump 22 and could indicate mounding of irrigation water at that site, since wells west and north appear to be "down-gradient".

Figure 17 plots 1995 water level data collected by Tom Nance at EP Pump 24 with daily rainfall at Ewa Mill and Honolulu Observatory at Ewa Beach. There does not seem to any correlation between storm events and rising water levels. In fact, several high water level periods are during the driest part of the year. When Nance (personal communication, 1996) compared EP Pump 24 water levels with ocean tidal data he found a very close correlation. Tides could account for large water level changes observed in Figure 16. Storm events seem to have a greater impact on water quality than water levels.

Unknown factors make it difficult to compare water levels presented in Figure 16 to Figure 17. What is known, however, irrigation water was applied to fields by the furrow method in the 1950's, with water levels changing by a foot over a year. EP Pump 24 water levels collected by Nance represent a time of localized and limited irrigation and average about 1.7± feet msl.

Kapolei-BPNAS Sector

Present water use in this sector averages about 1.1 mgd. Most of the pumpage occurs at the Kapolei (HFDC) Golf Course. Of the six wells drilled, five are pumping. Water quality has stayed relatively constant. Figures 18 and 18a present pumpage and chloride data for Well B (2003-02). Average chloride is 450 mg/l. Increased leakage from the basal aquifer is thought to be the reason for the constancy of the chloride data.

Other wells in the sector include the Kapolei Campbell wells 1905-08 and 1905-10. The primary source, 1905-08, pumps about
0.150 mgd with chlorides averaging 500 mg/l. The Desalt Plant wells are presently off line. Its caprock source, Well 1905-09, averaged about 700 mg/l. The Desalt Plant wells can almost be placed in the Malakole Sector.

Water quality underlying Barbers Point Naval Air Station is unknown. Pumpage from the mauka Kapolei Golf Course wells and the Kapolei Campbell wells will affect ground water quality and its availability when BPNAS is turned over to the State.

**Malakole Sector**

Pumpage from the Malakole Sector is presently about 12.6 mgd. The estimated sustainable yield for 1,000 mg/l water is less than 1 mgd. Of the total quantity pumped, 2.6 mgd from is brackish water developed by Kalaeloa Partners (wells 1805-03-09). Specific conductivity of the water developed by them average about 10,000 umhos which is equivalent to a chloride concentration of over 3,000 mg/l. The additional 9.6 mgd is essentially highly brackish and saline used for wash down, cooling and other industrial purposes.

CWRM personnel sample the Hawaii Raceway Park well (1905-01). This well is used infrequently for dust control. Chlorides ranged between 1,100 mg/l in June 1993 to 580 mg/l in October 1995. Most of the samples collected hover around 870 mg/l.

If the Commission wants to preserve the 1,000 mg/l water for other than industrial purposes, then the Malakole Sector should be divided. Total pumpage for new wells mauka of Hawaii Raceway Park could be managed at less than 1 mgd, whereas industrial wells in Campbell Industrial Park can be allowed to continue at present rates.

**Refinement of Data and Future Projects**

Water quality and pumpage data collected by CWRM personnel and by water users will be continually updated by graphs and isochlor maps. More sampling points need to be added to the CWRM network. Three or four test holes should be drilled within or near BPNAS. Though water level do not appear to be related to water quality, a network of small diameter water level wells should be drilled throughout the Ewa Plain.

Bolke and Bauer (in prep.) began a ground water model using SUTRA. The model was calibrated to a period (late 1980's) that was not in equilibrium. Additional work should be done to calibrate the model to the two stable periods outlined above. Additional modelling work combined with caprock monitor wells need to address the changes in natural leakage that are now occurring from both the Waianae and Koolau aquifer.

**Conclusions and Recommendations**
Several major conclusions can be drawn from the above discussion:

1. Sustainable yield for the caprock aquifer assumes that total pumpage within a sector will maintain a chloride concentration of 1,000± mg/l.

2. The caprock aquifer, especially the Honouliuli-Puuloa area, has not reached an equilibrium since cessation of cane irrigation in 1994. To achieve and maintain a good irrigation quality water will require a change in the sustainable yield to a value less than 10 mgd, and less than 5 mgd in the Kapolei-BPNAS area. The historical record of the caprock aquifer argues for a reduction of permitted uses, unless there is a drastic change to the inflow of ground water.

3. In light of 2. above, the Commission should adopt a "go slow" approach to new wells in the Puuloa region. Small irrigation wells appear not to presently cause problems; however, cumulative effects could occur. At the present time we do not have enough data regarding the natural post-OSCo changes that are occurring within the limestone aquifer. The isochlor maps do show a continuing change throughout the Ewa Plain.

4. The Malakole area is pumping much higher than the sustainable yield of less than 1 mgd estimated in R-79. This sector should be divided into two. Sustainable yield for Campbell Industrial Park is meaningless when water for industrial purposes is used. However, there should be some limit, because heavy pumpage could affect ground water underlying BPNAS. Mauka of Campbell Industrial Park, pumpage should be limited to less than 1 mgd.

5. Future modelling efforts should use calibration "targets" of equilibrium periods of 1930-1940 and from 1952-1965.

6. Separation of the Ewa caprock aquifer into three broad management areas has merit. These broad regions can be subdivided into smaller areas that require special management. Perhaps the concept of "sustainable capacity", the amount of water developed from a well or a battery of wells (such as Hawaii Prince Golf Course) that will allow stabilization of chlorides, should be more fully developed and used by the Commission for special management of smaller areas.
REFERENCES

Board of Water Supply, unpublished data files.


Most Saline EP Basal Sources
Chlorides and Pumpage

FIGURE 1

Ewa Pump 1
Ewa Pump 9 (Well A)
Ewa Pump 9 (Wells B,C,D)
Ewa Pump 9 (Wells E,F)
Ewa Pump 9 (Wells G,H)
Marginal EP Basal Sources
Chlorides and Pumpage

Ewa Plantation Pumps 3, 4, 5, & 6 supplied marginal quality water.

FIGURE 2
- Ewa Pump 3  - Ewa Pump 4  - Ewa Pump 5  - Ewa Pump 6
Marginal to Potable EP Basal Sources
Chlorides and Pumpage

Ewa Plantation Pumps
2, 7, 8, 15 & 16 supplied marginal quality to potable irrigation water.

FIGURE 3
- Ewa Pump 2  - Ewa Pump 7  - Ewa Pump 8  - Ewa Pumps 15, 16
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Start 1937

Basal (low Cl) irrigation
Pumps 15,16

Total imported basal water from Koolau ranged < 50-70 mgd

Average monthly
pumpage (mgd)

Est. average yearly pumpage (12 mgd)

Average monthly pumpage (mgd)

Ref: CWRM, BWS files, R-79, & Stearns (1935, 1940)

Isochlor Map of Ewa Caprock Aquifer
June 1994
Isochlor Map of Ewa Caprock Aquifer
September 1995

FIGURE 7
Isochlor Map of Ewa Caprock Aquifer
February 1996
Chloride and Pumpage of HPGC Well 1
Ewa Caprock, Oahu

FIGURE 9
HPGC 1 (Qave = .148 mgd)
FIGURE 9a

Chloride and Pumpage of HPGC Well 1
Ewa Caprock, Oahu

Total caprock average monthly pumpage (mgd)
Basal (low Cl) irrigation

OSCo caprock pumpage ceased

Total Hawaiian Prince pumpage

Well 1 pumpage

Year

Chloride Concentration (mg/l)

Average Pumpage (mgd)

Ref: CWRM, BWS files, & R-79

HPGC 1 (Qave = .148 mgd)

FIGURE 9a
Chloride and Pumpage of HPGC Well 2
Ewa Caprock, Oahu

FIGURE 10
HPGC 2 (Qave=0.160 mgd)
Chloride and Pumpage of HPGC Well 2
Ewa Caprock, Oahu

Total caprock average monthly pumpage (mgd)
Basal (low Cl) irrigation

Total caprock pumpage ceased
HPGC 2 pumpage

Ref: CWRM, BWS 8836, & R-79

FIGURE 10a

* HPGC 2 (Qave=0.160 mgd)
Chloride and Pumpage of HPGC Well EP22
Ewa Caprock, Oahu

**FIGURE 11**

- EP-22 (Qave=1.021 mgd)

- Basal (low Cl) irrigation

- Total caprock average monthly pumpage (mgd)

- Well EP-22 pumpage

- Total Hawaii Prince pumpage

- Stop

- OSCo caprock pumpage ceased

Ref: CWRM, BWS files, & H-79
Chloride and Pumpage of HPGC Well EP22
Ewa Caprock, Oahu

Figure 11a
EP-22 (Qave=1.021 mgd)
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

FIGURE 12

* Gentry Palm Villa 1 (Qave=0.019 mgd)
Chloride and Pumpage of Ewa Gentry Wells, Ewa Caprock, Oahu

FIGURE 12a

- Gentry Palm Villa 1 (Qave=0.019 mgd)

Ref: CWRM, BWS data, & R-79
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

FIGURE 13

* Gentry Palm Court (Qave= 0.025 mgd)
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

Total caprock average monthly pumpage (mgd)

Basal (low Cl) irrigation

OSCo caprock pumpage ceased

Total Ewa Gentry pumpage

Palm Court pumpage

Year

Chloride Concentration (mg/l)

Average Pumpage (mgd)

1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0


Ref: CWRM, BWS files, & R-79

Gentry Palm Court (Qave=.025 mgd)

FIGURE 13a
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

Total caprock average monthly pumpage (mgd)

Basal (low Cl) irrigation

OSCo caprock pumpage ceased

Total Ewa Gentry pumpage

Palm Villa 2 pumpage

Average Pumpage (mgd)

Gentry Palm Villa 2 (Qave=0.031 mgd)

FIGURE 14a
Chloride and Pumpage of Honouliuli STP
Wells, Ewa Caprock, Oahu

FIGURE 15

- Honouliuli STP 1902-03  - Honouliuli STP 1902-04 (Qave=0.654 mgd)
Chloride and Pumpage of Honouliuli STP Wells, Ewa Caprock, Oahu

Chloride Concentration (mg/l)

Average Pumpage (mgd)

Total caprock average monthly pumpage (mgd)

Stop

Basal (low Cl) irrigation

OSC
caprock pumpage ceased

Total Honouliuli STP pumpage

Honouliuli STP 1902-03

Honouliuli STP 1902-04 (Qave=0.654 mgd)

FIGURE 15a

Ref: CWRM, BWS files, & R-78
Monthly Water Level Measurements
Ewa Plantation Caprock Wells

FIGURE 16

Month

Water Level Elevation (ft, msl)
Water Level @ EP-24 & Daily Rainfall
Ewa Caprock, Ewa, Oahu

No data available between days 212-251

Missing data: daily rainfall at Honolulu Observatory

FIGURE 17
Ref: Tom Nance, water level data
Chloride and Pumpage of HFDC Golf Course Well B, Ewa Caprock, Oahu

![Graph showing chloride concentration and pumpage over time]

- Basal (low Cl) irrigation
- Oscor caprock pumpage ceased
- HFDC B (Qave=0.270 mgd)
- Total caprock average monthly pumpage (mgd)
- Total HFDC-Kapolei Golf Course pumpage
- HFDC Well B pumpage

FIGURE 18

Ref: CWRM, BWS Res. & R-79
Chloride and Pumpage of HFDC Golf Course Well B, Ewa Caprock, Oahu

**CHART:**
- **Y-axis:** Chloride Concentration (mg/l)
- **X-axis:** Year
- **Graphs:**
  - Total caprock average monthly pumpage (mgd)
  - Basal (low Cl) irrigation
  - OSCo caprock pumpage ceased
  - Total HFDC-Kapolei Golf Course pumpage
  - HFDC Well B pumpage

**Legend:**
- HFDC B (Qave=0.270 mgd)

**Notes:**
- Ref: CWRM, BWS files & R-79
<table>
<thead>
<tr>
<th>WUP No.</th>
<th>Applicant</th>
<th>Well No.</th>
<th>Well Name</th>
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<th>mgd</th>
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<td>Aquifer System: PUULOA</td>
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<td>GENTRY DEVELOPMENT CORP.</td>
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<td>EWA GENTRY</td>
<td>09/27/1985</td>
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<td></td>
<td>PALM VILLA I ASSOCIATION</td>
<td>2001-06</td>
<td>PALM VILLA 1</td>
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<td>HAWAII PRINCE GOLF CLUB</td>
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18 Permits Totaling 17.170

EXHIBIT 8
### SCENARIO COMPARISONS

#### CENTRAL OAHU DEVELOPMENT PLAN AREA

#### Central Oahu Projected Increase

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<td>168,950</td>
<td>38,424</td>
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<td>Dispersed Development</td>
<td>130,526</td>
<td>164,444</td>
<td>33,918</td>
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<td>130,526</td>
<td>185,091</td>
<td>54,565</td>
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<td>Ewa &amp; Central Oahu Urban Centers</td>
<td>130,526</td>
<td>213,802</td>
<td>83,276</td>
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<td>Current Trend</td>
<td>130,526</td>
<td>177,738</td>
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**NOTE:** Baseline forecast for 1990-2020 Islandwide increase is 28%.

#### Central Oahu Projected Increase

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<tr>
<th>Development Scenario</th>
<th>1990 Housing Units</th>
<th>2020 Housing Units</th>
<th>1990-2020 Increase</th>
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<td>36,262</td>
<td>53,240</td>
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<td>Dispersed Development</td>
<td>36,262</td>
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<td>Ewa Employment</td>
<td>36,262</td>
<td>58,118</td>
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<td>36,262</td>
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<td>36,262</td>
<td>55,726</td>
<td>19,464</td>
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**NOTE:** Baseline forecast for 1990-2020 Islandwide increase is 42%.

#### Central Oahu Projected Increase

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<td>Ewa Employment</td>
<td>23,029</td>
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<td>34,087</td>
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<td>23,029</td>
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<td>Current Trend</td>
<td>23,029</td>
<td>54,751</td>
<td>31,722</td>
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**NOTE:** Baseline forecast for 1990-2020 Islandwide increase is 49%.

#### Change in Resident Population

**Central Oahu Development Plan Sub-Areas (1990-2020)**

- [Baseline](#)  
- [Scenario 1](#)  
- [Scenario 2](#)  
- [Scenario 3](#)  
- [Scenario 4](#)

City and County of Honolulu Planning Department, August 1994

#### Change in Non-Construction Jobs

**Central Oahu Development Plan Sub-Areas (1990-2020)**

- [Baseline](#)  
- [Scenario 1](#)  
- [Scenario 2](#)  
- [Scenario 3](#)  
- [Scenario 4](#)

City and County of Honolulu Planning Department, August 1994
### KAPOLEI AQUIFER SYSTEM

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<th>ITEM</th>
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<td>Pu‘u Makakilo (1904-02)</td>
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EXHIBIT 6
## PUULOA AQUIFER SYSTEM

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<td>(shown in Exhibit 8)</td>
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<td>Hawaii Prince Golf Club</td>
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<td>(1900-02, 17 to 20, 1901-03)</td>
<td>0.129</td>
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<td>(2001-03)</td>
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<td>(2001-04)</td>
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<td>(2001-05)</td>
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<td>* -0.543</td>
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<td>Available Allocation</td>
<td>-4.784</td>
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</table>

* Proposed marina project will result in a permanent reduction in caprock storage capacity.
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 621
HONOLULU, HAWAII 96808

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

July 5, 1995
Honokaa, Hawaii

EXTENSION -- Interim Water Use Permits
Ewa Caprock Ground Water Management Area, Oahu

Applicant:

(Well Nos. 1905-08,10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-01,02,04,05,07)
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 1900-02,17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10 & 2003-06)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

(Well No. 2001-07)
The Arbors Association
91-920 La'aulu St., #1G
Ewa Beach, HI 96706

Landowner:

Same

Same

Same

Same

Same
Staff Submittal

July 5, 1995

(Well No. 2001-08)
Palm Villas II Association
91-1119 Mikohu St., #D
Ewa Beach, HI 96706

(Well No. 2002-12)
Palm Court Association
91-1019 Puaniu St., #25R
Ewa Beach, HI 96706

(Well No. 1902-01)
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

Same

Same

Same

Background:

At the July 13, 1994 and January 25, 1995 meetings of the Commission on Water Resource Management (Commission), interim water use permits for durations of one year or less were approved for the above groundwater sources for various nonpotable uses at new developments in Ewa, Oahu. These permits are due to expire on July 12, 1995.

Expiration dates are being specified for water use permits in the Ewa Caprock because there are uncertainties regarding the present sustainable yield of the Ewa Caprock Aquifer and the impacts of land use changes on future water availability.

Requests for new water use permits to continue current groundwater uses after the July 12, 1995 expiration date have been received from each of the applicants.

RECOMMENDATION:

Staff recommends that the Commission extend the duration of the present water use permits until such time that a decision is made at a meeting on Oahu.

Respectfully submitted,

RAE M. LOUI
Deputy Director

APPROVED FOR SUBMITTAL:

MICHAEL D. WILSON, Chairperson
ITEM 6  PARKER RANCH, APPLICATION FOR A STREAM CHANNEL ALTERATION PERMIT, CONSTRUCTION OF A WATERLINE CROSSING, WAIKOLOA AND WAIKOLOA IKI STREAMS, KAMUELA, HAWAII (TMK 6-5-01:01 AND 21)

STAFF PRESENTATION: David Higa

Unanimously approved. (Nobriga/Girald)

ITEM 8  EXTENSION - INTERIM WATER USE PERMITS, EWA CAPROCK GROUND WATER MANAGEMENT AREA, OAHU

STAFF PRESENTATION: Roy Hardy

Unanimously approved. (Nobriga/Cox)

ITEM 9  STATUS REPORT ON AFTER-THE-FACT STREAM CHANNEL ALTERATION AND STREAM DIVERSION WORKS PERMITS AND PETITION TO AMEND THE INTERIM INSTREAM FLOW STANDARD, HIILAWE AND LALAKEA STREAMS, HONOKAA, HAWAII (TMK 4-8-03:06)

STAFF PRESENTATION: David Higa

The following persons gave oral and written testimonies:

Mr. Peter Simmons, Bishop Estate  Ms. Catherine Allen
Mr. Paul Matsuo, Dept. of Agriculture  Ms. Clara Lakakalia
Mr. Patrick Gardner, Legal Aid Society of Hawaii  Mr. Abraham Kamakawiuuole
Mr. Lawrence Miller  Mr. Christopher Rathburn
Mr. Jeffrey Quin  Ms. Brenda Machado Lee
Mr. Robert Shioji  Mr. Jim Cain
Mr. Ben Mahilum  Mr. Burt Kauhi
Mr. Kakalau  Mr. Karl Foytik

Chairperson Wilson stated that the purpose of this item was to get input from the community. A decision will be made at a later date.
July 5, 1995

Honorable Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Water Use Permit (WUP) Applications
Ewa Caprock Groundwater Management Area, Oahu

Attached for your information are comments by the Board of Water Supply on the notice of applications for water use permits for the Ewa Caprock Groundwater Management Area. Comments by the Planning Department were forwarded earlier in a letter dated June 22, 1995, a copy which is attached.

Should you have any questions, please call Randolph Hara at 523-4483.

Sincerely,

CHERYL D. SOON
Chief Planning Officer

CC: Honorable Jeremy Harris, Mayor
(Mayor’s Control No. 23037)
June 29, 1995

TO: CHERYL D. SOON, CHIEF PLANNING OFFICER
   PLANNING DEPARTMENT

FROM: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
   BOARD OF WATER SUPPLY

SUBJECT: STATE WATER COMMISSION'S LETTER DATED MAY 30, 1995 TO
   MAYOR JEREMY HARRIS ON THE NOTICE OF APPLICATIONS FOR
   WATER USE PERMITS, EWA CAPROCK GROUNDWATER MANAGEMENT
   AREA, OAHU

We have no objections to the applications for permits for groundwater from the Ewa Caprock Aquifer.

If you have any questions, please contact Herbert H. Minakami at 527-6183.
June 22, 1995

Honorable Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Water Use Permit (WUP) Applications
Ewa Caprock Groundwater Management Area, Oahu

This is in response to your memorandum dated May 30, 1995. We have reviewed the subject applications for non-potable water in the Ewa Caprock Aquifer for irrigation uses and provide the comments below for your consideration.

- Ewa by Gentry - 265,700 gpd; Hawaii Prince Golf Club - 500,000 gpd; Arbors - 63,000 gpd; Palm Villas II - 48,000 gpd; Palm Court - 66,000 gpd; Estate of James Campbell (Kapolei) - 302,000 gpd

The projects are shown on the Ewa Development Plan Land Use Map (DPLUM). Therefore, we have no objections to these temporary water use permit requests.

- Kapolei Golf Course and Villages of Kapolei - 1,494,000 gpd

The area identified within the HFDC request is designated Agriculture on the Ewa DPLUM. Although the proposed and existing uses are not consistent with this designation, the projects does have Act 15 exemption from County planning and zoning regulations. Therefore, we have no objections to HFDC request.
Ewa Marina - 1.5 mgd

The Ewa Marina (Haseko (Ewa), Inc.) development is shown on the Ewa DPLUM. However, the allocation of water for the Ewa Marina project may be premature at this time. Use of the water will not be needed until several approvals are granted. The Haseko Corporation is in ongoing discussion regarding drainage and the permits for the marina construction are part of a Commission on Water Resource Management contested case hearing.

Construction of the project including subdivision, grading and building permits will be delayed until these issues are resolved. We are unable to provide an estimate of when the project would be ready for an allocation. Please be clear that this comment regarding timing in no way is in opposition to development of Ewa Marina. The project should not be penalized from future allocations of water to implement the Ewa Development Plan.

Please be advised that the City is preparing a policy regarding reuse of Honolulu Sewage Treatment Plant effluent within the Ewa plains area. When this effluent is available for public use, we recommend that the Commission require non-potable water users to use the treated effluent to meet their non-potable water needs.

Should you have any questions, please call Eugene Takahashi at 527-6022.

Sincerely,

CHERYL D. SOON
Chief Planning Officer

CDS: js

cc: The Honorable Jeremy Harris, Mayor
Mr. Nelson W.G. Lee  
Haseko (Ewa), Inc.  
820 Mililani St., Ste. 810  
Honolulu, HI 96813

Dear Mr. Lee:

Transfer of Water Use Permit for Well No. 1902-01  
Ewa Caprock Groundwater Management Area, Oahu

We have received your letter of May 12, 1995, regarding the transfer of the water use permit for Well No. 1902-01 from Oahu Sugar Co., Ltd. to Haseko (Ewa), Inc. (Haseko), effective April 1, 1995.

As Haseko has previously applied for and received a water use permit for 1.5 million gallons per day (mgd) for this source, the remaining allocation to be transferred is 2.66 mgd.

Please be advised that any change in the conditions of the use described in the permit invalidates the transfer and constitutes a ground for revocation of the permit. The present permitted use is for agriculture. Other irrigation uses, including golf course irrigation, may not be permitted under the terms of the present permit.

Enclosed please find our official water use report form. Please use this form to report your monthly total water usage. Monthly water use reporting is a condition of the water use permit and is required under Administrative Rule 13-168-7.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]
RAE M. LOUI  
Deputy Director

LN:ss  
Encl.
June 22, 1995

Honorable Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Water Use Permit (WUP) Applications
Ewa Caprock Groundwater Management Area, Oahu

This is in response to your memorandum dated May 30, 1995. We have reviewed the subject applications for non-potable water in the Ewa Caprock Aquifer for irrigation uses and provide the comments below for your consideration.

- Ewa by Gentry - 265,700 gpd; Hawaii Prince Golf Club - 500,000 gpd; Arbors - 63,000 gpd; Palm Villas II - 48,000 gpd; Palm Court - 66,000 gpd; Estate of James Campbell (Kapolei) - 302,000 gpd

The projects are shown on the Ewa Development Plan Land Use Map (DPLUM). Therefore, we have no objections to these temporary water use permit requests.

- Kapolei Golf Course and Villages of Kapolei - 1,494,000 gpd

The area identified within the HFDC request is designated Agriculture on the Ewa DPLUM. Although the proposed and existing uses are not consistent with this designation, the projects does have Act 15 exemption from County planning and zoning regulations. Therefore, we have no objections to HFDC request.
Ewa Marina - 1.5 mgd

The Ewa Marina (Haseko (Ewa), Inc.) development is shown on the Ewa DPLUM. However, the allocation of water for the Ewa Marina project may be premature at this time. Use of the water will not be needed until several approvals are granted. The Haseko Corporation is in ongoing discussion regarding drainage and the permits for the marina construction are part of a Commission on Water Resource Management contested case hearing.

Construction of the project including subdivision, grading and building permits will be delayed until these issues are resolved. We are unable to provide an estimate of when the project would be ready for an allocation. Please be clear that this comment regarding timing in no way is in opposition to development of Ewa Marina. The project should not be penalized from future allocations of water to implement the Ewa Development Plan.

Please be advised that the City is preparing a policy regarding reuse of Honouliuli Sewage Treatment Plant effluent within the Ewa plains area. When this effluent is available for public use, we recommend that the Commission require non-potable water users to use the treated effluent to meet their non-potable water needs.

Should you have any questions, please call Eugene Takahashi at 527-6022.

Sincerely,

CHERYL D. SOON
Chief Planning Officer

CDS:js

cc: The Honorable Jeremy Harris, Mayor
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Application for Water Use Permit, Ewa Caprock Ground Water Management Area, O‘ahu for Well Nos. 1900-02, 17-20; 1901-03; 1902-01; 1905-08,10; 2001-03-05,07-10; 2002-12; 2003-01-07
Honouliuli, ‘Ewa, Oahu
TMK: 9-1-10:6-7,17; 9-1-12:5-7; 9-1-16:01,25,35;
9-1-70:132

Thank you for the opportunity to review this project. The applicants propose to use water from existing sources. Since an approved permit will not authorize any ground disturbing activities we believe that there will be "no effect" on historic sites.

EJ:jk
Mr. Michael D. Wilson, Chairperson  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject: Your Letter of May 30, 1995 on the Ewa Caprock Groundwater Use Permit Applications

Thank you for the opportunity to comment on these applications for permits for groundwater from the Ewa Caprock Aquifer. We have no objections to the permits and return the cover memo marked accordingly.

If you have any questions, please contact Herbert H. Minakami at 527-6183.

Very truly yours,

FOR RAYMOND H. SATO  
Manager and Chief Engineer

Attachment
To: The Honorable Michael Wilson, Chairperson
   Commission on Water Resource Management

From: Dr. Bruce Anderson
   Deputy Director, Environmental Health

Subject: Water Use Permit Applications

Ewa Caprock Groundwater Management
Aiea, Oahu
TMK: 9-1-12: 05

Thank you for allowing us to review and comment on the subject applications contained in your memorandum dated May 30, 1995.

We have no objections to the use of the Ewa Caprock groundwater for irrigation purposes in the Ewa Management Area. However, there are plans to provide treated wastewater effluent for non-potable purposes in the immediate area of the Ewa Caprock Aquifer. The Department of Health recommends that Water Use Permit from this aquifer be granted only if no other alternative source is available, and only until the effluent is available to the applicant. Once the effluent becomes available, we recommend that the applicant be given a reasonable time to connect to the effluent water system, then the Water Use Permit, should be withdrawn. Provisions to include the proper infrastructure to implement these conditions should be required as part of any new construction plans.

All reuse plans must conform to applicable provisions of the Department of Health's "Guidelines for the Treatment and Use of Reclaimed Water." We reserve the right to review the detailed plans for conformance to these guidelines and to the Hawaii Administrative Rules, Chapter 11-62.

Should you have any questions, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4294.

c: WWB
Mr. Michael D. Wilson  
Chairperson  
Commission on Water Resource Management  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809  

June 2, 1995

Dear Mr. Wilson:

Subject: Applications for Water Use Permits - Ewa Caprock Groundwater Management Area, Oahu (Public Notice)

We have reviewed the subject document received with your memorandum dated May 30, 1995, and have the following comments to offer:

1. The following TMKs are located within the State Land Use Urban District:
   
   9-1-10: 17  
   9-1-12: 5, 6, 7  
   9-1-16: 1, 35  
   9-1-70: 132

2. TMKs 9-1-10: 6 and 7 are located within the State Land Use Agricultural District.

3. According to current TMK records, TMK 9-1-61: 9 has been transferred to TMK 9-1-69: 4, which is located within the State Land Use Agricultural District.

4. TMK 9-1-16: 25 is located within the State Land Use Urban and Agricultural Districts. We would like to note that LUC Docket No. A94-708/Office of State Planning, State of Hawaii, which proposes the reclassification of portions of this parcel from the State Land Use Agricultural District to the Urban District, is tentatively scheduled for action on July 27 & 28, 1995.
5. The following areas are predominantly located within the State Land Use Urban District, however, portions of these areas may also be located within the State Land Use Agricultural District:
   A) City of Kapolei
   B) Kapolei Business Park
   C) Kapolei Regional Park
   D) Kapolei Golf Course
   E) Villages of Kapolei

We have no other comments to offer at this time.

We have enclosed your cover memorandum as requested.

Should you have any questions, please feel free to call me or Kathy Yonamine at 587-3822.

Sincerely,

ESTHER UEDA
Executive Officer

EU:KY:th
enc.
TO: 
Mr. Kali Watson, Chairperson
Department of Hawaiian Home Lands

Dr. Lawrence Miike, Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Ms. Esther Ueda, Executive Officer
Land Use Commission

Mr. Raymond Sato, Manager & Chief Engineer
Honolulu Board of Water Supply

Mr. Patrick Onishi, Director
Department of Land Utilization

Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: 
Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: 
Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

☐ We have no comments
☐ We have no objections
☐ Comments attached
☐ Additional information requested
☐ Extended review period requested

Contact person: Kathy Yonamine

Phone: 587-3822

Signed: ____________________________ Date: 6/05/95
May 31, 1995

Mr. Michael Wilson, Chairperson,
and Members of the Commission on
Water Resource Management
State of Hawaii
1151 Punchbowl Street, Room 227
Honolulu, HI 96813

RE: Ewa Marina Golf Course Water Conservation Plan

Dear Mr. Wilson and Commissioners:

HASEKO (Ewa), Inc. (HASEKO) submits the enclosed Ewa Marina Golf Course Water Conservation Plan. The Plan is required by the conditions attached to the temporary water use permit allocating 1.5 mgd of water from the Ewa caprock aquifer for golf course and landscaping irrigation for the Ewa Marina Community project. Although the allocation was approved by the Commission on Water Resource Management (Commission) in July, 1992, the Ewa Marina golf course lands were continued in sugar cane cultivation by Oahu Sugar Company until March 31, 1995.

The temporary permit expires on July 13, 1995, and HASEKO has submitted a request to continue the water use permit for the same amount of water. We ask that the Commission consider the enclosed Water Conservation Plan in making a decision on our request to extend usage.

Meanwhile, should you have any questions on the enclosed Water Conservation Plan, please do not hesitate to call me.

Very truly yours,

Alan Suwa
Project Manager

AS:in

Enclosure
PUBLIC NOTICE

Applications for Water Use Permits
Ewa Caprock Groundwater Management Area, Oahu

The following applications for new interim water use permits for the Ewa Caprock Aquifer have been received and are hereby made public in accordance with Department of Land and Natural Resources Administrative Rules 13-171, "Designation and Regulation of Water Management Areas." Each of the applicants below have been awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995.

Haseko Well No. 1 (Well No. 1902-01)
Applicant: Haseko (Ewa), Inc.
820 Millani St., Ste. 810
Honolulu, HI 96813
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Haseko Well No. 1 (Well No. 1902-01) at Oahu Sugar Co. Field 088, Ewa, Oahu, Tax Map Key 9-1-12:5
Quantity Requested: 1,500,000 gallons per day.
Water Use: Golf course, roadway, and maintenance irrigation
Place of Water Use: Ewa Marina development, Ewa, Oahu, TMKs 9-1-12:5,6,7

Geiger Park (2001-03)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Geiger Park (Well No. 2001-03), located near intersection of Geiger and Ft. Weaver Rds., Ewa, Oahu, TMK 9-1-16:35
Quantity Requested: 30,000 gallons per day.
Water Use: Irrigation for 10-acre park
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMK 9-1-16:35

Sunrise Apts. (2001-04)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Sunrise Apts. (Well No. 2001-04), Ewa by Gentry construction site, Ewa, Oahu, TMK 9-1-61:8
Quantity Requested: 40,000 gallons per day.
Water Use: Landscape irrigation
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-61:7,41-50
Soda Creek III (2001-05)

**Applicant:** Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

**Date Completed Application Received:** May 22, 1995

**Aquifer:** Ewa Caprock Aquifer System, Oahu

**Water Source:** Soda Creek III (Well No. 2001-05), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-70:132

**Quantity Requested:** 20,000 gallons per day.

**Water Use:** Landscape and roadway irrigation

**Place of Water Use:** Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-70:132

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Ft. Weaver Apts. (2001-09)

**Applicant:** Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

**Date Completed Application Received:** May 22, 1995

**Aquifer:** Ewa Caprock Aquifer System, Oahu

**Water Source:** Ft. Weaver Apts. (Well No. 2001-09), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-61:2

**Quantity Requested:** 23,400 gallons per day.

**Water Use:** Landscape and roadway irrigation

**Place of Water Use:** Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-61:2,9

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Gentry Golf Course (2003-06)

**Applicant:** Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

**Date Completed Application Received:** May 22, 1995

**Aquifer:** Ewa Caprock Aquifer System, Oahu

**Water Source:** Gentry Golf Course (Well No. 2003-06), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-61:2

**Quantity Requested:** 130,200 gallons per day.

**Water Use:** Landscape irrigation

**Place of Water Use:** Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-61:Lots 2 & 54

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Gentry Area 24 (2001-10)

**Applicant:** Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

**Date Completed Application Received:** May 22, 1995

**Aquifer:** Ewa Caprock Aquifer System, Oahu

**Water Source:** Gentry Area 24 (Well No. 2001-10), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-10:17

**Quantity Requested:** 22,100 gallons per day.

**Water Use:** Landscape and roadway irrigation

**Place of Water Use:** Ewa by Gentry development, TMKs 9-1-10:17

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EP 22 & Wells 1 to 5 (1900-02, 17 to 20 & 1901-03)
Applicant: Hawaii Prince Golf Club  
91-1200 Ft. Weaver Rd.  
Ewa Beach, HI 96706  
Date Completed Application Received: May 22, 1995  
Aquifer: Ewa Caprock Aquifer System, Oahu  
Water Source: EP 22 & Wells 1 to 5 (1900-02, 17 to 20 & 1901-03), Hawaii Prince Golf Club, Ewa, Oahu, TMKs 9-1-10:6,7  
Quantity Requested: 500,000 gallons per day.  
Water Use: Golf course irrigation  
Place of Water Use: Hawaii Prince Club, Ewa, Oahu, TMK 9-1-10:6

Arbors (2001-07)
Applicant: The Arbors Homeowners Association  
91-920 La'aulu St., #1G  
Ewa Beach, HI 96706  
Date Completed Application Received: May 22, 1995  
Aquifer: Ewa Caprock Aquifer System, Oahu  
Water Source: Arbors (2001-07), The Arbors, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:32  
Quantity Requested: 63,000 gallons per day.  
Water Use: Landscape irrigation  
Place of Water Use: The Arbors, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:28,32,36-39

Palm Villa II (2001-08)
Applicant: Palm Villas II Association  
91-1119 Mikohu St., #D  
Ewa Beach, HI 96706  
Date Completed Application Received: May 10, 1995  
Aquifer: Ewa Caprock Aquifer System, Oahu  
Water Source: Palm Villa II (2001-08), Palm Villas II, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:27  
Quantity Requested: 48,000 gallons per day.  
Water Use: Landscape irrigation  
Place of Water Use: Palm Villas II, Ewa by Gentry, Ewa, Oahu, TMKs 9-1-61:13-15,25-27,34

Palm Court (2002-12)
Applicant: Palm Court Homeowners Association  
91-1019 Puanui St., #25R  
Ewa Beach, HI 96706  
Date Completed Application Received: May 22, 1995  
Aquifer: Ewa Caprock Aquifer System, Oahu  
Water Source: Palm Court (2002-12), Palm Court, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:22  
Quantity Requested: 66,000 gallons per day.  
Water Use: Landscape irrigation  
Place of Water Use: Palm Court, Ewa by Gentry, Ewa, Oahu, TMKs 9-1-61:17-23
Kapolei Irr (1905-08 & 10)

Applicant: The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

Date Completed Application Received: May 22, 1995

Aquifer: Ewa Caprock Aquifer System, Oahu

Water Source: Kapolei Irr (1905-08 & 10), Kapolei City development, TMK 9-1-16:01

Quantity Requested: 302,000 gallons per day.

Water Use: Nonpotable urban uses

Place of Water Use: City of Kapolei, Kapolei Business Park, Kapolei Regional Park, Oahu

Kapolei Irr A,B,C-1,D,E (2003-01,02,04,05,07)

Applicant: State of Hawaii
Housing Finance and Development Corp. Blvd.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

Date Completed Application Received: May 23, 1995

Aquifer: Ewa Caprock Aquifer System, Oahu

Water Source: Kapolei Irr A,B,C-1,D,E (2003-01,02,04,05,2003-07), Kapolei Golf Course, TMK 9-1-16:25

Quantity Requested: 1,494,000 gallons per day.

Water Use: Golf course and urban irrigation

Place of Water Use: Kapolei Golf Course and Villages of Kapolei, Oahu

Written objections or comments on the above applications may be filed by any person who has property interest in any land within the Ewa Caprock Groundwater Management Area, any person who will be directly and immediately affected by the proposed water use(s), or any other interested person. Written objections shall: (1) state property or other interest in the matter (provide TMK information); (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; and (3) state all grounds for objections to the proposed permit. Written objections must be received by June 22, 1995. Objections must be sent to 1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809 and 2) the applicant(s) at the above address(es).

COMMISSION ON WATER RESOURCE MANAGEMENT

EDWIN T. SAKODA for

for: MICHAEL D. WILSON
Chairperson

Dated: 6/30/95

TO: Mr. Kali Watson, Chairperson
Department of Hawaiian Home Lands
Dr. Lawrence Muku, Director
Department of Health
Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs
Ms. Esther Ueda, Executive Officer
Land Use Commission
Mr. Raymond Sato, Manager & Chief Engineer
Honolulu Board of Water Supply
Mr. Patrick Onishi, Director
Department of Land Utilization
Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: [Signature] Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the program's plans and objectives specific to your organization or department only. Please return this cover letter form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:
\[\]
\[\]
\[\]
\[\]
\[\]

Contact person: JUNE HARRISON Phone: 586-4337
Signed: 6/14/95
Date: 6/14/95
To: The Honorable Michael Wilson, Chairperson
   Commission on Water Resource Management

From: Dr. Bruce Anderson
       Deputy Director, Environmental Health

Subject: Water Use Permit Applications

Ewa Caprock Groundwater Management
Aiea, Oahu
TMK: 9-1-12: 05

Thank you for allowing us to review and comment on the subject applications contained in your memorandum dated May 30, 1995.

We have no objections to the use of the Ewa Caprock groundwater for irrigation purposes in the Ewa Management Area. However, there are plans to provide treated wastewater effluent for non-potable purposes in the immediate area of the Ewa Caprock Aquifer. The Department of Health recommends that Water Use Permit from this aquifer be granted only if no other alternative source is available, and only until the effluent is available to the applicant. Once the effluent becomes available, we recommend that the applicant be given a reasonable time to connect to the effluent water system, then the Water Use Permit, should be withdrawn. Provisions to include the proper infrastructure to implement these conditions should be required as part of any new construction plans.

All reuse plans must conform to applicable provisions of the Department of Health's "Guidelines for the Treatment and Use of Reclaimed Water." We reserve the right to review the detailed plans for conformance to these guidelines and to the Hawaii Administrative Rules, Chapter 11-62.

Should you have any questions, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4294.

C: WWB
TO:    Mr. Kali Watson, Chairperson
      Department of Hawaiian Home Lands

      Dr. Lawrence Miike, Director
      Department of Health

      Mr. Clayton H. W. Hee, Chairperson
      Office of Hawaiian Affairs

      Ms. Esther Ueda, Executive Officer
      Land Use Commission

      Mr. Raymond Sato, Manager & Chief Engineer
      Honolulu Board of Water Supply

      Mr. Patrick Onishi, Director
      Department of Land Utilization

      Mrs. Cheryl D. Soon, Chief Planning Officer
      Planning Department

FROM:  Michael D. Wilson, Chairperson
        Commission on Water Resource Management

SUBJECT: Water Use Permit Applications
         Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

We have no comments
We have no objections
Comments attached
Additional information requested
Extended review period requested

Contact person:  Luis A. Monrique  Phone:  596-1935
Signed:  [Signature]  Date:  06/23/95
TO: Mr. Kali Watson, Chairperson
Department of Hawaiian Home Lands

Dr. Lawrence Miike, Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Ms. Esther Ueda, Executive Officer
Land Use Commission

Mr. Raymond Sato, Manager & Chief Engineer
Honolulu Board of Water Supply

Mr. Patrick Onishi, Director
Department of Land Utilization

Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response: We have no comments

We have no objections

Comments attached

Additional information requested

Extended review period requested

Contact person: Herbert H. Minakami
Phone: 527-6183

Signed: RAYMOND H. SATO
Manager and Chief Engineer

Date: 6/3/95
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM: Rae M. Loui, Deputy Director  
Commission on Water Resource Management

SUBJECT: Request for Comments  
Water Use Permit Applications  
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss  
Attachment(s)

Response:  
(✓) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested

Signed: MANABU TAGOMORI  
Phone:  
Date: 6/13
Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Response:

We have no comments
We have no objections
Comments attached
Additional information requested
Extended review period requested

Contact person: Cathy Tilton
Phone: 70382
Signed: [Signature]
Date: 6/13/95
TO:  
Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM:  
Rae M. Loui, Deputy Director  
Commission on Water Resource Management

SUBJECT:  
Request for Comments  
Water Use Permit Applications  
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss  
Attachment(s)

Response:  6/7/95  
( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested  

DOFAW HAS NO COMMENTS OR OBJECTIONS TO THE PROPOSED REQUEST.

Contact person:  Administrator  
Phone:  587-0166  
Signed:  
Date:  

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.
TO: Aquatic Resources  
   Forestry and Wildlife/Natural Area Reserve System  
   Historic Preservation  
   Land Management  
   Office of Conservation and Environmental Affairs  
   State Parks  
   Water and Land Development 

From: Rae M. Loui, Deputy Director  
       Commission on Water Resource Management 

Subject: Request for Comments  
          Water Use Permit Applications  
          Ewa Caprock Groundwater Management Area, Oahu 

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We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss  
Attachment(s)  

Response:  
( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested  

Contact person: Phone: 

Signed: Date:
Mr. Alan Suwa  
Haseko (Ewa), Inc.  
820 Mililani St., Ste. 810  
Honolulu, HI 96813  

Dear Mr. Suwa:

Enclosed is a copy of the public notice for your water use permit application for Well No. 1902-01 which will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

Please be aware that there may be objections to your application. If objections are made, the objector is required to file such objections with the Commission and is also required to send you a copy of the objections.

You, or any other party, may respond to objections by filing a brief in support of your application with the Commission within ten (10) days of the filing of an objection. You, or the other party, must also send a copy of the response to the objector.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

LN:ss  
Encl.
TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development

FROM: Rae M. Loui, Deputy Director
      Commission on Water Resource Management

SUBJECT: Request for Comments
        Water Use Permit Applications
        Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:
( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: ___________________________ Phone: ___________________________
Signed: ___________________________ Date: ___________________________
TO: Other Interested Parties

FROM: Rae M. Loui, Deputy Director, Commission on Water Resource Management

SUBJECT: Request for Comments
Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or interferences with the programs, plans, and objectives of the organization or agency that you represent. Written objections should be made in accordance with Section 13-171-18 of our Administrative Rules and must be filed by the June 22, 1995 deadline.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: Phone:

Signed: Date:
TO: Mr. Kali Watson, Chairperson
   Department of Hawaiian Home Lands

Dr. Lawrence Miike, Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Ms. Esther Ueda, Executive Officer
Land Use Commission

Mr. Raymond Sato, Manager & Chief Engineer
Honolulu Board of Water Supply

Mr. Patrick Onishi, Director
Department of Land Utilization

Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

We have no comments
We have no objections
Comments attached
Additional information requested
Extended review period requested

Contact person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
Honorable Jeremy Harris, Mayor
City & County of Honolulu
City Hall
Honolulu, HI 96813

Dear Mayor Harris:

Notice of Applications for Water Use Permits
Ewa Caprock Groundwater Management Area, Oahu

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-171-17(a), we are sending you a copy of the public notice for water use permit applications for the Ewa Caprock Groundwater Management Area, which will be published in the Honolulu Star Bulletin.

These requests are for new water use permits to continue current or immediate nonpotable uses at new developments in Ewa, Oahu. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995.

In addition, Section 13-171-13(b), of our Administrative Rules, states:

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."

We would appreciate receiving your comments, within the next sixty (60) days, on whether these proposed nonpotable uses are consistent with county plans and policies.

Aloha,

[Signature]

MICHAEL D. WILSON

Enclosures
May 22, 1995

Ms. Rae M. Loui  
Deputy Director  
Commission on Water Resource Management  
1151 Punchbowl Street, Room 227  
Honolulu, Hawaii 96813  

Dear Ms. Loui:

Request to Continue Water Use Permit  
Haseko Well No. 1 (Well No. 1902-01)  
Ewa Caprock Groundwater Management Area, Oahu

This is to confirm our continued use of the permitted water allocation for the subject well after the July 12, 1995 expiration date.

We have no modifications to the present allocation or our permit terms. Water is still needed as construction of the golf course has been delayed because of difficulties beyond our control in obtaining the grading permit. Since the grading permit was not issued within a year after zoning approvals, City and County ordinances require that we now obtain a Plan Review Use Permit for our golf course development, which we anticipate to get before the end of the year.

In terms of actual water use, approval of our permit was granted effective as of the termination of land lease with Oahu Sugar Company, Limited (OSCo) in October 1994. The actual termination of lease, however, did not occur until March 31, 1995, as it was extended twice to accommodate final harvesting.
Letter to Rae Loui
RE: Request to Continue Water Use Permit
May 22, 1995
Page 2

In addition, we have attached an updated annual nonpotable demand projections to the year 2000 and 5-year demand projections to project build out as requested. If you have any questions, please contact me at 599-1444.

Very truly yours,

Nelson W.G. Lee
Executive Vice President

NWGL/AS:jn

Attachment

cc: Oshima, Chun, Fong & Chung
## PEARL HARBOR REGIONAL PLAN
### NON-POTABLE WATER DEMAND FORECAST

**APPLICANT:** EWA MARINA

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
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<th>COUNTY CODE</th>
<th>ZONING CODE</th>
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<th>COMMERCIAL NET ACRES</th>
<th>LIGHT INDUSTRY NET ACRES</th>
<th>RESORT NET ACRES</th>
<th>SCHOOLS, PARKS NET ACRES</th>
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</table>

(1) Single-Family residential development will be supplied exclusively by the potable system based on public health, marketing, and liability concerns of developers as stated in the 1987 Ewa Water Master Plan.

(2) Assumes 900,000 gpd per 18-hole golf course. A 27-hole golf course is proposed.

(3) Uses will be on the following TMK's: 9-1-11:1 thru 7; 9-1-12:2, 3, 5, 6, 7, 8, 9, 11, 12, 13, 16, 17 and 23. These parcels will be consolidated and resubdivided in the process of development.

(4) Proposed temporary use for irrigation of agricultural crops on former sugar lands awaiting development. Based on transfer of Water Use Permit from Oahu Sugar Co. and pending feasibility studies.
May 12, 1995

Mr. Michael Wilson, Chairperson,
and Members of the Commission on
Water Resource Management
State of Hawaii
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Re: Transfer of Water Use Permit/OSCo EP-27

Dear Mr. Wilson and Commissioners:

As evidenced by the attached, Oahu Sugar Company, Limited (OSCo), on April 1, 1995, has transferred its water use permit for 4.16 mgd drawn from OSCo wells EP 27A, 27B, 28, and 29 to HASEKO (Ewa), Inc. (HASEKO). These wells draw non-potable water from the Ewa caprock aquifer.

This transfer of permit is in accordance with Hawaii Revised Statutes Section 174C-59(a) inasmuch as the water will continue to be used to irrigate agricultural crops (albeit crops other than sugar cane) in the same location and in the same quantities as was authorized to OSCo.

HASEKO understands that should any of the conditions change in the future (such as a change from agricultural to urban use), that a modification of permit or an application for a new permit will be necessary.
Mr. Michael Wilson, Chairperson  
and Members of the Commission on  
Water Resource Management  
May 12, 1995  
Page 2

Your confirmation that this transfer is valid and approved will be appreciated. Please feel free to contact me at 599-1444 should you have any questions.

Very truly yours,

Nelson W.G. Lee  
Executive Vice President

Attachment

cc: Oahu Sugar Company, Limited
April 27, 1995

HASEKO (Ewa), Inc.
850 Mililani Street, 8th Floor
Honolulu, Hawaii 96813

Subject: Transfer of Water Permit from Oahu Sugar Company, Limited ("OSCo") to HASEKO (Ewa), Inc. ("HASEKO")

Gentlemen:

In connection with the termination of that certain Lease between HASEKO and OSCo dated June 24, 1991, as amended, OSCo has agreed to transfer to HASEKO that certain water permit issued to OSCo by the Commission on Water Resource Management ("CWRM") as more particularly described in Exhibit A attached hereto (the "Water Permit"). The Water Permit, and the allocation of water represented by said permit, is for the withdrawal of water from the wells and/or water sources listed in said Exhibit A. The transfer shall include all permits, rights and privileges granted pursuant to, or otherwise associated with, the Water Permit with respect to water use and the related wells and/or water sources to the extent such permits, rights and privileges are transferable. OSCo hereby represents and warrants that it has not previously transferred or encumbered the Water Permit.

By execution of this letter, and for good and sufficient consideration received by OSCo, OSCo hereby transfers, delivers and assigns to HASEKO the Water Permit and all rights and privileges of OSCo in and to the water from the wells and/or water sources referred to in the Water Permit. Such transfer and assignment shall be fully effective as of April 1, 1995.

HASEKO agrees to notify CWRM of this transfer, as required by State law. In the event HASEKO desires to modify the Water Permit, HASEKO shall make any necessary application at HASEKO's sole expense; provided, however, that upon HASEKO's request, OSCo shall cooperate with HASEKO, if necessary, in any such application.
Should the above terms of the transfer be acceptable, please acknowledge HASEKO's acceptance by signing and returning an executed copy of this letter to OSCo.

Sincerely yours,

A. James Wriston, III
Director, Plantations Real Estate

AGREED AND ACCEPTED:

HASEKO (EWA), INC.

By:

Name: Katsu Shimizu
Title: President

Date: May 1, 1995
EXHIBIT A

All permits, including all extensions, modifications and renewals thereof, issued by the State of Hawaii's Department of Land and Natural Resources or Commission on Water Resource Management to Oahu Sugar Company, Limited ("OSCo") for the use and withdrawal of water from the wells and/or water sources listed below on the lands previously leased by OSCo from HASEKO (Ewa), Inc., and all rights and privileges necessary or appropriate to the continued withdrawal and use of water from such wells and/or water sources, together with any and all existing preserved uses of such wells and/or water sources.

<table>
<thead>
<tr>
<th>Well Number:</th>
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<tr>
<td>Well Name:</td>
<td>EP 27A, 27B, 28, 29</td>
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<td>Original Permit Approval Date:</td>
<td>12/16/92</td>
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<td>Aquifer System:</td>
<td>Pu'uloa</td>
</tr>
</tbody>
</table>
Mr. Alan Suwa  
Haseko (Ewa), Inc.  
820 Millilani St., Suite 810  
Honolulu, HI 96813

Dear Mr. Suwa:

Notice of Water Use Permit Expiration  
Haseko Well No. 1 (Well No. 1902-01)  
Ewa Caprock Groundwater Management Area, Oahu

On July 13, 1994, the Commission on Water Resource Management (Commission) approved a water use permit for one-year interim use of 1.5 million gallons per day of brackish groundwater for Well No. 1902-01 for irrigation supply and dust control at the Ewa Marina project site. This water use permit is due to expire on July 12, 1995.

If you require continued use of this water after the July 12, 1995 expiration date, please confirm this in writing by May 22, 1995. Please indicate any modifications to the present allocation or any other permit term that should be made at this time. All proposed modifications should be fully described and supported. In addition, please attach updated annual nonpotable demand projections to the year 2000 and 5-year demand projections to project build-out for your caprock source(s).

All timely requests for new or continued use(s) of Ewa Caprock groundwater will be submitted for Commission action, tentatively, at the meeting of June 14, 1995. Failure to respond by the May 22, 1995 date will create a presumption of abandonment of the use beginning July 13, 1995. If you wish to revive the use after July 13, 1995, you must apply for a permit pursuant to §13-171-12 Hawaii Administrative Rules.

As you are aware, the Commission hired a consultant to develop a nonpotable water master plan for Central Oahu and the Ewa Plain. On April 3, 1995, you were sent a copy of the 3-part pre-final draft report, "Water Reclamation" (February 1995), which recommends reuse of treated sewage effluent as a means of recharging the caprock aquifer. Please do not overlook the May 15, 1995 deadline for submitting your comments on the draft report. Your participation and input is essential to the development and implementation of a successful nonpotable water master plan for Ewa, Oahu.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director
Testimony Presented to the
Commission on Water Resource Management
7/13/94
Regular Commission Meeting

Aloha, and thank you for the opportunity to present testimony to the Commission concerning Agenda #1, items 3, 4, 5, 6, 7, 9 and 11. I'm Toni 'Issen with the Native Hawaiian Advisory Council.

Item 3 Applications for Water Use Permits and Well Construction/Pump Installation Permits, Ewa Caprock Ground Water Management Area, Oahu

NHAC BELIEVES THAT THE CRITERIA USED TO ISSUE WATER USE PERMITS DOES NOT COMPLY WITH THE STATE WATER CODE OR ADMINISTRATIVE RULES. FURTHER, NO WATER USE PERMITS SHOULD BE ISSUED FROM THE EWA CAPROCK GROUND WATER MANAGEMENT AREA DRAWING FROM THE PUULOA AQUIFER SYSTEM BECAUSE IT IS OVER ALLOCATED.

In order to obtain a water use permit an applicant shall establish that the proposed use of water meets seven listed criteria. H.R.S. 174C-49(a), H.A.R. 13-171-13(a). These seven items are:

1. Can be accommodated with the available water source;
2. Is a reasonable-beneficial use as defined in section 174C-3;
3. Will not interfere with any existing legal use of water;
4. Is consistent with the public interest;
5. Is consistent with state and county general plans and land use designations;
6. Is consistent with county land use plans and policies; and
7. Will not interfere with the rights of the department of Hawaiian home lands as provided in section 221 of the Hawaiian Homes Commission Act.

In the submittals prepared by Commission staff, two tables outline the sustainable yield for the Puuloa and Kepolei aquifer systems. In table 1, it shows existing water uses and requested water uses. In combination these uses exceed the sustainable yield of the Puuloa aquifer.
PUULOA AQUIFER SYSTEM

<p>| | |</p>
<table>
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<tr>
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<td>Estimated Sustainable Yield</td>
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</table>

(all information taken from table 1)

Total allocations exceed the estimated sustainable yield of the Puuloa aquifer, given this situation it would seem impossible to meet criteria #1 - Whether the water use requested can be accommodated with the available water source. All requests cannot be accommodated by the available water source. On these grounds alone the water use permits should be denied. We are disappointed that the staff has not commented about the potential effects of pumpage exceeding sustainable yield and/or has included other factors mitigating those concerns. We need more information about which uses can and cannot be accommodated.

Furthermore, staff states, "because no objections have been submitted, staff finds that the conditions for a water use permit [the seven criteria] have been met." see p.6. The Water Code is clear, it is the applicant that must establish that all criteria for obtaining a permit are met. A permit cannot be granted on the basis of other agencies not filing objections with the Commission. In addition to considering other agency recommendations, it is the Commission that must determine based on the information presented to it by the applicant and staff recommendation whether to issue a permit.

The Water Commission is mandated to preserve, protect and manage Hawaii's precious water resource. Proper management of the resource is dependent on applying fair and just standards to all water allocation decisions. Those standards are clearly listed in H.R.S. 174C-49 and H.A.R. 13-171-13 and must be complied with as a matter of law.

Item 4  Oahu County Club, Well Modification and Water Use Permit Applications, OCC Irrigation Well (Well No. 2050-01)

Again, because no objections have been filed by other agencies this is held to mean that all criteria for a permit have been met. A permit cannot be issued unless the applicant has established that all criteria has been met.
Mr. Dante Carpenter  
Office of Hawaiian Affairs  
711 Kapiolani Blvd., Suite 500  
Honolulu, HI 96813  

Dear Mr. Carpenter:

Application for Water Use Permit  
Haseko Well No. 1 (Well No. 1902-01)  
Ewa Caprock Ground Water Management Area, Oahu

Thank you for your comments, dated July 5, 1994, on the water use permit application filed by Haseko (Ewa), Inc. for the Haseko Well No. 1 (Well No. 1902-01).

We share your concerns regarding the need for comprehensive long-term land and water use planning in West Oahu. The Commission on Water Resource Management is committed to working with the city and other state agencies to achieve this priority goal and ensure that future needs are met.

We have hired a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. The objectives of this study are to develop plans to provide, distribute, and market nonpotable water; to plan for an assured supply of low cost water resources for agriculture; and to plan for future viability of reclaimed water for irrigation in the long term. We expect the work will be completed in about six months time.

A copy of the preliminary recommendations will be transmitted to the Office of Hawaiian Affairs for review and comment. Your input is valuable and will be used to formulate the final recommendations that will be presented to the Commission. Again, we concur that planning for the future is necessary at this time. Adequate supplies of our precious water resources must be assured for future generations.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

I.N:ko  
c: Luis Manrique, OHA
November 3, 1994

Ms. Rae M. Loui
Deputy Director
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

Dear Ms. Loui:

RE: Temporary Water Use Permit for Haseko Well No. 1
by Haseko (Ewa), Inc. (State Well No. 1902-01)

The subject permit was approved by the Commission on July 13, 1994. Water allocation was requested for golf course, landscape, and maintenance irrigation, and for dust control on surrounding fallow areas upon termination of sugar operations. Water is to be withdrawn from an existing well used by Oahu Sugar Company (OSCO) situated on lands currently leased by Haseko. We indicated previously that when OSCO’s lease expires in October 1994, control of the subject well would revert back to Haseko. In accordance with Item 1(a) of the approved Staff Recommendation Report, the permit conditions would take effect upon termination of the OSCO lease.

This is to notify you that the term of the lease with OSCO has been extended to December 31, 1994, therefore, we do not anticipate making any withdrawals until termination of their lease.

Should you have any questions regarding this matter, please feel free to call me at 599-1444.

Sincerely yours,

HASEKO (EWA), INC.

Alan Suwa
Project Manager
ITEM 4

OAHU COUNTRY CLUB, WELL MODIFICATION AND WATER USE PERMIT APPLICATIONS. OCC IRRIGATION WELL (WELL NO. 2050-01)

Unanimously approved (Girald/Nobriga).

ITEM 3

APPLICATIONS FOR WATER USE PERMITS AND WELL CONSTRUCTION/PUMP INSTALLATION PERMITS. EWA CAPROCK GROUND WATER MANAGEMENT AREA, OAHU

The Estate of James Campbell (1905-08 & 10)
State of Hawaii, Housing Finance & Development Corp. (2003-01 to 05)
Hawaii Prince Golf Club (1900-02 & 17 to 20, 1901-03)
Gentry Hawaii, Ltd. (2001-03 to 05, 07, 08 & 2002-12)
Gentry Development Corp. (2001-09 & 10)
Haseko (Ewa), Inc. (1902-01)

Ms. Nakama recommended that the following be added under Recommendation 1 and presented an updated summary:

"a. Any water use permit granted for Well No. 1902-01 be effective as of October 1994, when the lease to Oahu Sugar Company expires."

The following items were brought up by the Commission members:

1. Why is it that there is not enough data on the wells as far pumping?

Many of the Gentry wells have been constructed in the last couple of years, therefore not much data have been received. Although the Oahu Sugar wells are old wells, there isn't much data on chlorides. Staff is in the process of establishing a network and identifying index wells that will monitor and track response.

2. When will the Non-potable Water Master Plan be completed and available for the Commission's use for decision making?

As projected, the draft recommendations will be available in about four months and the final report by December.


   a. Provide a means to encourage cooperation in monitoring resource and finding a feasible alternate nonpotable source.

   b. Immediate and long-term future viability of resource is uncertain.

4. Concern was expressed and users of the wells were asked to comply with providing data as necessary.

5. Why was July 12, 1995 chosen for the duration of the water use permits rather than when the Non-potable Master Plan is finalized?

   a. It would be a year from the Commission meeting where it is being heard and one year permits are being recommended.

   b. Although the Non-potable Master Plan would be finalized, the sources may not be immediately available.
c. There is nothing to prevent the Commission from hearing the permits again in an earlier timeframe.

d. Even if the Plan is finalized, it would still take additional time for Commission review and approval.

6. Some water should be saved for agriculture, not all should be given to development.

7. Shorten permit time period to emphasize the importance of using effluent wherever possible.

Applicants Gentry, Haseko, and Campbell Estate had no testimony. HFDC provided written testimony dated July 8 (see files).

Toni Bissen of Native Hawaiian Advisory Council (NHAC) provided written and oral testimony (see files).

Ms. Nakama clarified several questions presented by Ms. Ziegler of Sierra Club Legal Defense Fund.

Chairperson Ahue asked Mr. Thomas of HFDC to clarify Mr. Conant’s request to deviate from the guidelines relative to the issuance of interim permits, subject to annual review, because the sale of the golf course would “fall through”. He felt there should be some discussion relative to the policies and guidelines in regards to the sale. Mr. Thomas said timing is critical and asked the Commission to defer HFDC’s application until the next meeting so they can consult with the Commission staff.

Ms. Bissen commented that the Commission, in applying the Water Code, should be satisfied that the water request can be accommodated with the available water. With the information and uncertainties brought up, she felt that the first criterion was not established and that the standards should be adhered to. She asked what the rush was to act on the application.

Ms. Loui stated that the permits have expired and two months ago the Commission gave the applicants a two-month stay to continuing pumping. There is no official estimate for the caprock because it is a different type of resource, it is a brackish resource. Overpumpage is self-regulating in that the applicant would regulate their pumpage if it becomes too salty for use. Therefore the concern is not the same as for a basal lens.

In regards to HFDC’s permit, it would make sense to continue the temporary permit and this would not stop the Commission from revisiting the permit request next month.

In regards to the issue of compliance, Dr. Sybinsky asked if staff could report to the Commission on the figures. Chairperson Ahue stated that could be done administratively.

Unanimously approved as amended (Giral/ Nakata).

ITEM 5

DEPARTMENT OF TRANSPORTATION, APPLICATION FOR STREAM CHANNEL ALTERATION PERMIT. UNNAMED STREAM, MAKAHA, OAHU

Unanimously approved (Nobriga/Giral).
Chairperson and Members  
Commission on Water Resource Management  
State of Hawaii  
Honolulu, Hawaii  

Gentlemen:

Applications for Water Use Permits and  
Well Construction/Pump Installation Permits  
Ewa Caprock Ground Water Management Area, Oahu

Applicant:  
Landowner:

(Well No. 1905-08 & 10)  
The Estate of James Campbell  
Same

(Well Nos. 2003-01 to 05)  
State of Hawaii,  
Housing Finance & Dev. Corp.  
Same

(Well Nos. 1900-02 & 17 to 20, 1901-03)  
Hawaii Prince Golf Club  
Same

(Well Nos. 2001-03 to 05, 07, 08 & 2002-12)  
Gentry Hawaii, Ltd.  
Same

(Well No. 2001-09 & 10)  
Gentry Development Corp.  
Same

(Well No. 1902-01)  
Haseko (Ewa), Inc.  
Same

Background

The boundaries of the brackish Ewa Caprock Aquifer were officially adopted by the Commission on March 3, 1993, without any sustainable yield estimate. In the 1988-1992 timeframe, permits totalling 19.524 million gallons per day (mgd) were awarded mainly to existing irrigation uses (eg. Oahu Sugar Co.). Other permits totalling 39.608 mgd were for various salt water and highly brackish to saline water uses (chlorides > 1,000 MG/L) at the western end of the aquifer.

To satisfy the needs of new developments in the Kapolei and Puuloa areas of the caprock (Exhibit 1), temporary water use permits not exceeding one year were granted to the applicants listed in Exhibit 2. These temporary permits expired on April 28, 1994. At the May 18, 1994 Commission meeting, action on all pending applications were deferred to allow applicants an additional thirty (30) days to comply with the conditions of the temporary permits. These conditions were met within the specified deadline, and with the exception of the City Dept. of Housing and Community Development, all applicants
Chairperson and Members
Commission on Water Resource Management July 13, 1994

have submitted requests for renewal of the allocations described in their expired temporary permits.

In addition, three new applications for future uses of caprock water require action by the Commission. Haseko (Ewa), Inc. submitted a completed application on May 18, 1994 for a new water use from an existing caprock well. The other two applications were filed by the Gentry Development Corp. for new wells, pumps, and future water uses. One of these applications was deferred at the April 28, 1994 Commission meeting because consistency with county zoning had not been established. The second Gentry application on file was completed on June 9, 1994. Specific information regarding the sources, uses, notifications, objections, and field investigation(s) are described in Attachment A and the attached exhibits.

Analysis & Issues

The current guideline used for sustainable yield for water suitable for irrigation uses (chlorides < 1,000 MG/L) is 21 mgd. After cessation of sugarcane operations, the sustainable yield will be reduced to 16 mgd. Although Yuen & Associates, Inc. (1989) made these estimates based on three aquifer systems (Malakole, Puuloa, and Kapolei), the Commission did not officially adopt the separate aquifer systems. If the sustainable yield were divided between the three aquifer systems, the Puuloa Aquifer System may be presently over-allocated. Tables 1 & 2 show current allocations and pending applications for water use permits in relation to the unofficial sustainable yield estimates for the Puuloa and Kapolei Aquifer Systems.
TABLE 1. PUULO AQUIFER SYSTEM

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<tr>
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<td>(EP 22 &amp; Wells 1 to 5)</td>
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<td>Gentry Pacific, Ltd.</td>
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<td>(Soda Creek III)</td>
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<td>(Fort Weaver Apts.)</td>
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<td>(Temporary Irrigation)</td>
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<td>Haseko (Ewa), Inc. (Ewa Marina)***</td>
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</table>

* Refer to Exhibit 4 for a listing of other existing permits.
** Includes 0.9 mgd prior permitted use for Hawaii Prince Golf Club (see Exhibit 4).
*** Proposed Ewa Marina will result in a permanent reduction in storage capacity.
TABLE 2. KAPOLEI AQUIFER SYSTEM

<table>
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<td>State HFDC</td>
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<tr>
<td>(Kapolei Irr A,B,C,D,E)</td>
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<td>0.879</td>
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</table>

The available data on water quality and the effects of pumpage is limited. A network has not yet been established, and the data from the applicants is insufficient to determine impacts, let alone predict impacts. The Campbell Estate has proposed to construct a monitor well to collect data that will provide greater insight on the behavior and response of the aquifer. Other applicants should also be motivated to collect and contribute data for this type of analysis.

Given the uncertainties with respect to the present sustainable yield of the caprock aquifer and the impacts of land use changes on future water availability, an important policy matter is the use of reclaimed water. How much should the uncertainty in caprock water availability drive the encouragement of the use of reclaimed water?

At present, reuse water appears to be the most promising and practical solution in the long term. However, because additional treatment, infrastructure development, modification of governmental policies and regulations, and other factors must be worked out before this source may be utilized, reclaimed effluent is not a solution in the short term.

One of the conditions of the temporary permits was to develop a joint plan for conversion to an alternate nonpotable source. Reclaimed water from Honolulu Wastewater Treatment Plant was identified by all applicants as a potential nonpotable source. Other sources that were identified include Waiahole Ditch water and basal aquifer water. Efforts to identify and jointly convert to an alternate nonpotable source will be directed and coordinated by staff. However, the applicants must actively participate and cooperate in this process.

To address the expected increase in nonpotable water demand for urban uses, the Commission has hired a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. However, the scope of the work is broad and must be supported by the individual plans and programs of the applicants.

In the interim, staff feels that existing and authorized planned developments in the Ewa area should be supported, provided that the conditions for a water use permit set forth in §174C-49 are successfully met. There is clearly a need to develop a long-range plan and organization, and all decisions made in the interim should count towards this goal.

Issues related to the pending requests for temporary permit renewals are
summarized as follows (source locations are shown in Exhibits 1A to 1L monthly water use graphs are shown in Exhibits 3A to 3F):

1. **Hawaii Prince Golf Club** - Average use reported by the Hawaii Prince Golf Club has exceeded permitted use for the last seven months (Exhibit 3A). However, because usage is estimated based on the pump capacities of their six wells (Exhibit 1A), reported usage is most likely over-estimated. Contracts have been awarded to install flow meters in each of the wells, and usage will continue to be monitored over the next year.

Higher than average usage may be attributed to large evaporative losses from the ten interconnected lakes, which have a total surface area of 32 acres. The lakes were designed to function as necessary storage facilities and also provide golf course water features. It is estimated that roughly 150,000 gallons per day (gpd) are lost to evaporation. Seepage is minimal, as all lakes are lined. The build-up of salts in the soils is a very real and legitimate concern, and regular over-watering is necessary to leach the salts. In the past, the Commission has allocated extra water to address this problem.

The Hawaii Prince is actively engaged in working towards more efficient utilization of their water supplies. Replanting on fifty acres is scheduled and, beginning next month, wetting agents will be injected into the soils twice each month. Also, some perimeter areas are no longer irrigated. It is projected that the allocation described in the expired temporary permit plus a 10% increase above their total permitted use will be sufficient.

2. **Gentry Pacific, Ltd.** - Although the Geiger Apartment and Soda Creek III wells have not been used to date, well drilling is completed and pumps have been ordered and are expected to be operational within three to five weeks.

3. **Campbell Estate** - No usage of the well has been reported to date. However, a contract is being finalized to outfit the wells with pumps and contracts will be issued shortly for transmission mains to tie the pumps and well complex to existing nonpotable lines. It is expected that pumpage will begin by September 1994.

4. **State Housing Finance and Development Corp** - There are no issues related to this application. File Request for Permission Conditioned on Permit (Attached)

A summary of new applications is provided as follows:

1. **Gentry Development Corp.** - Applications have been submitted for two new wells for future irrigation uses.

The Fort Weaver Apt. Well will be used to supply the first phase of Gentry’s Fort Weaver Apt. project and the adjacent highway landscaping. The requested allocation of 48,400 gpd will be used for irrigation of 7.8 acres.

The application for Gentry’s Temporary Irrigation Well was originally submitted as a request for irrigation of a future golf course site. However, zoning for the golf course has not been approved and the revised application now indicates use will be for permanent and temporary landscape irrigation. The requested allocation is for 238,000 gpd to used on a total of 43.4 acres. The proposed well is a skimming well equipped with 2 pumps with capacities of 200 gallons per minute.

One issue with these applications is that estimated demands (5,400 and 6,200 gpd/acre) exceeds that determined by staff to be reasonable for this type of use (3,000 gpd/acre). Because the applicants’ projected demands varied widely and
Chairperson and Members
Commission on Water Resource Management
July 13, 1994

lacked consistency, staff used information from the Hawaii Water System Standards 1985, county consumption guidelines, discussions with other government agencies for dust control, and existing water use report information for golf courses in the Ewa area to derive estimates for different types of uses that are considered reasonable, fair, and consistent. Previous allocations for the temporary permits were based on these estimates.

The conservation of water should be made a priority, and staff feels applicants should be encouraged to develop and adhere to plans and programs designed to mitigate the dry climate and conserve the available water resources. Because these uses may potentially be in competition, an equitable method for allocating water is necessary.

These applications have been reviewed by the Mayor's Office, the Board of Water Supply, the Dept. of General Planning, the Department of Land Utilization, the Dept. of Health, the Dept. of Hawaiian Home Lands, the Office of Hawaiian Affairs, and all the division within the State Dept. of Land and Natural Resources. Because no objections to these applications were submitted, staff finds that the conditions for a water use permit have been met, provided that the allocation approved is reasonable for this type of use.

This submittal was finalized on the morning of the July 7, 1994 deadline for filing objections to the Temporary Irrigation Well applications. Any objections received by the deadline will be brought forth during the Commission meeting.

2. Haseko (Ewa), Inc. - The application for the Haseko Well No. 1 specifies that the water will be used for golf course, landscape, and maintenance irrigation and for dust control on surrounding fallow areas, formerly in sugarcane. The projected demands are consistent with staff's estimates for these uses.

The water will be drawn from a well currently being used by Oahu Sugar Co. The current allocation for the well is 4.16 mgd. When the lease expires in October 1994, control of the well will revert back to Haseko. The present allocation will be reduced from 4.16 mgd to 1.5 mgd. Therefore, approval of this application will not result in greater draw from the system.

The application was sent for review by the Mayor's Office, the Board of Water Supply, the Dept. of General Planning, the Department of Land Utilization, the Dept. of Health, the Dept. of Hawaiian Home Lands, the Office of Hawaiian Affairs, and all the division within the State Dept. of Land and Natural Resources. Because no objections have been submitted, staff finds that the conditions for a water use permit have been met.

This submittal was finalized on the morning of the July 7, 1994 deadline for filing objections to the application. Any objections received by the deadline will be brought forth during the Commission meeting.

RECOMMENDATION

Staff recommends that the Commission:

1. Approve the issuance of temporary water use permits which shall be valid until July 12, 1995, to the applicants with completed applications listed in Tables 1 and 2. The permits shall be for allocations described in Tables 1 and 2, for the reasonable and beneficial uses described in the applications, and from the wells specified in their applications, except for the Gentry Development Corp. and the Hawaii Prince Golf Club.

2. Approve the issuance of a well construction permit and a temporary water use permit.
permit to the Gentry Development Corp. for the reasonable and beneficial use of 23,400 gallons per day of nonpotable water from the Fort Weaver Apt. Well (Well No. 2001-09) for landscape and roadway irrigation use on 7.8 acres.

a. The well construction permit shall be subject to the standard conditions listed in Attachment D.

b. The pump installation permit shall be approved administratively pending the results of the drilling and testing.

c. The temporary water use permit shall be valid until July 12, 1995.

3. Approve the issuance of a well construction permit and a temporary water use permit to the Gentry Development Corp. for the reasonable and beneficial use of 130,200 gallons per day of nonpotable water from the Temporary Irrigation Well (Well No. 2001-10) for permanent and temporary landscape irrigation on 43.4 acres.

a. The well construction permit shall be subject to the standard conditions listed in Attachment D.

b. The pump installation permit shall be approved administratively pending the results of the drilling and testing.

c. The temporary water use permit shall be valid until July 12, 1995.

Approve the issuance of a temporary water use permit which shall be valid until July 12, 1995, to the Hawaii Prince Golf Club, for the reasonable and beneficial use of 129,600 per day of nonpotable water from the combined pumpage of Wells 1 to 5 and EP 22 (Well Nos. 1900-02, 17 to 20 & 1901-03), for leaching salts and supplemental irrigation water for the golf course.

a. Flow meters shall be installed in each well within three months from the date of this submittal.

5. Require that applicants cooperate with the Commission’s initiative in the development of the Nonpotable Water Master Plan for Central and Leeward Oahu.

6. Require that all temporary permits be subject to the standard conditions of a water use permit listed in Attachment B and the Conservation conditions listed in Attachment C.

Respectfully submitted,

[Signature]

RAE M. LOUI
Deputy Director

Attach.

APPROVED FOR SUBMITTAL:

KEITH W. AHUE, Chairperson
### WATER USE PERMIT DETAILED INFORMATION

**Source Information**

**AQUIFER:**

- **Sustainable Yield:**
- **Existing Water Use Permits:**
- **Available Allocation:**
- **Total of other pending allocations:**

#### 1. WELL:

- **Location:**
- **Year Drilled:**
- **Casing Diameter:**
  - **Elevations (msl= 0 ft.)**
    - **Water Level:**
    - **Ground:**
    - **Bottom of Solid Casing:**
    - **Bottom of Perforated:**
    - **Bottom of Open Hole:**
- **Total Depth:**
- **Grouted Annulus Depth:**
- **Pump Capacity**

**Ewa Caprock Aquifer System, Oahu**

**Fort Weaver Apt. Well (Well No. 2001-09)**

- **Ewa by Gentry, Oahu, TMK:9-1-61:2**
  - **Location:**
  - **Year Drilled:**
  - **Casing Diameter:**
  - **Elevations (msl= 0 ft.)**
    - **Water Level:**
    - **Ground:**
    - **Bottom of Solid Casing:**
    - **Bottom of Perforated:**
    - **Bottom of Open Hole:**
  - **Total Depth:**
  - **Grouted Annulus Depth:**
  - **Pump Capacity**

**Temporary Irrigation Well (Well No. 2001-10)**

**Ewa by Gentry, Oahu, TMK:9-1-61:2**

**Haseko Well No. 1 (Well No. 1902-01)**

**Haseko Golf Course site, Oahu, TMK:9-1-12:5**

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<td><strong>NA gpm</strong></td>
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<tr>
<td><strong>Bottom of Perforated:</strong></td>
<td></td>
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<td><strong>Pump Capacity</strong></td>
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<td><strong>NA ft.</strong></td>
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</table>

**ATTACHMENT A**
Use Information

1. Quantity Requested: 48,400 gallons per day.
   Proposed Type of Water Use: Landscape irrigation for 7.8 acres.
   Place of Water Use: Ewa by Gentry, Oahu, at TMK: 9-1-61:2&8

   Reported Water Usage: NA mgd
   Nearby Similar Water Usage: 3,000 gpd

2. Quantity Requested: 238,000 gallons per day.
   Proposed Type of Water Use: Landscape irrigation for 43.4 acres.
   Place of Water Use: Ewa by Gentry, Oahu, at TMK: 9-1-61:2&54

   Reported Water Usage: NA mgd
   Nearby Similar Water Usage: 3,000 gpd

3. Quantity Requested: 1,500,000 gallons per day.
   Proposed Type of Water Use: Golf course, roadway, and maintenance irrigation; dust control.
   Place of Water Use: OSCo field 88, Oahu, at TMK: 9-1-12:5,6&7

   Reported Water Usage: 6,551 mgd
   Nearby Similar Water Usage: 1,000 to 4,000 gpd/acre

   Ewa Caprock Aquifer System
   Current 12-Month Moving Average Withdrawal: 15.131* mgd

   * Does not include withdrawals at wells with expired temporary permit or withdrawals from Malakole area.

Nearby Surrounding Wells and Other Registered Ground Water Use

The Gentry developments are proposing to use other nearby wells in the vicinity of Well Nos. 2001-09 & 10. By distributing the pumpage over a large area, as opposed to one central pumping station, impacts to the aquifer should be minimized; other benefits are clearly derived from this strategy of well development. There are no other wells within a mile of Haseko’s Well No. 1. The 1992 Draft of the Oahu Water Management Plan did not provide an estimate for 1990 withdrawals.
Chairperson and Members
Commission on Water Resource Management
July 13, 1994

Public Notice

In accordance with HAR §13-171-17, a public notice was published in the Star-Bulletin on June 15, 1994 and June 22, 1994 and copies of the notice were sent to the Mayor's office and the Board of Water Supply. Additional notice copies were sent to the County Council and Department of Water Supply. Copies of the completed application were sent to the Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, Aquatic Resources & Historic Preservation Divisions of the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by July 7, 1994.

Objections

The public notice specifies that an objector meet the following requirements: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; (3) state all grounds for objections to the proposed permits, (4) provide a copy of the objection letter(s) to the applicant, and (5) submit objections meeting the previous requirements to the Commission by July 7, 1994.

To the best of staff's knowledge there are no objectors who have property interest within the Ewa Caprock Aquifer System or who will be directly and immediately affected by the proposed water use.

Briefs in Support

Responses to objections, or briefs in support, regarding the application are required to be filed with the Commission ten (10) days after an objection is filed and, presumably, copies are served to the applicant. No briefs in support were filed with the Commission.

Field Investigation

Gentry's water sources and proposed uses were not investigated as the wells have not been drilled. Staff is in the process of verifying OSCo well sources.
STANDARD WATER USE PERMIT CONDITIONS

1. The ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "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 not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." *(HAR §13-171-2).*

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HAR §13-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Homelands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

4. The ground water use approved must not interfere with surface or ground water rights or reservations.

5. The ground water use approved must not interfere with interim or permanent instream flow standards or policies as determined by the Commission. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use permit is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and staff submittal approved by the Commission at its July 13, 1994 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

9. The water use permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect water sources in quantity, quality, or both;
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June 1987, shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Homes, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

ATTACHMENT B
Chairperson and Members  
Commission on Water Resource Management  
July 13, 1994

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a monthly basis in accordance the Commission’s September 16, 1992 action on reporting requirements;

12. The water use permit shall be subject to the Commission’s periodic review of the applicable aquifer’s sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the Ewa Caprock Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission's prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

14. The use(s) authorized by law and by the water use permit do not constitute ownership rights.

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies’ permits and conditions pertaining to water use or the water resource.

16. The permittee shall prepare and submit a water shortage plan within 30 days of issuance of the permit to assist the Commission in fulfilling HAR §13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Ewa Caprock Ground Water Management Area.

17. The water use permit granted shall be an temporary permit valid until July 12, 1995.

18. The water use permit shall be issued only after AG review.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies to Stream Protection and Management (SPAM), as well as legislative mandates to protect stream resources.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   a. Reduce the demand for non-potable water by:
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.
   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.
   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
STANDARD WELL CONSTRUCTION/PUMP INSTALLATION PERMIT CONDITIONS

1. The Commission shall be notified before work commences.

2. The well construction/pump installation permit shall be for construction, testing, and installation of a pump of capacities specified in the application, or less, pump in the well, as determined by the pumping test results. The applicant shall coordinate with the Commission and conduct a pumping test in accordance with the protocol established by the Commission. A means to accurately measure water levels, acceptable to the Commission, shall also be provided. The applicant shall submit to the Commission the test results and proposed permanent pump information, based on the test, for approval by the Chairperson. No permanent pump may be installed and no water used from the well without the Chairperson's approval.

3. The proposed use shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct and pump water from a well shall not constitute a determination of correlative water rights. The permittee is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

4. The applicant shall comply with all applicable laws, rules, and ordinances.

5. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

6. The well construction/pump installation permit may be revoked if work is not started within six (6) months after the methodology and analysis of the test results are agreed upon. The work proposed in the well construction/pump installation permit application shall be completed within two years from the date of permit issuance.

7. That the pumping test shall follow the aquifer pump testing protocol established by the Commission. Prior to conducting the aquifer pump test, the applicant shall mutually agree with the Commission staff to a methodology and analysis of the test results.

8. The following shall be submitted to the Commission within thirty (30) days after completion of work:
   a. Well completion report.
   b. Elevations of well (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.

9. The well shall not be used for drinking water unless it is properly tested and approved by the State Department of Health.

10. The well construction/pump installation water use permit application and staff submittal approved by the Commission at its July 13, 1994 meeting are incorporated into the permit by reference.

11. The permit shall be subject to review by the Attorney General.
EXHIBIT 1
<table>
<thead>
<tr>
<th>APPLICANT</th>
<th>WELL NO.</th>
<th>WELL NAME</th>
<th>APPROVAL</th>
<th>GDP mgd</th>
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6 Permits Totaling 1.796

14 Permits Totaling 1.771

20 Permits Totaling 3.567
HAWAII PRINCE G.C. COMBINED PUMPAGE
(WELL NOS. 1900-02, 17 to 20)

MONTHLY VALUES  12-MAV  REQUESTED AMOUNT

EXHIBIT 3A
GENTRY PACIFIC, LTD. PUMPAGE
PALM VILLA 2 WELL (Well No. 2001-08)

MONTHLY VALUES  REQUESTED AMOUNT  CHLORIDE LEVEL

EXHIBIT 3D
GENTRY PACIFIC, LTD. PUMPAGE
PALM COURT 3 WELL (Well No. 2002-12)

MONTHLY VALUE  12-MAV  REQUESTED AM  CHLORIDE LEVEL

EXHIBIT 3E
STATE HFCD EWA-CAPROCK PUMPAGE
KAPOLEI WELLS (WELL-NOS. 2003-01 to 05)

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Aquifer System: KAPOLEI

| FINANCE REALTY                  | 1904-02  | Makakilo GC | 03/15/90 | 1.150 |
| FINANCE REALTY, LTD.           | 1904-03  | Makakilo GC STBY | 04/24/91 | 0.000 |
|                               |          |           | 2 Permits Totaling | 1.150 |

2 Permits Totaling 1.150

STATEWIDE THERE ARE 2 PERMITS TOTALING 1.150

Exhibit A
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<td>Plus: Total of other OSCO permits</td>
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<td>Potential available when OSCO ceases operations</td>
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* Control of well reverts back to Haseko in October 1994 when lease to OSCO expires.
all the upslope surface runoff for recharge as well. In short, HFDC has provided for perpetual prudent resource management through conservative use and through thoughtful planning for continued replenishment of the aquifer.

HFDC seeks the reasonable ability to transfer [the State's] correlative rights with respect to continued permanent use of the caprock wells in order to accomplish its mission.

Your thoughtful consideration and expeditious response to this request will be greatly appreciated. If there are any questions please call me at 587-0640.

Sincerely,

[Signature]
JOSEPH K. COWAN
Executive Director
ultimate home owners and in all probability a segment of "affordable" purchasers would have been displaced. The golf course provides a viable economic, as well as technical, solution to the drainage requirements of this "affordable housing" Master Planned Community in addition to recharging the caprock aquifer with all onsite surface runoff and all offsite upslope surface runoff.

The Commission has previously established a precedent by ruling and granting preference to the HFDC in allocating potable water for the State of Hawaii's "affordable" housing projects.

2. The sale of the Kapolei Golf Course is essential to the mission of HFDC. HFDC is a State created agency whose sole existence is predicated on providing "affordable housing" for the people of the State of Hawaii. HFDC is a "collateral" agency to the Department of Land and Natural Resources (DLNR), Commission on Water Resource Management, and as such the strategic interests of the DLNR/CWRM and HFDC are somewhat common in nature and the overall interests of the State will be best served with the successful sale of the Kapolei golf Course.

The sale of the Kapolei Golf Course will replenish monies into the Homes Revolving Fund which is essential to the continued mission of HFDC in the production of "affordable housing" as it relates to the State's Comprehensive Housing Strategy.

3. Permanent "conditional" use is justifiably reasonable and prudent. Until such time as the CWRM can reasonably determine the future sustainable yield of the caprock aquifer, and as long as the continued use of HFDC's wells do not significantly diminish the calculated sustainable yield, continued use of the caprock wells should be considered as a reasonable request. As the CWRM currently permits use for salt water wells, salinity is of no concern except to the user; therefore, health, safety, or permanent environmental damage would be the normal concerns that would preclude issuance of permanent use permits.

Also, and as previously mentioned, HFDC has invested literally millions of dollars into the development of a "closed loop" water resource management system which replenishes the caprock aquifer with not only the on-site generated surface runoff, but also by capturing
Mr. Keith W. Ahue
Department of Land and Natural Resources
Commission on Water Resources Management
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Ahue:

Thank you for the opportunity to review the water use permit application for Haseko (Ewa), Inc. for Well 1902-01, EP 27.

The Office of Hawaiian Affairs urges the Commission on Water Resource Management to halt the granting of this and all water use permits concerning water presently allocated to sugarcane lands. In dealing with the issue of water resources being released as the sugarcane industry phases out, the Commission must produce a comprehensive long-term plan which envisions the allocation of water reserves for groups which presently have virtually no access to existing water resources. Without that plan, there is a real danger that the present vacuum in land and water use planning could provide ripe opportunities for people and organizations seeking water use monopoly.

Sincerely yours,

Dante K. Carpenter
Administrator
Ms. Rae M. Loui, Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii  96809

Dear Ms. Loui:

Subject: Amended Request for Extension of Water Use Permits  
Ewa Caprock Water Management Area  
Kapolei Irrigation Wells A, B, C, D, & E  
(Wells Nos.: 2003-01 to 2003-05)

The Housing Finance and Development Corporation (HFDC) herewith respectfully requests that HFDC's prior request for extension of well permits dated April 15, 1994, be amended as follows:

From: A request for extension for a period of twelve months from April 27, 1994 until April 27, 1995.

To: A request for a permanent "conditional" use permit, until such time as the Commission on Water Resource Management (CWRM) considers a "viable alternative source" of non-potable water is readily available for use, or that continued use of the caprock wells presently in use by HFDC is detrimental to the long term sustainable yield of the Kapolei Caprock Aquifer.

It is presently HFDC's understanding that a "viable alternative source" of non-potable water is defined as: 1) Availability of Waiahole Ditch water within an economically obtainable distance to the user, or 2) Availability of "R-2" classified wastewater, from Honouliuli WWTP, within an economically obtainable distance to the user and at an economically justifiable usage cost.
This request for an amendment to our application is precipitated by the following circumstances:

1. On June 9, 1994, HFDC's Board of Directors preliminarily approved the Kapolei Peoples, Inc. ("KPI") as the purchaser of the Kapolei Golf Course. KPI was the only party who submitted a proposal for the purchase of the Kapolei Golf Course and is ready, willing, and able to consummate the sale.

2. On June 22, 1994 the Executive Director of HFDC and staff met with the attorney for KPI to discuss the conditions of sale as proposed by KPI. The most significant condition proposed by the prospective purchaser was for a permanent commitment for 1.0 million gallons per day of non-potable irrigation water. This condition of sale, if not overcome, will prevent any further negotiation of a sales agreement between HFDC and KPI. Simply stated, if irrigation water cannot in some form be guaranteed to the prospective purchaser, there will be no sale.

3. HFDC is currently operating the wells on annual renewable "temporary use permits" which condition is unacceptable to the purchaser, KPI.

In support of the above stated request for a "conditional" permanent permitted use, and as additional historical and general information, the following facts are submitted for your consideration:

1. The Kapolei Golf Course is an "affordable housing" related project to the Villages of Kapolei Master Planned Community. The golf course serves as an integral major component in the overall master drainage system for the Villages of Kapolei (Villages), a State of Hawaii "affordable housing" project. The housing Villages themselves could not have been developed without the construction of the golf course retention/detention basin. In addition to the unique "closed loop" aquifer recharge aspects of the drainage system, the excavation of the golf course provided 2.5 million cubic yards of free fill-material required to remove approximately 1/3 of the Villages from a flood inundation zone. An alternative drainage system could have been developed, but not without tremendous additional cost to the development of the Villages. The added costs would have been passed on to the
Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Applications for Water Use Permits and
Well Construction/Pump Installation Permits
Ewa Caprock Ground Water Management Area, Oahu

Applicant:  
Landowner:

(Well No. 1905-08 & 10)
The Estate of James Campbell  
Same

(Well Nos. 2003-01 to 05)
State of Hawaii,  
Housing Finance & Dev. Corp.  
Same

(Well Nos. 1900-02 & 17 to 20, 1901-03)
Hawaii Prince Golf Club  
Same

(Well Nos. 2001-03 to 05,07,08 & 2002-12)
Gentry Hawaii, Ltd.  
Same

(Well No. 2001-09 & 10)
Gentry Development Corp.  
Same

(Well No. 1902-01)
Haseko (Ewa), Inc.  
Same

Background

The boundaries of the brackish Ewa Caprock Aquifer were officially adopted by the Commission on March 3, 1993, without any sustainable yield estimate. In the 1988-1992 timeframe, permits totalling 19.524 million gallons per day (mgd) were awarded mainly to existing irrigation uses (eg. Oahu Sugar Co.). Other permits totalling 39.608 mgd were for various salt water and highly brackish to saline water uses (chlorides > 1,000 MG/L) at the western end of the aquifer.

To satisfy the needs of new developments in the Kapolei and Pualoa areas of the caprock (Exhibit 1), temporary water use permits not exceeding one year were granted to the applicants listed in Exhibit 2. These temporary permits expired on April 28, 1994. At the May 18, 1994 Commission meeting, action on all pending applications were deferred to allow applicants an additional thirty (30) days to comply with the conditions of the temporary permits. These conditions were met within the specified deadline, and with the exception of the City Dept. of Housing and Community Development, all applicants
have submitted requests for renewal of the allocations described in their expired temporary permits.

In addition, three new applications for future uses of caprock water require action by the Commission. Haseko (Ewa), Inc. submitted a completed application on May 18, 1994 for a new water use from an existing caprock well. The other two applications were filed by the Gentry Development Corp. for new wells, pumps, and future water uses. One of these applications was deferred at the April 28, 1994 Commission meeting because consistency with county zoning had not been established. The second Gentry application on file was completed on June 9, 1994. Specific information regarding the sources, uses, notifications, objections, and field investigation(s) are described in Attachment A and the attached exhibits.

Analysis & Issues

The current guideline used for sustainable yield for water suitable for irrigation uses (chlorides < 1,000 MG/L) is 21 mgd. After cessation of sugarcane operations, the sustainable yield will be reduced to 16 mgd. Although Yuen & Associates, Inc. (1989) made these estimates based on three aquifer systems (Malakole, Puuloa, and Kapolei), the Commission did not officially adopt the separate aquifer systems. If the sustainable yield were divided between the three aquifer systems, the Puuloa Aquifer System may be presently over-allocated. Tables 1 & 2 show current allocations and pending applications for water use permits in relation to the unofficial sustainable yield estimates for the Puuloa and Kapolei Aquifer Systems.
TABLE 1. PUULO AQUIFER SYSTEM

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PUULO AQUIFER SYSTEM (mgd)</th>
<th>12-MAY (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sustainable Yield Estimate</strong></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Less: Other Existing Permits*</td>
<td>(18.670)</td>
<td>15.131</td>
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<tr>
<td>Available Allocation</td>
<td>-3.670</td>
<td></td>
</tr>
<tr>
<td>Expired Temporary Permits:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hawaii Prince Golf Club (EP 22 &amp; Wells 1 to 5)</td>
<td>0.036</td>
<td>1.770**</td>
</tr>
<tr>
<td>Gentry Pacific, Ltd. (Geiger Park)</td>
<td>0.030</td>
<td>0.046</td>
</tr>
<tr>
<td>(Golf Villa 1)</td>
<td>0.063</td>
<td>0.028</td>
</tr>
<tr>
<td>(Palm Villa 2)</td>
<td>0.048</td>
<td>0.019</td>
</tr>
<tr>
<td>(Palm Court 3)</td>
<td>0.066</td>
<td>0.022</td>
</tr>
<tr>
<td>(Geiger Apartment)</td>
<td>0.400</td>
<td>0.000</td>
</tr>
<tr>
<td>(Soda Creek III)</td>
<td>0.200</td>
<td>0.000</td>
</tr>
<tr>
<td>Pending Complete Applications:</td>
<td>(1.786)</td>
<td></td>
</tr>
<tr>
<td>Gentry Development Corp. (Fort Weaver Apts.)</td>
<td>0.048</td>
<td></td>
</tr>
<tr>
<td>(Temporary Irrigation)</td>
<td>0.238</td>
<td></td>
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<tr>
<td>Haseko (Ewa), Inc. (Haseko Well No. 1)</td>
<td>1.500</td>
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<tr>
<td>Pending Incomplete Applications:</td>
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<td></td>
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<tr>
<td>Haseko (Ewa), Inc. (Ewa Marina)***</td>
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<td></td>
</tr>
</tbody>
</table>

* Refer to Exhibit 4 for a listing of other existing permits.
** Includes 0.9 mgd prior permitted use for Hawaii Prince Golf Club (see Exhibit 4).
*** Proposed Ewa Marina will result in a permanent reduction in storage capacity.

See Supplemental Table 1 (attached)
### TABLE 2. KAPOLEI AQUIFER SYSTEM

<table>
<thead>
<tr>
<th>ITEM</th>
<th>KAPOLEI AQUIFER SYSTEM (mgd)</th>
<th>12/MAY (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Yield Estimate</td>
<td>5</td>
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</tr>
<tr>
<td>Less: Other Existing Permits*</td>
<td>(1.150)</td>
<td>0.000</td>
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<tr>
<td>Available Allocation</td>
<td>3.850</td>
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<tr>
<td>Expired Temporary Permits:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campbell Estate (Kapolei Irr I)</td>
<td>(1.796)</td>
<td>0.879</td>
</tr>
<tr>
<td>State HFDC (Kapolei Irr A,B,C,D,E)</td>
<td>0.302</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>1.494</td>
<td>0.879</td>
</tr>
</tbody>
</table>

The available data on water quality and the effects of pumpage is limited. A network has not yet been established, and the data from the applicants is insufficient to determine impacts, let alone predict impacts. The Campbell Estate has proposed to construct a monitor well to collect data that will provide greater insight on the behavior and response of the aquifer. Other applicants should also be motivated to collect and contribute data for this type of analysis.

Given the uncertainties with respect to the present sustainable yield of the caprock aquifer and the impacts of land use changes on future water availability, an important policy matter is the use of reclaimed water. How much should the uncertainty in caprock water availability drive the encouragement of the use of reclaimed water?

At present, reuse water appears to be the most promising and practical solution in the long term. However, because additional treatment, infrastructure development, modification of governmental policies and regulations, and other factors must be worked out before this source may be utilized, reclaimed effluent is not a solution in the short term.

One of the conditions of the temporary permits was to develop a joint plan for conversion to an alternate nonpotable source. Reclaimed water from Honolulu Wastewater Treatment Plant was identified by all applicants as a potential nonpotable source. Other sources that were identified include Waiahole Ditch water and basal aquifer water. Efforts to identify and jointly convert to an alternate nonpotable source will be directed and coordinated by staff. However, the applicants must actively participate and cooperate in this process.

To address the expected increase in nonpotable water demand for urban uses, the Commission has hired a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. However, the scope of the work is broad and must be supported by the individual plans and programs of the applicants.

In the interim, staff feels that existing and authorized planned developments in the Ewa area should be supported, provided that the conditions for a water use permit set forth in §174C-49 are successfully met. There is clearly a need to develop a long-range plan and organization, and all decisions made in the interim should count towards this goal.

Issues related to the pending requests for temporary permit renewals are
summarized as follows (source locations are shown in Exhibits 1A to 1I, monthly water use graphs are shown in Exhibits 3A to 3F):

1. **Hawaii Prince Golf Club** - Average use reported by the Hawaii Prince Golf Club has exceeded permitted use for the last seven months (Exhibit 3A). However, because usage is estimated based on the pump capacities of their six wells (Exhibit 1A), reported usage is most likely over-estimated. Contracts have been awarded to install flow meters in each of the wells, and usage will continue to be monitored over the next year.

Higher than average usage may be attributed to large evaporative losses from the ten interconnected lakes, which have a total surface area of 32 acres. The lakes were designed to function as necessary storage facilities and also provide golf course water features. It is estimated that roughly 150,000 gallons per day (gpd) are lost to evaporation. Seepage is minimal, as all lakes are lined. The build-up of salts in the soils is a very real and legitimate concern, and regular over-watering is necessary to leach the salts. In the past, the Commission has allocated extra water to address this problem.

The Hawaii Prince is actively engaged in working towards more efficient utilization of their water supplies. Replanting on fifty acres is scheduled and, beginning next month, wetting agents will be injected into the soils twice each month. Also, some perimeter areas are no longer irrigated. It is projected that the allocation described in the expired temporary permit plus a 10% increase above their total permitted use will be sufficient.

2. **Gentry Pacific, Ltd.** - Although the Geiger Apartment and Soda Creek III wells have not been used to date, well drilling is completed and pumps have been ordered and are expected to be operational within three to five weeks.

3. **Campbell Estate** - No usage of the well has been reported to date. However, a contract is being finalized to outfit the wells with pumps and contracts will be issued shortly for transmission mains to tie the pumps and well complex to existing nonpotable lines. It is expected that pumpage will begin by September 1994.

4. **State Housing Finance and Development Corp** - There are no issues related to this application. (See request for renewed conditional use permit (attached))

A summary of new applications is provided as follows:

1. **Gentry Development Corp.** - Applications have been submitted for two new wells for future irrigation uses.

   The Fort Weaver Apt. Well will be used to supply the first phase of Gentry’s Fort Weaver Apt. project and the adjacent highway landscaping. The requested allocation of 48,400 gpd will be used for irrigation of 7.8 acres.

   The application for Gentry’s Temporary Irrigation Well was originally submitted as a request for irrigation of a future golf course site. However, zoning for the golf course has not been approved and the revised application now indicates use will be for permanent and temporary landscape irrigation. The requested allocation is for 238,000 gpd to used on a total of 43.4 acres. The proposed well is a skimming well equipped with 2 pumps with capacities of 200 gallons per minute.

   One issue with these applications is that estimated demands (5,400 and 6,200 gpd/acre) exceeds that determined by staff to be reasonable for this type of use (3,000 gpd/acre). Because the applicants’ projected demands varied widely and
lacked consistency, staff used information from the Hawaii Water System Standards 1985, county consumption guidelines, discussions with other government agencies for dust control, and existing water use report information for golf courses in the Ewa area to derive estimates for different types of uses that are considered reasonable, fair, and consistent. Previous allocations for the temporary permits were based on these estimates.

The conservation of water should be made a priority, and staff feels applicants should be encouraged to develop and adhere to plans and programs designed to mitigate the dry climate and conserve the available water resources. Because these uses may potentially be in competition, an equitable method for allocating water is necessary.

These applications have been reviewed by the Mayor's Office, the Board of Water Supply, the Dept. of General Planning, the Department of Land Utilization, the Dept. of Health, the Dept. of Hawaiian Home Lands, the Office of Hawaiian Affairs, and all the division within the State Dept. of Land and Natural Resources. Because no objections to these applications were submitted, staff finds that the conditions for a water use permit have been met, provided that the allocation approved is reasonable for this type of use.

This submittal was finalized on the morning of the July 7, 1994 deadline for filing objections to the Temporary Irrigation Well applications. Any objections received by the deadline will be brought forth during the Commission meeting.

2. Haseko (Ewa), Inc. - The application for the Haseko Well No. 1 specifies that the water will be used for golf course, landscape, and maintenance irrigation and for dust control on surrounding fallow areas, formerly in sugarcane. The projected demands are consistent with staff's estimates for these uses.

The water will be drawn from a well currently being used by Oahu Sugar Co. The current allocation for the well is 4.16 mgd. When the lease expires in October 1994, control of the well will revert back to Haseko. The present allocation will be reduced from 4.16 mgd to 1.5 mgd. Therefore, approval of this application will not result in greater draw from the system.

The application was sent for review by the Mayor's Office, the Board of Water Supply, the Dept. of General Planning, the Department of Land Utilization, the Dept. of Health, the Dept. of Hawaiian Home Lands, the Office of Hawaiian Affairs, and all the division within the State Dept. of Land and Natural Resources. Because no objections have been submitted, staff finds that the conditions for a water use permit have been met.

This submittal was finalized on the morning of the July 7, 1994 deadline for filing objections to the application. Any objections received by the deadline will be brought forth during the Commission meeting.

RECOMMENDATION

Staff recommends that the Commission:

1. Approve the issuance of temporary water use permits which shall be valid until July 12, 1995, to the applicants with completed applications listed in Tables 1 and 2. The permits shall be for allocations described in Tables 1 and 2, for the reasonable and beneficial uses described in the applications, and from the wells specified in their applications, except for the Gentry Development Corp. and the Hawaii Prince Golf Club.

2. Approve the issuance of a well construction permit and a temporary water use
Chairperson and Members  
Commission on Water Resource Management  
July 13, 1994

permit to the Gentry Development Corp. for the reasonable and beneficial use of 23,400 gallons per day of nonpotable water from the Fort Weaver Apt. Well (Well No. 2001-09) for landscape and roadway irrigation use on 7.8 acres.

a. The well construction permit shall be subject to the standard conditions listed in Attachment D.

b. The pump installation permit shall be approved administratively pending the results of the drilling and testing.

c. The temporary water use permit shall be valid until July 12, 1995.

3. Approve the issuance of a well construction permit and a temporary water use permit to the Gentry Development Corp. for the reasonable and beneficial use of 130,200 gallons per day of nonpotable water from the Temporary Irrigation Well (Well No. 1900-02, 1901-03) for permanent and temporary landscape irrigation on 43.4 acres.

a. The well construction permit shall be subject to the standard conditions listed in Attachment D.

b. The pump installation permit shall be approved administratively pending the results of the drilling and testing.

c. The temporary water use permit shall be valid until July 12, 1995.

Approve the issuance of a temporary water use permit which shall be valid until July 12, 1995, to the Hawaii Prince Golf Club, for the reasonable and beneficial use of 129,600 per day of nonpotable water from the combined pumpage of Wells 1 to 5 and EP 22 (Well Nos. 1900-02, 17 to 20 & 1901-03), for leaching salts and supplemental irrigation water for the golf course.

a. Flow meters shall be installed in each well within three months from the date of this submittal.

5. Require that applicants cooperate with the Commission’s initiative in the development of the Nonpotable Water Master Plan for Central and Leeward Oahu.

6. Require that all temporary permits be subject to the standard conditions of a water use permit listed in Attachment B and the Conservation conditions listed in Attachment C.

Respectfully submitted,

KEITH W. AHUE, Chairperson

APPRECIATION TO SUBMITTAL:

KEITH W. AHUE, Chairperson

APPROVED FOR SUBMITTAL:

KEITH W. AHUE, Chairperson

Report back in 6 months.

RAE M. LOUI
Deputy Director

Maurice, SCDF.

GEOX WEN, WDCL: request deferred so can meet w/ Stakes to talk about proposed "conditional use". Also want to continue pumping if deferred.
WATER USE PERMIT DETAILED INFORMATION

Source Information

AQUIFER:
Sustainable Yield: NA mgd
Existing Water Use Permits: 19.82 mgd
Available Allocation: NA mgd
Total of other pending allocations: NA mgd

1. WELL:
Location: Ewa Caprock Aquifer System, Oahu
Year Drilled: Fort Weaver Apt. Well (Well No. 2001-09)
Casing Diameter: Ewa by Gentry, Oahu, TMK:9-1-61:2
Elevations (msl = 0 ft.)
Water Level: NA ft.
Ground: 34 ft.
Bottom of Solid Casing: 4 ft.
Bottom of Perforated: 14 ft.
Bottom of Open Hole: -20 ft.
Total Depth: 54 ft.
Grouted Annulus Depth: 28 ft.
Pump Capacity: 100 gpm

2. WELL:
Location: Temporary Irrigation Well (Well No. 2001-10)
Year Drilled: Ewa by Gentry, Oahu, TMK:9-1-61:2
Casing Diameter: NA in.
Elevations (msl = 0 ft.)
Water Level: NA ft.
Ground: NA ft.
Bottom of Solid Casing: NA ft.
Bottom of Perforated: NA ft.
Bottom of Open Hole: NA ft.
Total Depth: NA ft.
Grouted Annulus Depth: NA ft.
Pump Capacity: 2 @ 200

3. WELL:
Location: Haseko Well No. 1 (Well No. 1902-01)
Year Drilled: Haseko Golf Course site, Oahu, TMK:9-1-12:5
Casing Diameter: 1964
Elevations (msl = 0 ft.)
Water Level: 2 ft.
Ground: 5 ft.
Bottom of Solid Casing: NA ft.
Bottom of Perforated: NA ft.
Bottom of Open Hole: -3 ft.
Total Depth: 8 ft.
Grouted Annulus Depth: NA ft.
Pump Capacity: NA gpm

ATTACHMENT A
Use Information

1. Quantity Requested: 48,400 gallons per day.
   Proposed Type of Water Use: Landscape irrigation for 7.8 acres.
   Place of Water Use: Ewa by Gentry, Oahu, at TMK: 9-1-61:2&8
   Reported Water Usage: NA mgd
   Nearby Similar Water Usage: 3,000 gpd

2. Quantity Requested: 238,000 gallons per day.
   Proposed Type of Water Use: Landscape irrigation for 43.4 acres.
   Place of Water Use: Ewa by Gentry, Oahu, at TMK: 9-1-61:2&54
   Reported Water Usage: NA mgd
   Nearby Similar Water Usage: 3,000 gpd

3. Quantity Requested: 1,500,000 gallons per day.
   Proposed Type of Water Use: Golf course, roadway, and maintenance irrigation; dust control.
   Place of Water Use: OSCo field 88, Oahu, at TMK: 9-1-12:5,6&7
   Reported Water Usage: 6.551 mgd
   Nearby Similar Water Usage: 1,000 to 4,000 gpd/acre

Ewa Caprock Aquifer System
   Current 12-Month Moving Average Withdrawal: 15.131* mgd

   * Does not include withdrawals at wells with expired temporary permit or withdrawals from Malakole area.

Nearby Surrounding Wells and Other Registered Ground Water Use

The Gentry developments are proposing to use other nearby wells in the vicinity of Well Nos. 2001-09 & 10. By distributing the pumpage over a large area, as opposed to one central pumping station, impacts to the aquifer should be minimized; other benefits are clearly derived from this strategy of well development. There are no other wells within a mile of Haseko's Well No. 1. The 1992 Draft of the Oahu Water Management Plan did not provide an estimate for 1990 withdrawals.
Chairperson and Members  
Commission on Water Resource Management  
July 13, 1994

Public Notice

In accordance with HAR §13-171-17, a public notice was published in the Star-Bulletin on June 15, 1994 and June 22, 1994 and copies of the notice were sent to the Mayor's office and the Board of Water Supply. Additional notice copies were sent to the County Council and Department of Water Supply. Copies of the completed application were sent to the Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, Aquatic Resources & Historic Preservation Divisions of the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by July 7, 1994.

Objections

The public notice specifies that an objector meet the following requirements: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; (3) state all grounds for objections to the proposed permits, (4) provide a copy of the objection letter(s) to the applicant, and (5) submit objections meeting the previous requirements to the Commission by July 7, 1994.

To the best of staff's knowledge there are no objectors who have property interest within the Ewa Caprock Aquifer System or who will be directly and immediately affected by the proposed water use.

Briefs in Support

Responses to objections, or briefs in support, regarding the application are required to be filed with the Commission ten (10) days after an objection is filed and, presumably, copies are served to the applicant. No briefs in support were filed with the Commission.

Field Investigation

Gentry's water sources and proposed uses were not investigated as the wells have not been drilled. Staff is in the process of verifying OSCo well sources.
STANDARD WATER USE PERMIT CONDITIONS

1. The ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "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 not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." (HAR §13-171-2).

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in BAR 113-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

4. The ground water use approved must not interfere with surface or ground water rights or reservations.

5. The ground water use approved must not interfere with interim or permanent instream flow standards or policies as determined by the Commission. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use permit is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and staff submittal approved by the Commission at its July 13, 1994 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

9. The water use permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect water sources in quantity, quality, or both;
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June 1987, shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Homes, if applicable; or
   g. Carry out such other necessary and proper exercise of the State’s and the Commissions’s police powers under law as may be required.

ATTACHMENT B
Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a monthly basis in accordance the Commission's September 16, 1992 action on reporting requirements;

12. The water use permit shall be subject to the Commission’s periodic review of the applicable aquifer’s sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the Ewa Caprock Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

14. The use(s) authorized by law and by the water use permit do not constitute ownership rights.

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies’ permits and conditions pertaining to water use or the water resource.

16. The permittee shall prepare and submit a water shortage plan within 30 days of issuance of the permit to assist the Commission in fulfilling HAR §13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Ewa Caprock Ground Water Management Area.

17. The water use permit granted shall be an temporary permit valid until July 12, 1995.

18. The water use permit shall be issued only after AG review.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies to Stream Protection and Management (SPAM), as well as legislative mandates to protect stream resources.

ATTACHMENT B
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
Chairperson and Members
Commission on Water Resource Management

July 13, 1994

STANDARD WELL CONSTRUCTION/PUMP INSTALLATION PERMIT CONDITIONS

1. The Commission shall be notified before work commences.

2. The well construction/pump installation permit shall be for construction, testing, and installation of a pumps of capacities specified in the application, or less, pump in the well, as determined by the pumping test results. The applicant shall coordinate with the Commission and conduct a pumping test in accordance with the protocol established by the Commission. A means to accurately measure water levels, acceptable to the Commission, shall also be provided. The applicant shall submit to the Commission the test results and proposed permanent pump information, based on the test, for approval by the Chairperson. No permanent pump may be installed and no water used from the well without the Chairperson's approval.

3. The proposed use shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct and pump water from a well shall not constitute a determination of correlative water rights. The permittee is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

4. The applicant shall comply with all applicable laws, rules, and ordinances.

5. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

6. The well construction/pump installation permit may be revoked if work is not started within six (6) months after the methodology and analysis of the test results are agreed upon. The work proposed in the well construction/pump installation permit application shall be completed within two years from the date of permit issuance.

7. That the pumping test shall follow the aquifer pump testing protocol established by the Commission. Prior to conducting the aquifer pump test, the applicant shall mutually agree with the Commission staff to a methodology and analysis of the test results.

8. The following shall be submitted to the Commission within thirty (30) days after completion of work:
   a. Well completion report.
   b. Elevations of well (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.

9. The well shall not be used for drinking water unless it is properly tested and approved by the State Department of Health.

10. The well construction/pump installation water use permit application and staff submittal approved by the Commission at its July 13, 1994 meeting are incorporated into the permit by reference.

11. The permit shall be subject to review by the Attorney General.

ATTACHMENT D
<table>
<thead>
<tr>
<th>Applicant</th>
<th>Well No.</th>
<th>Well Name</th>
<th>Approval</th>
<th>WPD mgd</th>
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Aquifer System: KAPOLEI

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6 Permits Totaling 1.706

Aquifer System: PUULOA

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14 Permits Totaling 1.771

20 Permits Totaling 3.567
HAWAII PRINCE G.C. COMBINED PUMPAGE
(WELL NOS. 1900-02, 17 to 20)

DATE (Latest Data 1/94)

PUMPAGE (mgd)

MONTHLY VALUES  12-MAV  REQUESTED AMOUNT

EXHIBIT 3A
GENTRY PACIFIC, LTD. PUMPAGE
GOLF VILLA 1 WELL (Well No. 2001-07)

MONTHLY VALUES •••• REQUESTED AMOUNT ○ CHLORIDE LEVEL

EXHIBIT 3C
GENTRY PACIFIC, LTD. PUMPAGE
PALM VILLA 2 WELL (Well No. 2001-08)

EXHIBIT 3D
GENTRY PACIFIC, LTD. PUMPAGE
PALM COURT 3 WELL (Well No. 2002-12)

DATE (Latest Data 12/93)

PUMPAGE (mgd)

CHLORIDE (mg/l)

MONTHLY VALUE

12-MAV

REQUESTED AM

CHLORIDE LEVEL

EXHIBIT 3E
STATE HFCD EWA-CAPROCK PUMPAGE
KAPOLEI WELLS (WELL-NOS. 2003-01 to 05)

DATE (Latest Data)

PUMPAGE (mgd)

MONTHLY VALUES  12-MAV  REQUESTED AMT

EXHIBIT 3F
### Aquifer System: PUULOA

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**16 Permits Totaling 18.670**

### Aquifer System: KAPOLEI

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**2 Permits Totaling 1.150**

**STATEWIDE THERE ARE 2 PERMITS TOTALING 1.150**

*Exhibit 4*
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<td>Potential available when OSCO ceases operations</td>
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* Control of well reverts back to Haseko in October 1994 when lease to OSCO expires.
all the upslope surface runoff for recharge as well. In short, HFDC has provided for perpetual prudent resource management through conservative use and through thoughtful planning for continued replenishment of the aquifer.

HFDC seeks the reasonable ability to transfer [the State's] correlative rights with respect to continued permanent use of the caprock wells in order to accomplish its mission.

Your thoughtful consideration and expeditious response to this request will be greatly appreciated. If there are any questions please call me at 587-0640.

Sincerely,

JOSEPH K. CONANT
Executive Director
ultimate home owners and in all probability a segment of "affordable" purchasers would have been displaced. The golf course provides a viable economic, as well as technical, solution to the drainage requirements of this "affordable housing" Master Planned Community in addition to recharging the caprock aquifer with all onsite surface runoff and all offsite upslope surface runoff.

The Commission has previously established a precedent by ruling and granting preference to the HFDC in allocating potable water for the State of Hawaii's "affordable" housing projects.

2. The sale of the Kapolei Golf Course is essential to the mission of HFDC. HFDC is a State created agency whose sole existence is predicated on providing "affordable housing" for the people of the State of Hawaii. HFDC is a "collateral" agency to the Department of Land and Natural Resources (DLNR), Commission on Water Resource Management, and as such the strategic interests of the DLNR/CWRM and HFDC are somewhat common in nature and the overall interests of the State will be best served with the successful sale of the Kapolei golf Course.

The sale of the Kapolei Golf Course will replenish monies into the Homes Revolving Fund which is essential to the continued mission of HFDC in the production of "affordable housing" as it relates to the State's Comprehensive Housing Strategy.

3. Permanent "conditional" use is justifiably reasonable and prudent. Until such time as the CWRM can reasonably determine the future sustainable yield of the caprock aquifer, and as long as the continued use of HFDC's wells do not significantly diminish the calculated sustainable yield, continued use of the caprock wells should be considered as a reasonable request. As the CWRM currently permits use for salt water wells, salinity is of no concern except to the user; therefore, health, safety, or permanent environmental damage would be the normal concerns that would preclude issuance of permanent use permits.

Also, and as previously mentioned, HFDC has invested literally millions of dollars into the development of a "closed loop" water resource management system which replenishes the caprock aquifer with not only the on-site generated surface runoff, but also by capturing
Mr. Keith W. Ahue  
Department of Land and Natural Resources  
Commission on Water Resources Management  
P.O. Box 621  
Honolulu, HI  96809  

Dear Mr. Ahue:

Thank you for the opportunity to review the water use permit application for Haseko (Ewa), Inc. for Well 1902-01, EP 27.

The Office of Hawaiian Affairs urges the Commission on Water Resources Management to halt the granting of this and all water use permits concerning water presently allocated to sugarcane lands. In dealing with the issue of water resources being released as the sugarcane industry phases out, the Commission must produce a comprehensive long-term plan which envisions the allocation of water reserves for groups which presently have virtually no access to existing water resources. Without that plan, there is a real danger that the present vacuum in land and water use planning could provide ripe opportunities for people and organizations seeking water use monopoly.

Sincerely yours,

Dante K. Carpenter  
Administrator

LM:1m
Ms. Rae M. Loui, Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Ms. Loui:

Subject: Amended Request for Extension of Water Use Permits  
Ewa Caprock Water Management Area  
Kapolei Irrigation Wells A, B, C, D, & E  
(Wells Nos.: 2003-01 to 2003-05)

The Housing Finance and Development Corporation (HFDC) herewith respectfully requests that HFDC's prior request for extension of well permits dated April 15, 1994, be amended as follows:

From: A request for extension for a period of twelve months from April 27, 1994 until April 27, 1995.

To: A request for a permanent "conditional" use permit, until such time as the Commission on Water Resource Management (CWRM) considers a "viable alternative source" of non-potable water is readily available for use, or that continued use of the caprock wells presently in use by HFDC is detrimental to the long term sustainable yield of the Kapolei Caprock Aquifer.

It is presently HFDC's understanding that a "viable alternative source" of non-potable water is defined as: 1) Availability of Waiahole Ditch water within an economically obtainable distance to the user, or 2) Availability of "R-2" classified wastewater, from Honoouliuli WWTP, within an economically obtainable distance to the user and at an economically justifiable usage cost.
This request for an amendment to our application is precipitated by the following circumstances:

1. On June 9, 1994, HFDC's Board of Directors preliminarily approved the Kapolei Peoples, Inc. ("KPI") as the purchaser of the Kapolei Golf Course. KPI was the only party who submitted a proposal for the purchase of the Kapolei Golf Course and is ready, willing, and able to consummate the sale.

2. On June 22, 1994 the Executive Director of HFDC and staff met with the attorney for KPI to discuss the conditions of sale as proposed by KPI. The most significant condition proposed by the prospective purchaser was for a permanent commitment for 1.0 million gallons per day of non-potable irrigation water. This condition of sale, if not overcome, will prevent any further negotiation of a sales agreement between HFDC and KPI. Simply stated, if irrigation water cannot be guaranteed to the prospective purchaser, there will be no sale.

3. HFDC is currently operating the wells on annual renewable "temporary use permits" which condition is unacceptable to the purchaser, KPI.

In support of the above stated request for a "conditional" permanent permitted use, and as additional historical and general information, the following facts are submitted for your consideration:

1. The Kapolei Golf Course is an "affordable housing" related project to the Villages of Kapolei Master Planned Community. The golf course serves as an integral major component in the overall master drainage system for the Villages of Kapolei (Villages), a State of Hawaii "affordable housing" project. The housing Villages themselves could not have been developed without the construction of the golf course retention/detention basin. In addition to the unique "closed loop" aquifer recharge aspects of the drainage system, the excavation of the golf course provided 2.5 million cubic yards of free fill-material required to remove approximately 1/3 of the Villages from a flood inundation zone. An alternative drainage system could have been developed, but not without tremendous additional cost to the development of the Villages. The added costs would have been passed on to the...
July 7, 1994

Honorable Keith Ahue, Chairperson
Board of Land and Natural Resources
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Water Use Permit Application
for Haseko (Ewa), Inc.
Well No. 1902-01

This is in response to your memorandum of June 21, 1994. We have reviewed the subject application and have the following comments to offer:

- The parcels identified as Tax Map Key 9-1-12: 05, 06, and 07 are designated Park/Golf Course, Park, Preservation, Low Density Apartment, Medium Density Apartment, Commercial, and Commercial-Industrial Emphasis Mixed Use on the Ewa Development Plan Land Use Map (DPLUM).

- The proposed development does not have a drainage master plan approved by the Department of Public Works to handle the runoff of Kaloi Gulch nor on-site surface flows. The proposed golf course for which the water permit is requested would be an integral element of this plan. Since the golf course should not proceed until the drainage is resolved, we believe approval of the water use permit is premature at this time.
Like other applicants for non-potable water in Ewa, the applicant should be required to prepare plans for alternate non-potable water sources. Since this is a new use, it may be desirable to review these plans prior to approval of a permit.

Should you have any questions, please call Eugene Takahashi of our staff at 527-6022.

Sincerely,

[Signature]

ROBIN FOSTER
Chief Planning Officer

RF: lh
July 1, 1994

TO: ROBIN FOSTER, CHIEF PLANNING OFFICER
DEPARTMENT OF PLANNING

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

SUBJECT: WATER USE PERMIT APPLICATIONS FOR OAHU COUNTRY CLUB WELL
NO. 2050-01, HASEKO WELL NO. 1902-01, GENTRY WELL NO. 2001-10,
CAMPBELL WELL NO. 4258-09

We have the following comments on water use permits for these wells:

1. Oahu Country Club Well No. 2050-01: The exploratory drilling to develop
water from the alluvium and the Nuuanu basalt was unsuccessful. As before,
we oppose a water use permit to develop potable water from the basal
aquifer for golf course irrigation. We again suggest use of surface water
and/or capture of runoff for irrigation.

2. Haseko Inc. Well No. 1902-01: We have no objections to a water use permit
for this caprock well.

3. Gentry Development Co. Well No. 2001-10: We do not object to a water use
permit for this well except that it should be conditioned on evidence that it
does not adversely affect yield or quality of the Department of Parks and

4. Campbell Estate Well No. 4258-09: We have no objection to a water use
permit for this caprock well for aquaculture.

If you have any questions, please call Herbert H. Minakami at 527-6183.

cc: Mayor Frank F. Fasi
Mr. Keith Ahue, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Subject: Water Use Permits for Oahu Country Club Well No. 2051-01, Haseko Well No. Gentry Well No. 2001-10, and Campbell Estate Well No. 4258-09

We have the following comments on applications for water use permits for these wells and return the covers appropriately marked and signed:

1. Oahu Country Club Well No. 2051-01: The exploratory well was unsuccessful in development of sufficient water from the alluvium and the Nuuanu basalt. As before, we oppose a water use permit for tapping into the Koolau aquifer and use of potable water for golf course irrigation. We again suggest use of surface water and/or capture of runoff for golf course irrigation.

2. Haseko Inc. Well No. 1902-01: We have no objection to a water use permit for this caprock well.

3. Gentry Development Co. Well No. 2001-01: We do not object to a water use permit for this caprock well except that it should be conditioned on evidence there will be no adverse impact on the quality and quantity of water from the Department of Parks and Recreation Well Nos. 2002-13 and 14.

4. Campbell Estate Well No. 4258-09: We have no objection to a water use permit for this caprock well used for aquaculture.

If you have any questions, please call Herbert H. Minakami at 527-6183.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer
TO: Mrs. Hoaliku L. Drake, Director  
Department of Hawaiian Home Lands  
Dr. Peter A. Sybinsky, Director  
Department of Health  
Mr. Clayton H. W. Hee, Chairperson  
Office of Hawaiian Affairs  
Mr. Kazu Hayashida, Manager & Chief Engineer  
Honolulu Board of Water Supply  
Donald A. Clegg, Director  
Department of Land Utilization  
Robin Foster, Chief Planning Officer  
Planning Department  
FROM: Keith W. Ahue, Chairperson  
Commission on Water Resource Management  
SUBJECT: Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu  

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.  

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.  

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.  

LN:ky  

Attachments  
Response: Contact person: Herbert H. Minakami  Phone: 527-6183  
( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested  

Signed: Kazu Hayashida  
Manager and Chief Engineer  
Date: 7/8/94
July 05, 1994

Mr. Keith W. Ahue
Department of Land and Natural Resources
Commission on Water Resources Management
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Ahue:

Thank you for the opportunity to review the water use permit application for Haseko (Ewa), Inc. for Well 1902-01, EP 27.

The Office of Hawaiian Affairs urges the Commission on Water Resource Management to halt the granting of this and all water use permits concerning water presently allocated to sugarcane lands. In dealing with the issue of water resources being released as the sugarcane industry phases out, the Commission must produce a comprehensive long-term plan which envisions the allocation of water reserves for groups which presently have virtually no access to existing water resources. Without that plan, there is a real danger that the present vacuum in land and water use planning could provide ripe opportunities for people and organizations seeking water use monopoly.

Sincerely yours,

Dante K. Carpenter
Administrator

LM:lm
TO: Mrs. Hoaliku L. Drake, Director  
Department of Hawaiian Home Lands  

Dr. Peter A. Sybinsky, Director  
Department of Health  

Mr. Clayton H. W. Hee, Chairperson  
Office of Hawaiian Affairs  

Mr. Kazu Hayashida, Manager & Chief Engineer  
Honolulu Board of Water Supply  

Donald A. Clegg, Director  
Department of Land Utilization  

Robin Foster, Chief Planning Officer  
Planning Department  

FROM: Keith W. Ahue, Chairperson,  
Commission on Water Resource Management  

SUBJECT: Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu  

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.  

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.  

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.  

LN:ky  
Attachments  

Response: Contact person: Luis A. Manrique Phone: 599-1935  

() We have no comments  

() We have no objections  

( ) Comments attached  

() Additional information requested  

( ) Extended review period requested  

Signed: Date: 07/05/94
TO: √ Mrs. Hoaliku L. Drake, Director  
Department of Hawaiian Home Lands  
Dr. Peter A. Sybinsky, Director  
Department of Health  
Mr. Clayton H. W. Hee, Chairperson  
Office of Hawaiian Affairs  
Mr. Kazu Hayashida, Manager & Chief Engineer  
Honolulu Board of Water Supply  
Donald A. Clegg, Director  
Department of Land Utilization  
Robin Foster, Chief Planning Officer  
Planning Department  
FROM: Keith W. Ahue, Chairperson  
Commission on Water Resource Management  
SUBJECT: Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: Darrell Yagodich  
Administrator, Planning Office  
Phone: 586-3837

( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested -- See attached sheet  
( ) Extended review period requested

Signed: Darrell Yagodich  
Date: 7/4/94
Attachment
Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Haseko (Ewa), Inc., Well No. 1902-01
Gentry Development Co., Well No. 2001-10

Additional information requested:

(1) How does project impact sustainable yield?

(2) How does it conform to an overall strategy for water quality protection for this aquifer?

(3) How does it fit into overall reallocation of land uses over the aquifer?
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Application for Water Use Permit,
Haseko (Ewa), Inc. for Well No. 1902-01
Puuloa Ground Water Management Area, Oahu
Honouliuli, 'Ewa, O'ahu
TMK: 9-1-12:005

Thank you for the opportunity to review this project. The applicant proposes to use water from an existing source. Since an approved permit will not authorize any ground disturbing activities we believe that there will be "no effect" on historic sites.

EJ:jk
Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

Response: 
- Contact person: Bill Clegg
- Phone: 587-0218

We have no comments
We have no objections
Comments attached
Additional information requested
Extended review period requested

Signed: Bill Clegg Date: 7/1/94
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments  
Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

Response: Contact person: _________________ Phone: _________________  
( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested

Signed: ___________________________ Date: 6/29/94
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Henry Sakuda, Administrator
Division of Aquatic Resources

SUBJECT: Comments on Water Use Permit Application by Haseko (Ewa) Inc. for Well No. 1902-01 in the Puuloa Ground Water Management Area, Oahu

The application requests a transfer in water use from Oahu Sugar Company (OSCO) to Haseko when the OSCO lease with OSCO ends in October. Approximately 1.5 million gallons of pumped brackish ground water currently being used for sugar cane irrigation will be shifted to golf course irrigation, roadway landscaping, and dust control. We have no objections from the aquatic biological resources standpoint.
Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

Signed: 
Date: 6/28/94

Response: Contact person: Phone: 587-0218

☐ We have no comments
☐ We have no objections
☐ Comments attached
☐ Additional information requested
☐ Extended review period requested
TO: Aquatic Resources
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Commission on Water Resource Management
Honolulu, Hawaii

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: Wayne Ching Phone: 587-0166

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: Michael G. Buck
Date: 7/11/94
Administrator
TO: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
Office of Conservation and Environmental Affairs
State Parks
Water and Land Development

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: Steve Tayan
Phone: 587-0385

We have no comments
We have no objections
Comments attached
Additional information requested
Extended review period requested

Signed: [Signature]
Date: 6/24/94
Mr. Alan Suwa
Haseko (Ewa), Inc.
820 Millilani St., Ste. 810
Honolulu, HI 96813

Dear Mr. Suwa:

Your completed water use permit application for the Haseko Well No. 1 (Well No. 1902-01) was filed on May 18, 1994.

Enclosed is a copy of the public notice for your water use permit application that will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994.

Please be aware that there may be objections to your application. If objections are made, the objector is required to file such objections with the Commission and is also required to send you a copy of the objections.

You, or any other party, may respond to objections by filing a brief in support of your application with the Commission within ten (10) days of the filing of an objection. You, or the other party, must also send a copy of the response to the objector.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI
Deputy Director

LN:ky

Enc.
PUBLIC NOTICE

Applications for Water Use Permit
Ground Water Management Areas, Oahu

Applications for the following water use permits have been received and are hereby made public in accordance with Department of Land and Natural Resources Administrative Rules 13-171, "Designation and Regulation of Water Management Areas."

OCC Irrigation (Well No. 2050-01)
Applicant:  Oahu Country Club
          P.O. Box 0
          Waipahu, HI 96797
Date Completed Application Received:  June 9, 1994
Aquifer:  Mauanu System, Honolulu Sector, Oahu
Well Source:  OCC Irrigation Well, Well No. 2050-01, at 150 Country Club Rd, Oahu at Tax Map Key: 1-9-6:1
Quantity Requested:  200,000 gallons per day.
Existing Water Use:  Irrigation for 187-acre golf course
Place of Water Use:  150 Country Club Rd, Oahu at Tax Map Key: 1-9-6:1

Haseko Well No. 1 (Well No. 1902-01)
Applicant:  Haseko (Ewa), Inc.
          820 Mililani St., Ste.810
          Honolulu, HI 96813
Date Completed Application Received:  May 18, 1994
Aquifer:  Puuloa System, Ewa Caprock Sector, Oahu
Well Source:  Haseko Well No. 1 Well, Well No. 1902-01, at Ewa Marina project site, Oahu at Tax Map Key: 9-1-12:5
Quantity Requested:  1,500,000 gallons per day.
New Water Use:  Irrigation for 270-acre golf course, roadway landscape irrigation, and maintenance irrigation/dust control for fallow fields surrounding the golf course area
Place of Water Use:  Ewa Marina project site at Tax Map Key: 9-1-12:5,6,7

Gentry Golf Course Irrigation (Well No. 2001-10)
Applicant:  Gentry Development Co.
          P.O. Box 295
          Honolulu, HI 96809
Date Completed Application Received:  June 9, 1994
Aquifer:  Puuloa System, Ewa Caprock Sector, Oahu
Well Source:  Gentry Golf Course Irrigation Well, Well No. 2001-10, at Ewa By Gentry, Oahu at Tax Map Key: 9-1-61:2
Quantity Requested:  238,000 gallons per day.
New Water Use:  Temporary irrigation for 31.4-acre sump (proposed golf course site); irrigation for 12 acres landscaped area
Place of Water Use:  Ewa By Gentry development at Tax Map Key: 9-1-61:2 & 54
Pacific Sea 4 (Well No. 4258-09)
Applicant: Campbell Estate
828 Fort St., Suite 500
Honolulu, HI 96813

Date Completed Application Received: April 28, 1994
Aquifer: Koolauloa System, Windward Sector, Oahu
Well Source: Pacific Sea 4 Well, Well No. 4258-01, at Kahuku, Oahu at Tax Map Key: 5-6-319
Quantity Requested: 2,000,000 gallons per day.
New Water Use: Salt water shrimp aquaculture
Place of Water Use: Kahuku at Tax Map Key: 5-6-319

Written objections or comments on the applications for water use permits may be filed by any person who has property interest in any land within the hydrologic unit of the source of water supply, any person who will be directly and immediately affected by the proposed water use, or any other interested person. Written objections shall: (1) state property or other interest in the matter (provide TMK information); (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; and (3) state all grounds for objections to the proposed permits. Written objections must be received by July 7, 1994. Objections must be sent to 1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809 and 2) a copy of the objection letter(s) to the applicant at the above address.

COMMISSION ON WATER RESOURCE MANAGEMENT

RAE M. LOUI for
KEITH W. AHUE
Chairperson

Dated: JUN -9 1994

TO: Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application. Your objections to the proposed permit must be filed by the July 7, 1994 deadline for filing and should be made in accordance with Section 13-171-18 of our Administrative Rules.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: Phone: 

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: Date:
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments  
Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: ______________________ Phone: ____________

( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested

Signed: _______________________ Date: ____________
JUN 21 1994

REF: WRM-KY

TO: Mrs. Hoaliku L. Drake, Director
    Department of Hawaiian Home Lands

Dr. Peter A. Sybinsky, Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Mr. Kazu Hayashida, Manager & Chief Engineer
Honolulu Board of Water Supply

Donald A. Clegg, Director
Department of Land Utilization

Robin Foster, Chief Planning Officer
Planning Department

FROM: Keith W. Ahue, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: ___________________________ Phone: ________________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ___________________________ Date: ___________________________
Honorable Frank F. Fasi, Mayor  
City & County of Honolulu  
City Hall  
Honolulu, HI 96813  

Attn: Mr. Jeremy Harris  

Dear Mayor Fasi:  

Notice of an Application for a Water Use Permit  
Puuloa Ground Water Management Area, Oahu  

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-171-17(a), we are sending you a copy of the public notice for the water use permit application for Haseko (Ewa), Inc. for Well No. 1902-01, which will be published in the Honolulu Star Bulletin.  

In addition, Section 13-171-13(b), of our Administrative Rules, states:  

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."  

We have attached a copy of the application for your review and would appreciate receiving your comments, within the next sixty (60) days, on whether this water use is consistent with county plans and policies.  

Very truly yours,  

[Signature]  

Keith W. Ahue  
Chairperson  

Enc.
Ms. Rae M. Loui  
Deputy Director  
Department of Land and Natural Resources  
Commission on Water Resource Management  
P.O Box 621  
Honolulu, Hawaii 96809

Dear Ms. Loui:

Subject: Application for a Water Use Permit  
Haseko Well No. 1 (Well No. 1902-01)  
Puuloa Ground Water Management Area, Oahu

The following is the additional information requested in your letter of May 5, 1994 to complete the subject application:

1. Table 1 (attached) has been revised to clarify that the projected water use for "Dust Control and Maintenance" is intended for the same use and area as the "Irrigation for OSCO Fields." Former OSCO fields which lie fallow outside of the proposed golf course construction area will require dust control and maintenance irrigation of ground cover to prevent erosion. Dust control and maintenance for golf course construction is included as part of the total golf course water requirement. Please replace the back page in the application you hold with the attached sheet showing the revised table.

2. The annual breakdown of the information presented in Table 1 for the four year period from 1994 through 1997 remains the same for each year at 100 percent of the total need as previously requested.

Although the initial mass grading of the golf course and roadways will require less water than the total requested, remaining water requirements for final grading, onsite nursery, and landscaping may be needed as early as 1995. To ensure greater flexibility in the construction schedule, we are
requesting the full amount of allocation for each year over the next four years. If further breakdown is needed, about .36 mgd would be needed for the first six months of mass grading, followed by about .79 mgd for nine months of final grading and installation of landscaping. The full allocation would be needed within 21 months for the landscape grow-in period.

The water needed for dust control and maintenance irrigation of the OSCO fields will begin immediately after October 1994 and continue thereafter until such time that construction occurs over the area.

3. Attached is the City and County Zoning Map No. 12 showing the zoned uses which were approved for our project on December 13, 1993 to verify that the zoning codes in the revised Table 1 are current. The golf course construction area and the maintenance irrigation needed for the fallow OSCO fields area are identified on the same map for reference.

We wish to also clarify that we are not seeking a transfer of Oahu Sugar’s water use permit to HASEKO pursuant to HRS 174C-59 and HAR 13-171-25. Our use of the term in our submittal of the application was merely to indicate our understanding that Oahu Sugar would no longer be using water from that well for sugar cane cultivation at the time that HASEKO would need the water, and, therefore, the water and well use would be available for HASEKO’s use at that time. In light of the implications that the word "transfer" conveys, we should not have used that terminology. We regret the confusion and inconvenience it may have caused.

I hope that the information provided is sufficient to complete the application and acceptable to begin processing. Should you have any questions or comments, please feel free to call me at 599-1444.

Sincerely,

HASEKO (Ewa), Inc.

Alan Suwa
Project Manager

AS:jn

Attachments
16. REMARKS, EXPLANATIONS (cont'd):

Oahu Sugar Company (OSCO) will be harvesting fields within the Ewa Marina project site which are irrigated by EP 27 up to October 1994 when its lease with HASEKO ends (refer to the harvesting schedule below). This means that use of EP 27 will diminish through 1994 and end in October 1994. OSCO has indicated its willingness to transfer its use of Well 1902-01 to HASEKO to accommodate irrigation requirements of the Ewa Marina project. The first use for Ewa Marina will be for dust control during construction of the golf course. This work is scheduled to begin in the fourth quarter of 1994. Other irrigation requirements are for the golf course turfgrass, roadway landscaping, and maintenance irrigation of fallow fields outside of the golf course area.

**Harvesting Schedule of Fields Irrigated by EP 27**

<table>
<thead>
<tr>
<th>Field No.</th>
<th>Acres</th>
<th>Harvest Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>088</td>
<td>124.8</td>
<td>May 6, 1993</td>
</tr>
<tr>
<td>091</td>
<td>117.8</td>
<td>March 24, 1994</td>
</tr>
<tr>
<td>071</td>
<td>123.3</td>
<td>October 11, 1994</td>
</tr>
<tr>
<td>084</td>
<td>125.4</td>
<td>October 15, 1994</td>
</tr>
<tr>
<td>086</td>
<td>119.0</td>
<td>October 23, 1994</td>
</tr>
</tbody>
</table>

**TABLE 1. MULTIPLE TMKs TO USE REQUESTED WATER**

<table>
<thead>
<tr>
<th>Project Name</th>
<th>TMK</th>
<th>Current County Zoning Code</th>
<th>Net Acres</th>
<th>GPD/Acre</th>
<th>Total GPD</th>
<th>% of Total To Be Used Over Next 4 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golf Course (27 holes)</td>
<td>9-1-12:5, 6, &amp; 7</td>
<td>P-2</td>
<td>270</td>
<td>4,000</td>
<td>1,080,000</td>
<td>100</td>
</tr>
<tr>
<td>Roadway Landscaping</td>
<td>9-1-12:5 &amp; 7</td>
<td>A-1, P-2, &amp; R-5</td>
<td>35</td>
<td>3,000</td>
<td>105,000</td>
<td>100</td>
</tr>
<tr>
<td>Maintenance Irrigation and Dust Control for OSCO Fields</td>
<td>9-1-12:5 &amp; 7</td>
<td>A-1, P-2, &amp; R-5</td>
<td>315</td>
<td>1,000</td>
<td>315,000</td>
<td>100</td>
</tr>
</tbody>
</table>
PORTION OF ZONING MAP NO. 12
(EWA BEACH - IROQUOIS POINT)
Land situated approximately 3000 ft. Southwesterly from the
Intersection of Fort Weaver Rd. and Puuloa Rd.

APPLICANT: HASEKO (EWA), INC.
TAX MAP KEY: 9-1-12: POR. 2, 3, POR. 5, 6, POR. 7,
8 THRU 17 & 23
FOLDER NO.: 92/Z-15
LAND AREA: 909.8 ACRES
PREPARED BY: DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
PUBLIC HEARING: PLANNING COMMISSION CITY COUNCIL
6/30/93 10/20/93

93-94
DEC 13 1993
EXHIBIT A
BILL 99
Mr. Alan Suwa  
Haseko (Ewa), Inc.  
820 Millani St., Suite 810  
Honolulu, HI 96813

Dear Mr. Suwa:

Application for a Water Use Permit  
Puuloa Ground Water Management Area, Oahu

We acknowledge receipt of your water use permit application for the Haseko Well No. 1 (Well No. 1902-01) on March 31, 1994. However, the following information is required to complete your application:

1. Updated zoning, acreage, and projected water use for dust control and maintenance (see attached Table 1).

2. An annual breakdown of the information presented in Table 1 for the four-year period from 1994 through 1997.

Yearly projections are necessary because, due to the uncertainties regarding the immediate and long-term viability and sustainable yield of the Ewa Caprock Aquifer, the Commission has been granting temporary permits, valid for one year, based on the annual projections for authorized planned nonpotable uses. As such, please verify that the zoning codes in Table 1 are current. Your estimates of daily demand per acre for the golf course (4,000 gpd/ac), roadway landscaping (3,000 gpd/ac), and maintenance of fallow fields (1,000 gpd) are reasonable and consistent with other similar uses in the area. A suggested value for dust control is 1,000 gpd/ac.

Upon receipt of the requested information, your application will be accepted as complete. You will receive a copy of the public notice and any further information regarding the status of your application.

Your intent to "transfer" the permitted use from Oahu Sugar Co.'s EP 27 Well upon termination of their lease with Haseko would require two separate actions: 1) revocation of Oahu Sugar Co.'s water use permit pursuant to §13-171-24; and 2) approval of your application for a new water use permit. Section 13-171-25 of our Administrative Rules, Transfer of a Water Use Permit, does not apply if the conditions of the use, including place, quantity, and type of water use are modified or changed.
Lastly, all temporary one-year permits are subject to the Conservation Conditions for Ewa Caprock Water Use Permits (see attached). If you have developed any plans or programs to encourage water conservation in the Ewa Marina development or any plans for conversion to an alternative non-potable source other than the Ewa Caprock Aquifer, should the reliability of the aquifer be diminished, these may be submitted to support your application. These plans are not required to complete your application, but will be required should your application be approved.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI
Deputy Director

LN:ko
Attach.
16. REMARKS, EXPLANATIONS (cont'd):

Oahu Sugar Company (OSCO) will be harvesting fields within the Ewa Marina project site which are irrigated by EP 27 up to October 1994 when its lease with HASEKO ends (refer to the harvesting schedule below). This means that use of EP 27 will diminish through 1994 and end in October 1994. OSCO has indicated its willingness to transfer its use of Well 1902-01 to HASEKO to accommodate irrigation requirements of the Ewa Marina project. The first use for Ewa Marina will be for dust control during construction of the golf course. This work is scheduled to begin in the fourth quarter of 1994. Other irrigation requirements are for the golf course turfgrass, roadway landscaping, and maintenance irrigation of fallow fields outside of the golf course area.

Harvesting Schedule of Fields Irrigated by EP 27

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<tr>
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<tr>
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<td>123.3</td>
<td>October 11, 1994</td>
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<tr>
<td>084</td>
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<tr>
<td>086</td>
<td>119.0</td>
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</tr>
</tbody>
</table>

TABLE 1. MULTIPLE TMKs TO USE REQUESTED WATER

<table>
<thead>
<tr>
<th>Project Name</th>
<th>TMK</th>
<th>Current County Zoning Code</th>
<th>Net Acres</th>
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</tbody>
</table>
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:

      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:

      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

ATTACHMENT C
Ms. Rae Loui, Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809  

Dear Ms. Loui:

Subject: Application for Water Use Permit  
Golf Course and Roadway Landscaping for the Ewa Marina  
Community Development Project in the Ewa Caprock  
Groundwater Management Area, Ewa, Oahu

Transmitted herewith are the permit application and filing fee which requests nonpotable water use for the subject project.

We are requesting a total of 1.5 million gallons per day (mgd) from the Ewa Caprock Aquifer. This allocation request is to provide nonpotable water for the construction and operation of a 27-hole golf course and roadway landscaping for the Ewa Marina Project, including interim usage for dust control during construction and maintenance irrigation of lands being withdrawn from sugar production.

Our intent is to transfer use of existing State Well No. 1902-01 (EP 27) from Oahu Sugar Company (OSCo) upon termination of their lease with HASEKO to accommodate irrigation requirements for the Ewa Marina project. We have attached a letter from OSCo stating their support for continued use of the well for such irrigation purposes.

If you have any questions or require additional information, please contact our Project Manager Alan Suwa at 599-1444.

Sincerely,

HASEKO (EWA), INC.

Nelson W.G. Lee  
Executive Vice President

Attachments

cc: Angela Fong, Esq., Oshima, Chun, Fong & Chung
March 17, 1994

Mr. Raymond Kanna
Haseko (Ewa), Inc.
820 Mililani Street, 8th Floor
Honolulu, Hawaii 96813

Subject: HASEKO's Proposed Use of Well No. 1902-01 (EP27)

Dear Mr. Kanna:

In the past, Oahu Sugar Company has used its EP 27 facility (State Well No. 1902-01) to irrigate fields 71, 74, 84, 86, 88, 91, 92 and 93 in Ewa. Two of these fields, Nos. 92 and 93, are being converted to residential and golf course use in Ewa by Gentry. Harvesting of the remaining fields will be completed by October 1994. This date also coincides with the end of our lease with HASEKO for fields 71, 84, 86, 88, and a portion of 91.

The EP27 facility is an open skimming well developed in an old quarry site on land now owned by HASEKO. The well presently has an allocation of 4.16 MGD for agricultural use. It is our understanding that HASEKO would like to use this well for dust control and irrigation of its golf course and other landscaping starting in November 1994. Oahu Sugar feels that this is an appropriate use of this well and does not oppose HASEKO's water use permit application for that purpose.

Sincerely yours,

A. James Wriston, III
Field Engineer/Land Manager

AJW:lo

cc: R. Heiserman
B. Hatton
H. Morita
T. Nance
APPLICATION FOR WATER USE PERMIT

COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources

APPLICATION FOR WATER USE PERMIT

PERMITTEE INFORMATION

1. (a) APPLICANT
   Firm/Name: HASEKO (Ewa), Inc.
   Contact Person: Alan Suwa
   Address: 820 Millani St., Suite 810
   Honolulu, Hawaii 96813-2938

(b) LANDOWNER OF SOURCE
   Firm/Name: HASEKO (Ewa), Inc.
   Contact Person: Alan Suwa
   Address: 820 Millani St., Suite 810
   Honolulu, Hawaii 96813-2938

SOURCE INFORMATION

2. WATER MANAGEMENT AREA: Pearl Harbor Groundwater Management Area
   PUU00 Sector, Ewa Limestone Aquifer
   ISLAND: Oahu

3. (a) EXISTING WELL/DIVERSION NAME AND STATE NUMBER: HASEKO Well No. 1
   (b) PROPOSED (NEW) WELL/DIVERSION NAME: HASEKO Well No. 1
   (c) LOCATION: Address - Oasco Field 088, Ewa, Oahu
      (Attach a USGS map, scale 1" = 2000", and a property tax map showing sources location referenced to established property boundaries.)

4. SOURCE TYPE (check one): 
   - Stream
   - Borehole
   - Dike-confined
   - Perched
   - Caprock

5. METHOD OF TAKING WATER (check one): 
   - Artesian
   - Well & Pump
   - Diverted Surface
   - Other (explain)

USE INFORMATION

6. LOCATION OF PROPOSED WATER USE: (If possible, show on same map as source location. Otherwise, attach similar maps)
   (a) Proposed use of water in: 
      - Existing
      - New
      - Both existing & new uses
   (b) Tax Map Key: 9-1-12:
      (If location of use is over multiple TMKs, please complete Table 1 on back of application)
   (c) Address: Ewa Marina - golf course and roadways
   (d) Current Land Use District (check one): 
      - Urban
      - Agriculture
      - Conservation
      - Rural
   (e) Current County Zoning Code:

7. QUANTITY OF WATER REQUESTED: 1,500,000 gallons per day

8. METHOD OF MEASUREMENT: 
   - Flowmeter
   - Open-pipe
   - Weir
   - Orifice
   - Other (explain)

9. QUALITY OF WATER REQUESTED: 
   - Fresh
   - Brackish
   - Salt
   - Potable
   - Non-Potable

10. PROPOSED USE: 
    - Municipal (including hotels, stores, etc.)
    - Individual Domestic
    - Irrigation
    - Industrial
    - Military
    - Other (explain)

For questions 12 & 13: if multiple TMKs are involved, please complete Table 1 on back of application.

11. TOTAL NUMBER OF RESIDENCES TO BE SERVED: None

12. TOTAL ACRES TO BE IRRIGATED AND TYPE OF PROP: Refer to Explanations on Back Side.

13. PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION: As required throughout the day
    (daytime hours of operation, ex. 7 a.m. to 2 p.m.)

14. APPLICANT MUST BRIEFLY DESCRIBE FOLLOWING POTENTIAL RESTRICTIONS ON WATER USE:
    (a) Impact on Sustainable yield (?): None
    (b) Instream Flow Standards affected (?): No
    (c) Hawaiian Home Lands use affected (?): No
    (d) Other existing legal uses affected (?): No
    (e) Other (pending permits, EIS, etc.?): None

15. REMARKS, EXPLANATIONS:

   (If more space is needed, continue on back side)

NOTE: Signing below indicates that the applicant understands that, if a water use permit is granted by the Commission on Water Resources Management, a permit is subject to prior seniority and applicable state and federal water use standards, and current use standards as defined by the Commission, and Hawaiian Home Lands future use. In addition, applicant understands that, upon permit approval, a water shortage plan must be submitted should the Commission rule otherwise.

Applicant (print):
Signature:
Date:

Landowner (print):
Signature:
Date:

For Official Use Only:

Hydrologic Unit No. 

Diversions Works No. 

State Wall No.
Oahu Sugar Company (OSCO) will be harvesting fields within the Ewa Marina project site which are irrigated by EP 27 up to October 1994 when its lease with HASEKO ends (refer to the harvesting schedule below). This means that use of EP 27 will diminish through 1994 and end in October 1994. OSCO has indicated its willingness to transfer its use of Well 1902-01 to HASEKO to accommodate irrigation requirements of the Ewa Marina project. The first use for Ewa Marina will be for dust control during construction of the golf course. This work is scheduled to begin in the fourth quarter of 1994. Other irrigation requirements are for the golf course turfgrass, roadway landscaping, and maintenance irrigation of fallow fields outside of the golf course area.

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<td>315</td>
<td>1,000</td>
<td>315,000</td>
<td>100</td>
</tr>
</tbody>
</table>
Pay: Twenty-five dollars and no cents

PAY
TO THE ORDER OF
DEPARTMENT OF LAND & NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HI 96809

WATER USE PERMIT APPLICATION (92-01)

DATE
March 30, 1994

CHECK NO.
3683

AMOUNT
$********25.00**

Faith, 4/29
Please deposit for WUPA Fante, water
Mr. Keith W. Ahue  
Chairperson  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, HI 96809

Dear Mr. Ahue:

Subject: Progress Report on Metering Oahu Sugar Company's (OSCo) Ewa Caprock Aquifer Wells

Pursuant to the conditions of the water use permits for OSCo's Ewa Caprock wells (well numbers 1900-01, 1900-13, 1901-01, 1902-01, 2000-01, 2001-01) approved by the Commission on December 16, 1992, Oahu Sugar Company is required to meter its pumps that draw water from the wells. The following outlines the progress to date on metering these pumps:

<table>
<thead>
<tr>
<th>Well No.</th>
<th>Pump No.</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900-01</td>
<td>EP20</td>
<td>Meters have arrived at OSCo; installation scheduled for summer of 1993.</td>
</tr>
<tr>
<td>1900-13</td>
<td>EP30</td>
<td></td>
</tr>
<tr>
<td>1901-01</td>
<td>EP24</td>
<td></td>
</tr>
<tr>
<td>1902-01</td>
<td>EP28</td>
<td></td>
</tr>
<tr>
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<td>EP29</td>
<td></td>
</tr>
<tr>
<td>2000-01</td>
<td>EP21</td>
<td></td>
</tr>
<tr>
<td>1902-01</td>
<td>EP27A,27B</td>
<td>Approval to purchase meter pending</td>
</tr>
<tr>
<td>2001-01</td>
<td>EP23</td>
<td>Approval to purchase meter pending</td>
</tr>
</tbody>
</table>

We anticipate completion of metering by December 31, 1993. Should you need any more information or have questions, please call me.

Very truly yours,

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

WDB/HM:yk
June 9, 1993

Mr. Keith W. Ahue  
Chairperson  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, HI  96809

Dear Mr. Ahue:

Subject: Oahu Sugar Company (OSCo) Schedule of Anticipated Withdrawal of Fields from Cultivation

Pursuant to the conditions of the water use permits for OSCo's Ewa Caprock wells (well numbers 1900-01, 1900-13, 1901-01, 1902-01, 2000-01, 2001-01) approved by the Commission on December 16, 1992, Oahu Sugar Company is required to submit to the Commission a schedule identifying when fields specified in the permits will be taken out of cultivation permanently.

As of this date there is no definite time for withdrawal of these fields. Lease considerations are still not complete and until that process is completed, no dates can be determined.

Should you desire further information, please call me.

Very truly yours,

W. D. Balfour, Jr.  
Vice President and Manager  
WDB/HM:yk
June 9, 1993

Mr. Keith W. Ahue  
Chairperson  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, HI  96809  

Dear Mr. Ahue:

Subject: Oahu Sugar Company (OSCo) Ewa Caprock Aquifer Water Shortage Plan

Pursuant to the conditions of the water use permits for OSCo's Ewa Caprock wells (well numbers 1900-01, 1900-13, 1901-01, 1902-01, 2000-01, 2001-01) approved by the Commission on December 16, 1992, the following outlines OSCo's plans to reduce pumpage from the Ewa Caprock aquifer should the Commission declare a water shortage pursuant to subchapter 4 of chapter 13-171, Hawaii Administrative Rules.

BACKGROUND

The Ewa Caprock aquifer is a shallow body of brackish water, residing in the coral/limestone formations underlying the Ewa Plain. It is generally agreed that utility of the Ewa Caprock aquifer was created and is sustained by the Ewa Plantation Company and its successor, Oahu Sugar Company, via recharge from its irrigation operations. Without sugarcane cultivation, the usable water yield of the aquifer for irrigation purposes would be close to zero. The salinity of the water is not suitable for potable use, but may be used on crops that have a relatively high salt tolerance.

In the past, OSCo's sugarcane was the only major land use on the Ewa Plain and the only major user of Ewa Caprock water; however, recently there has been significant urbanization of the Ewa Plain, with the subsequent use of the Ewa Caprock aquifer for landscape irrigation purposes. There is a potential for an Ewa Caprock aquifer water shortage in the future because of the displacement of sugarcane land overlying the caprock (which reduces recharge) and the drawing of water from the aquifer by the developments that replaced the sugarcane.
It is OSCo's view that as the utility of the source was created and is sustained by OSCo, as OSCo has been until recently the sole long time existing user of the water, and as other current uses of the water are for aesthetics (landscape) while OSCo's use is for productive sugarcane cultivation, use of water from the caprock aquifer in a water shortage should primarily be reserved for OSCo's operations, and secondarily for recently arrived developers that have not contributed to creation and sustenance of the source.

**SUGARCANE WATER REQUIREMENTS**

OSCo's weekly irrigation usage is determined by computer, by multiplying the evaporation from a Weather Bureau Class "A" type evaporation pan located in the caprock area by a factor that varies with age and season, to estimate the amount of water used by the sugarcane plant during the previous week. This amount is deducted from the amount of water believed to be stored in the root zone of the sugarcane plant. The difference between field capacity and the current soil moisture stored in the root zone is the amount of net irrigation required for the ensuing week. The gross irrigation amount is determined by adjusting the net amount to reflect the irrigation system's delivery efficiency. This method is referred to as "OSCo's Water Balance" Computer Irrigation Scheduling.

The sugarcane plant goes through five stages or periods during which water stress affects ultimate sugar yield to different degrees. Providing optimum quantities of water to the sugarcane plant is especially critical at planting (0 to 3 months of age) and during the period just prior to harvest (ripening--18 to 24 months of age). The next critical period is during the sugarcane plant's "boom" stage (8 to 14 months of age) when the plant is growing the fastest. The least critical stages are the transition stages between planting and the boom stage and between the boom stage and harvest.

**WATER SHORTAGE REDUCED USE**

While OSCo does not believe it is right to penalize OSCo by restricting its use during a water shortage for the benefit of newly arrived developments and golf courses, during a water shortage declared by the Water Commission pursuant to chapter 13-171, subchapter 4, OSCo will do its part to reduce its usage from the Ewa Caprock aquifer. Upon notification of a duly declared water shortage, and upon specific instruction by the Commission,
OSCo shall restrict its irrigation of its caprock irrigated fields to the following schedule:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Approx. Age</th>
<th>Application Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly Planted</td>
<td>0–3 months</td>
<td>100% of required irrigation</td>
</tr>
<tr>
<td>Transition</td>
<td>4–7 months</td>
<td>90% of scheduled irrigation</td>
</tr>
<tr>
<td>Boom</td>
<td>8–14 months</td>
<td>95% of scheduled irrigation</td>
</tr>
<tr>
<td>Transition</td>
<td>15–17 months</td>
<td>90% of scheduled irrigation</td>
</tr>
<tr>
<td>Ripening</td>
<td>18–24 months</td>
<td>100% of required irrigation</td>
</tr>
</tbody>
</table>

During the water shortage period, if required by the Commission, OSCo will provide the Commission with copies of its water balance printouts, so that the Commission may verify OSCo's compliance with the curtailed irrigation schedule.

CONSEQUENCES

The consequence of implementing OSCo's caprock shortage plan for any prolonged period of time would be a significant loss of sugar produced from its caprock fields, a resulting loss of revenue, and an increase in its cost of production; the combination of which could make it unprofitable to farm the caprock area and further threaten OSCo's profitability. Sugar yield could be reduced on the order of ten to twenty percent of normal, depending on duration and seasonal timing of the water shortage period.

EWA MARINA

A discussion of potential Ewa Caprock aquifer water shortages would not be complete without comment on the Ewa Marina project. OSCo has concerns that excavation of the Ewa Marina by HASEKO (Hawaii), Inc., could cause a short to intermediate term Ewa Caprock aquifer water shortage by breaching the hydrologic barrier that restrains caprock water flow into the ocean. It is understood that the Water Commission will be involved in the regulation and monitoring of the project's construction. OSCo urges the Commission to be mindful of the potential for significant localized and immediate degradation of the caprock aquifer in the immediate vicinity of the project following breaching of the shoreline by the excavation; and urges that the Commission be prepared to exercise control over the construction to protect existing adjacent wells.
Mr. Keith W. Ahue  
June 9, 1993  
Page 4  

Thank you for the consideration of our plans, views and comments. Should you have any questions or need further information, please call me.

Very truly yours,

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

WDB/HM:yk  

cc: Haseko (Hawaii), Inc.
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Water Use Permit Application, Puuloa
Ground Water Management Area,
Well No. 1902-01 (Oahu Sugar Co., Ltd.)
Honouliuli, 'Ewa, O'ahu
TMK: 9-1-12: 5

HISTORIC PRESERVATION PROGRAM CONCERNS:

Thank you for the opportunity to review this project. This application proposes use of water from an existing well. Therefore we believe that any permit granted this application will have "no effect" on historic sites.

TD: amk
Mr. Loricchio stated that the Circuit Court has found that the MCA does have standing with regard to all matters concerning the Royal Hawaiian Country Club. If the application is accepted for action, the MCA would ask for a contested case hearing.

Mr. Yanoviak said the applicant's proposal to put the utility buildings (which will be holding pesticides) in the flood plain adjacent to Makawao Stream should not be permitted. The Commission "should have higher principles over the City and County of Honolulu" and not let the project continue. He reminded the Commission that a determination was made by Chairperson Paty that no permits would be granted after-the-fact with regard to this particular developer. In regards to the cease and desist order, the applicant has not been conscientious in removing their excess boulders, fill materials, and creosote railroad ties which have been stored on site. Mr. Yanoviak asked that Chairperson Paty write to the developer asking them for their help to work together with the government and community.

Mr. Cox asked the following:

(1) Did the cease and desist order restrict the developer from cleaning out the boulders and railroad ties?

Mr. Higa responded as follows:

(1) The railroad ties are not in the stream channel, therefore the state has no jurisdiction. The boulders are in the flood plain but not the stream channel.

Mr. Ron Jackson commented on written testimony he submitted earlier this year in regards to flood information from USGS gaging stations. It showed peak heights of flood stages approximately every two years. The temporary bridge is proposed in an abrupt turn in the stream channel. Topographically, there may be risk of erosion at that point. He suggested an engineer could review that possibility.

Mr. Martin felt the definition of stream channel was pertinent to this decision. It seemed that a staff recommendation was being developed and asked what steps and timeline are going to be made. He felt that this was a declaratory ruling matter which needs attorney general opinion and rule making processes need to be observed.

Chairperson Paty stated that after further deliberation and staff review, Mr. Martin's questions will be addressed. At this point, those questions cannot be answered.

Declaration by the Chairperson was made to defer action on this application due to the contested case request and subsequent written requests expected in regards to determination of standing.

ITEM 4

KUMCHA LAGUA, STREAM CHANNEL ALTERATION PERMIT FOR CONSTRUCTION OF A CHAIN LINK FENCE AT WAIPILOPIO GULCH, HAULUA, OAHU

Unanimously approved (Fujimura/Nakata).

ITEM 5

OAHU SUGAR CO., LTD., APPLICATIONS FOR WATER USE PERMITS, PUULOA WATER MANAGEMENT AREA, WAIPAHU, OAHU

Additional information was distributed and explained by Mr. Hardy. The following amendment was made to the Recommendation:

...specified under the above actual five-year average use information from...

Mr. Fujimura asked for clarification if the water would be allocated to the third decimal point. Mr. Hardy replied that water would be allocated to a thousand
gallon per day as has been done in the past. Discussion followed regarding how the additional water use permit applications that have been submitted would be handled. Ms. Loui added that staff would be coming to the Commission in January with recommendations for the other pending permits, but the first step would be to handle Oahu Sugar Co. (OSCo.) permits because they were the long-term users. Mr. Hardy said public hearings will be scheduled to specify aquifer system boundaries for the entire Oahu area.

Mr. Tam said that would raise a legal point and an additional Recommendation 10 should be added to the submittal:

10. The amount authorized could be reduced in the future. It should be taken into account the possibility that should the surface recharge be diminished substantially, the Commission may relook at the use of the wells given the uncertainty of future caprock recharge.

By using the five-year average in terms of determining the amount of allocation, Mr. Fujimura asked if OSCo. was being penalized by being taken at a different standard from everyone else.

Mr. Hardy stated that within the Code in regards to projected use by future users, should the projected use be inflated and the actual use comes in under the projected use within a four-year period the Commission can reduce it. Mr. Tam suggested that the Commission may wish to set a ceiling and deal with the actual uses after setting a time period.

Mr. Hugh Morita representing OSCo. stated they did not agree with the reduction on the permit recommended by staff. They believed that they (OSCo. and the Ewa Plantation) created the Ewa Caprock Aquifer by reason of basal recharge over the caprock margin, which was also mentioned by Mr. Hardy and in a previous report by DLNR. Regarding their irrigation requirements, these were requested based on a pan evaporation model and methods used. Mr. Morita gave a description of the model. Discussion followed on Mr. Morita's presentation.

Mr. Fujimura asked what would happen if OSCo. were to monitor the actual usage rather than inferred figure and if five years would be adequate time to determine the accuracy of water use. Mr. Morita replied that the usage would be a more accurate figure of OSCo. usage. They would assure that maintenance on the meters were accurate so they would not lose any accounting of water use. Assuming the acreage remained the same, five years would be adequate time.

Mr. Martin submitted testimony (see office file) for NHAC commenting on staff's recommendation. He also asked for clarification on the approach used by staff on the water use in regard to the process.

Mr. Fujimura moved to restore the original water use numbers requested by the applicant and the actual pumpage be monitored over a five-year period and that at the end of the equivalent five-year period the permit numbers may be modified to reflect the original intent of using a five-year average.

Mr. Cox said he would second the amendment with the addition that Recommendation 10 be added as suggested by Mr. Tam. Mr. Cox asked if it would be appropriate to ask for data on salinity and asked Mr. Morita if OSCo. gets salinity measurements.

Mr. Morita replied they do have that information. Ms. Loui questioned if the salinity information was necessary because it is a requirement of the rules. Mr. Cox felt it was necessary because one of the concerns of the Commission is the salinity which is getting higher in the Ewa Caprock. Ms. Loui explained that the data is important but it is in the Administrative Rules that all wells provide that information so does not need to be in the permit.
Mr. Tam brought to the Commission’s attention that the submittal suggests the unofficial sustainable yield for the area is between 10 and 15 mgd and Mr. Fujimura’s revised number for approval is 16 mgd. He inquired of the staff on the sustainable yield level because technically the Commission would be approving a use in excess of the yield.

Mr. Hardy explained that staff is working with a range. Ms. Loui added that the lines of the sectors are artificial. The Puuloa System exists and is separate from the next. When the public hearings are held in January, staff will be recommending the adoption of the larger sector but not necessarily the “hard numbers” for the systems.

Mr. Tam had no problem with the explanation if the Commission was satisfied but wanted to assure that the records reflect that the separation of the districts are geographically artificial and that the real consideration is that the larger area still comes within the overall sustainable yield.

Ms. Joyce Brown of NHAC asked if by using the five-year average would it encourage the user to waste water to show they are using a higher amount of water. Mr. Fujimura said if it was anyone other than OSCo., they may question it but in previous discussions information supplied was reviewed in detail. They are not water wasters and the whole system was water conservation oriented. He therefore had a very high confidence level where OSCo. was concerned. Mr. Cox agreed with Mr. Fujimura and added that the numbers were based upon the needs of the plant.

Unanimously approved as amended (Fujimura/Cox).

ITEM 6

MINAMI GROUP (USA), INC., APPLICATION FOR A WATER USE PERMIT, MINAMI 1 WELL, KOOALAUPUKO GROUND WATER MANAGEMENT AREA, KANEHOE, OAHU

Mr. Nakata stated he was in conflict on this item because he sits on the Board of the Minami Foundation.

Mr. Sean Houlihan, Golf Course Superintendent, stated that he was notified several hours before the meeting that staff was not in agreement with the quantity requested by Minami Group. He explained that their water numbers were taken from 1992. January through July 1992 had been their driest period in the 3 1/2 years they had been working on the project. They had a significantly wet fall and their numbers were very low since September and have not irrigated the course since September. He stated they were comfortable with 150,000 gallons per day as an average number and would need to use conservation methods at certain times of the year to stay with that amount.

Deferred due to lack of quorum.

ITEM 7

REVISION - HONOLULU BOARD OF WATER SUPPLY APPLICATION FOR A WATER USE PERMIT, HAWAIIAN ELECTRIC COMPANY WAIAU TUNNEL, WAIAU, OAHU

Amendments made to submittal by staff:

Under Action Requested:

Hawaiian Electric Company  1 mgd for industrial use through BWS
Honolulu BWS [3 to 5 mgd] 1 mgd for municipal use

Under Recommendation:

...a water use permit to use [five to seven mgd] three mgd from the tunnel...

- 7 -
Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Oahu Sugar Co., Ltd.
Applications for Water Use Permits
Puuloa Water Management Area, Waipahu, Oahu

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Well</th>
<th>Landowner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oahu Sugar Co., Ltd</td>
<td>1900-01</td>
<td>Hawaii Prince Hotel Corp.</td>
</tr>
<tr>
<td></td>
<td>1901-01</td>
<td>2237 Kuhio Ave.</td>
</tr>
<tr>
<td></td>
<td>1900-13</td>
<td>Honolulu, HI 96815</td>
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<tr>
<td></td>
<td>2001-01</td>
<td>U.S. Navy</td>
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<tr>
<td></td>
<td>1902-01</td>
<td>Naval Facilities Eng Comm</td>
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<td></td>
<td>2000-01</td>
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<tr>
<td></td>
<td>1902-01</td>
<td>Haseko Hawaii, Inc.</td>
</tr>
<tr>
<td></td>
<td>2000-01</td>
<td>820 Mililani St., Ste 610</td>
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<tr>
<td></td>
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<tr>
<td></td>
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<td>Campbell Estate</td>
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<td></td>
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<td>828 Fort St Mall, Ste 500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Honolulu, HI 96813</td>
</tr>
</tbody>
</table>

Background

Completed applications were submitted to the Commission on September 21 & October 16 (1902-01 only), 1992. The applications are for existing wells with the following hydrologic information:

Source Information

All sources are dug wells which withdraw water from the Puuloa (unofficial) Aquifer System, Ewa Caprock Aquifer Sector, Oahu. The following information is pertinent for this Aquifer System:
Aquifer: Puuola System, Ewa Caprock Aquifer Sector, Oahu

Sustainable Yield (unofficial): 10 to 15 mgd
Existing Water Use Permits: 1.76 mgd
Available Allocation (unofficial): 8.24 to 13.24 mgd
Total of other pending allocations: 3.14 mgd

Existing dug wells applied for have the following physical characteristics and are shown in Exhibit 1:

<table>
<thead>
<tr>
<th>Well</th>
<th>Location</th>
<th>Intake Pipe Diameter</th>
<th>Water Level</th>
<th>Ground</th>
<th>Bottom of Open Hole</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP 20, Well No. 1900-01</td>
<td>Ewa District, Oahu, TMK-9-1-10:8</td>
<td>1830</td>
<td>12 in. Elevations (unofficial)</td>
<td>12 ft.</td>
<td>6 ft.</td>
</tr>
<tr>
<td>EP 20, Well No. 1900-13</td>
<td>Ewa District, Oahu, TMK-9-1-10:11</td>
<td>1832</td>
<td>NA in Elevations (unofficial)</td>
<td>6 ft.</td>
<td>6 ft.</td>
</tr>
</tbody>
</table>
Use Information

All requested use from the dug well sources are for agricultural irrigation of sugarcane. Specific information for each well is listed as follows:

<table>
<thead>
<tr>
<th>Well</th>
<th>Place of water use</th>
<th>Requested mgd</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900-01</td>
<td>OSCO Fields 75 &amp; 76 at TMK: 9-1-10:7</td>
<td>1.550</td>
</tr>
<tr>
<td>1900-13</td>
<td>OSCO Field 90 at TMK: 9-1-10:11</td>
<td>1.320</td>
</tr>
<tr>
<td>1901-01</td>
<td>OSCO Field 74 at TMK: 9-1-12:5</td>
<td>1.194</td>
</tr>
<tr>
<td>1902-01</td>
<td>OSCO Fields 71,84,86,88,91 at TMK: 9-1-1: various, 12: various, 13: various</td>
<td>4.160</td>
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<tr>
<td>2000-01</td>
<td>OSCO Fields 80 &amp; 90 at TMK: 9-1-10:7</td>
<td>2.080</td>
</tr>
<tr>
<td>2001-01</td>
<td>OSCO Fields 60 TO 64 &amp; 66 at TMK: 9-1-10:2</td>
<td>5.890, 10.304</td>
</tr>
</tbody>
</table>

Nearby Surrounding Wells

There are 51 other wells within a mile of these wells. (see Exhibit 1.) 25 of these wells are currently in use.

Public Notice

In accordance with HAR §13-171-17, a public notice was published in the Star Bulletin on October 26 & November 2, 1992 for Wells EP 20, 21, 24, 23, & 30 and on November 9 & 16, 1992 for EP 27A&B, 28, & 29. Copies of these notices were sent to the Mayor’s office and the Board of Water Supply. Additional notice copies were sent to the County Council and Department of Water Supply. Copies of the completed
application were sent to the Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, Aquatic Resources & Historic Preservation Divisions of the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by November 18, 1992 & December 1, 1992, respectively.

Objections

There were no objections filed by any person who has property interest in any land within the hydrologic unit of the source of water supply or any person who will be directly and immediately affected by the proposed water use. Other objections to the application were submitted by:

<table>
<thead>
<tr>
<th>Objection</th>
<th>Objection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Hawaiian Advisory Council.</td>
<td>No objection specific to application but rather objections to general water use permit process.</td>
</tr>
</tbody>
</table>

Field Investigation

The water sources and existing uses were investigated and verified on November 20, 1992.

Analysis

These existing sources have used brackish caprock water for agricultural irrigation of sugarcane for approximately sixty (60) years. Impact on other local wells should not be any different than it has been over the past sixty (60) years. No specific objections to these applications have been submitted to the Commission.

RECOMMENDATION:

That the Commission approve the issuance of water use permits to Oahu Sugar Co., Ltd. for each well and its corresponding use as specified under the above use information from the Puuloa Aquifer System. These permits are subject to the following:

1. The water use authorized by the permit must be for the reasonable-beneficial use and from the source described in the permit.

2. That OSCO. shall submit a schedule identifying when fields specified in these applications will be taken out of cultivation permanently.
3. The water use and withdrawal shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards.

4. The water use will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act.

5. The applicant shall provide and maintain an approved meter for measuring and reporting total water usage on a monthly basis.

6. Prior to issuance of the permit, the applicant shall submit a water shortage plan, as required by §13-171-42(c), that identifies what the applicant is willing to do should the Commission declare a water shortage in the Ewa Caprock Ground Water Management Area.

7. Modification of any permit condition shall be approved by the Commission. Modification of any permit condition without notification may result in the revocation of the water use permit.

8. The applicant shall update and modify permit when necessary to comply with all applicable laws, rules, and ordinances.

9. The final permit shall be issued only after review by the Attorney General.

Respectfully submitted,

RAE M. LOUI
Deputy Director

APPROVED FOR SUBMITTAL:

WILLIAM W. PATY, Chairperson
Ms. Rae M. Loui  
Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii  96809

Dear Ms. Loui:

Subject:  Your Letter of November 17, 1992 on Water Use Permit for Oahu Sugar Caprock Well No. 1902-01

Thank you for the opportunity to comment on the application. We have no objections to issuance of a water use permit as long as the pumpages from the well do not exceed the sustainable yield of the groundwater basin.

If you have any questions, please call Herbert H. Minakami at 527-6183.

Very truly yours,

KAZU HAYASHIDA  
Manager and Chief Engineer
FIELD MEMORANDUM

DECLARANT (FILE REF.): OAHU SUGAR    DATE: November 20, 1992

PRESENT: Susan Swanson, DLNR

SOURCES: Ewa Plantation (EP) Caprock Wells:
EP 20 - State Well # 1900-01
EP 21 - State Well # 2000-01
EP 23 - State Well # 2001-01
EP 24 - State Well # 1901-01
EP 27a,b, 28, 29 - State Well # 1902-01
EP 30 - State Well # 1900-13

USE: Irrigation of sugar cane fields.

FIELD NOTES: Hugh Morita, Irrigation Engineer, met me at the Oahu Sugar Co. Ltd. offices in Waipahu on November 20, 1992 at 9:00 am for a field inspection of Oahu Sugar Co.'s caprock wells. These shallow dug wells are uncased and provide brackish water used in cultivation of sugar cane.

We went to each of six sites, photographed the wells and recorded information pertaining to the pumps, if available. Mr. Morita gave me a field map defining the area irrigated by each well. Many of these wells were developed for sugar cane production in the 1930's.

Oahu Sugar Co. leases land and uses wells from several different owners to cultivate sugar cane. Wells # 20 & 24 are located on land that was previously leased to Oahu Sugar Co. The land around wells 20 and 24 is now a golf course; but water from these wells is used solely for sugar cane production. The inspection was complete at 11:30 am.

Since my inspection, the Commission on Water Resource Management met and approved Oahu Sugar's water use permits to withdraw a total average annual gpd of 16,194,000 gallons.

Attachments for each well: Checklist, Photographs, A map showing locations of wells and irrigated fields, USGS maps, copies of the tax map and copies of the water use declaration and ground water management zone permit applications.
EP 30

State Well # 1900-13
PART I: USE OF WATER

The frequency and duration of irrigation depends on rainfall. The sugar cane is irrigated and fertilized by drip irrigation. The pumps operate more or less 24 hours/day for 21, 22 months of the sugar cane's life cycle. In the last month, water is withheld so that the sugar cane will dry out, so that the field can be burnt. After harvesting the scorched sugar cane, within two weeks, the keiki sugar cane is planted, and the cycle starts again.

GWMZ Applicant: Oahu Sugar Co. Ltd.

Water Use Decl. File Ref.: Oahu Sugar Co. Ltd.

State Well # 1900-13 Name: Caprock Wells, Ewa Plantation Pump # 30

1. Tax Map Key where the water is used: TMK: 9-1-10:11
   Does the applicant own this land? NO.

2. What is the water used for? Irrigation of 131.73 acres of sugar cane.

3. Is the quantity of water use being measured? NO, but there is a water specialties meter installed that is not functioning. The meter was frozen on the reading: 42655100.

4. If this person takes from a multi-user pipe or ditch system? NO

PART II: WATER SOURCE

1. Where does the water come from/what kind of source is this? Excavated well in bottom of borrow pit.

2. Show the source location on maps, determine latitude and longitude, and document the nature of source development by measurements, sketches, and photographs.
   How is the water taken? manually controlled, electric vertical shaft 40 hp Worthington pump, serial # EAJ519495.
   What is the capacity for taking (gpm)? 1110 gpm
   How often is it taken (used)? almost continuously.

3. Tax Map Key at the source: TMK: 9-1-10:13
   Determine applicant's relation to source. Does the applicant:
   1) Operate and maintain the source? YES
   2) Own the land at the source? NO
   3) Use the water from this source? YES
   4) Own the land where the water is being used? NO, the Federal Government owns the land.

4. Does anyone else also use water from this source? NO

REMARKS: In December, 1992, The Commission on Water Resource Management approved Oahu Sugar Co.'s water use permit to withdraw an average annual gallons/day of 1,320,000.

Verified By: Susan Swanson Date of Inspection: 11/20/92
PHOTO # 15 & 16
Two views of pumps 27a and 27b which draw brackish water from shallow pools in a corral pit. Both of these pumps are 60 hp Worthington vertical shaft pumps with capacities of 1838 gpm.
View looking toward pumps 28 & 29. Located in the vicinity of pumps 27 a & b. Pumps 28 and 29 draw water from the same corral pit. Pump 28 is a 50 hp Worthington vertical shaft pump @ 1577 gpm. Pump 29 is a 100 hp Allis Chalmer Centrifugal pump with a capacity of 2078 gpm. These four pumps irrigate 731.43 acres of sugar cane. The Water Commission approved Oahu Sugar Co’s use permit to withdraw an average gallons/day of 4,160,000.
TAX MAP REDUCED TO SAME SCALE AS OAHU SUGAR CO.'S FIELD MAP, 1" = 4000', SHOWING LOCATIONS OF THE WELLS AND THE FIELDS IRRIGATED BY EACH WELL.
APPLICATION FOR WATER USE PERMIT

1. WATER MANAGEMENT AREA: Pearl Harbor

2. (a) WELL/DIVERSION OWNER:
   Firm Name: Oahu Sugar Co., Ltd.
   Contact Person: W. D. Balfour, Jr.
   Address: P.O. Box "O", Wai`alae
   Hawaii 96815

   (b) LANDOWNER:
   Firm Name: United States Navy
   Contact Person: Director Real Estate Division
   Address: Naval Facilities Engineering Command
   Pearl Harbor, HI 96860

3. SOURCE TYPE:
   □ Spring  □ Stream  □ Basal  □ Dike-confined  □ Perched  □ Caprock

4. SOURCE NAME AND NUMBER:
   EP30  State Well No. 1900-13
   (well or stream diversion name/number)

5. SOURCE LOCATION:
   Island: Oahu  Tax Map Key: 9-1-10:11
   Address: Puuo, Ewa District
   (Attach a USGS map, scale 1:2000, and a properly tax map showing source location referenced to established property boundaries.)

6. LOCATION OF PROPOSED WATER USE (if different from #3):
   OCo Field 090
   (Indicate location of water use on same map showing source location.)

7. QUANTITY OF WATER REQUESTED:
   1,320,000 gallons per day

8. QUALITY OF WATER REQUESTED:
   □ Fresh  □ Brackish  □ Salt  □ Potable  □ Non-Potable

9. PROPOSED USE:
   □ Municipal (including hotels, stores, etc.)
   □ Domestic (individual, noncommercial use)
   □ Irrigation (specify)  Sugarcane
   □ Military
   □ Industrial
   □ Other (specify)

10. DESCRIBE ANY POTENTIAL RESTRICTIONS ON USE (i.e., instream standards, seasonal variations):

11. PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION:
    24 hours/day continuous operation
    (Indicate hours of operation)

12. PROPOSED METHOD OF TAKING THE WATER:
    □ Artesian Flow  □ Submersible Pump  □ Diverted Flow  □ Vertical Turbine Pump  □ Centrífugal Pump

13. NUMBER OF RESIDENTIAL OR COMMERCIAL UNITS TO BE SERVED (specify):
    none

14. TOTAL ACRES PROPOSED FOR IRRIGATION AND TYPE OF CROP:
    131.73  Sugarcane
    (acres) (crop)

15. REMARKS, EXPLANATIONS:

Owner (print): Oahu Sugar Co., Ltd.
Signature: W. D. Balfour
Date: December 5, 1991

Landowner (print): U.S. Navy
Signature: Michael Kline
Date: 5 AUG 1992

or Official Use Only:
Date Received ____________________________
Date Accepted ____________________________
STATE WELL NO.: 1900-13  
ISLAND: Oahu

WELL NAME OR DESIGNATION: Ewa Plantation EP30

SOURCE OR STATION NAME (for a battery of wells): Ewa Pump 30 (EP30)

A. WELL OPERATOR

Firm name: Oahu Sugar Company, Ltd
Contact person: W.D. Balfour, Jr.
Address: P.O. Box "O"
Naipahu, Hawaii 96797
Zip: 96797  Phone: 677-3577

B. OWNER OF WELL SITE

Firm name: Oahu Sugar Company, Ltd
Contact person: W.D. Balfour, Jr.
Address: P.O. Box "O"
Naipahu, Hawaii 96797
Zip: 96797  Phone: 677-3577

C. WELL LOCATION

Tax Map Key: 9-1-10:11  
Town, Place, District: Puauloa, Ewa District
Attach USGS "Quad" map (scale 1:24,000), tax map, or other map showing the well location.

D. WELL DATA

Excavated well at the bottom of borrow pit.

For Drilled Wells, submit "as-built" drawing, driller's log, and pump test results, and complete items below.

For Tunnels and Shafts, submit construction drawings, plot plan, or sketch map.

Ground elevation (Mean sea level): about 5 ft.
Reference point (used to measure depth to water):
Elevation: N/A ft.
Description: N/A

Depth to water (Below reference point): N/A ft.
Maximum recorded chloride: 1110 ppm
Minimum recorded chloride: 477 ppm
Maximum chloride in 1987: 1010 ppm

E. INSTALLED PUMP DATA

Pump type: 0 Vertical shaft 0 Submersible 0 Centrifugal 0 Other (specify):
Power: 0 Diesel, ___ HP 0 Gas, ___ HP 0 Electric, ___ HP 0 Other (specify):
Pump capacity: 1110 gallons per minute
Pump installation contractor: Oahu Sugar Company

... (continued over)
F. DECLARATION OF WATER USE

NOTE: The purpose of the Declaration of Water Use is to obtain information necessary for the management of the State's water resources. The Declaration does not confer a legal right to water or its use.

Water use data are recorded: [ ] Daily [ ] Weekly [ ] Monthly

Method of measurement: [ ] Flow Meter [ ] Orifice [ ] Other (describe): Pump Run Time x Pump Capacity

Quantity of Use (Report measured or estimated monthly water use from the well described on the reverse side of this form, for the calendar years 1983 through 1987. For a battery of wells which are not individually metered, but which are connected to a single meter or other measuring device, report total use from the battery.):

WATER USE, IN GALLONS x 1000

<table>
<thead>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<td>January</td>
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<td>30630</td>
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Minimum day's use: 0 gallons  Maximum day's use: 1,598,000 gallons

Typical times of usage: Constant usage throughout the day

Type of Use (Check all category boxes that apply and provide additional information as indicated):

- [ ] Municipal (including resorts, hotels, businesses)
- [ ] Domestic (systems serving 25 people or less)
- [ ] Irrigation
- [ ] Other

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<td>Specify (livestock, aquaculture, etc.):</td>
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I declare that the contents of the above Declaration of Water Use are, to the best of my knowledge and belief, true, correct, and complete.

Water User's Signature: [Signature] Date: 5/5/89
Printed Name: W N Balfor, Jr
Firm or Title (Well Operator, etc.): Oahu Sugar Company, Ltd.
MEMORANDUM

TO: Interested State Agencies & Other Parties
FROM: Rae M. Loui, Deputy Director, Commission on Water Resource Management
SUBJECT: Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01.

If you have any objections or comments on the above application, please submit them to us in writing by December 1, 1992.

Should you have any questions, please contact the Commission on Water Resource Management at 587-0225.

RH:ko
Enc.
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Henry Sakuda, Administrator
Division of Aquatic Resources

SUBJECT: Comments on Water Use Permit Application for Puuloa Ground Water Management Area, Oahu

The application by Oahu Sugar Company for Well No. 1902-01 at Ewa, Oahu involves pumping 4.16 million gallons per day of non-potable caprock water for surface irrigation use. The application requests formalization of an existing use.

There appears to be no potential for impact on surface waters. We therefore have no objections with reference to the potential effects on the aquatic biota.
Mr. W.D. Balfour, Jr.
President & Manager
Oahu Sugar Co., Ltd.
P.O. Box 0
Waipahu, HI 96797

Dear Mr. Balfour:

Enclosed is a copy of the public notice for your water use permit application which was published in the Honolulu Star Bulletin, issues of November 9 & 16, 1992.

Please be aware that there may be objections to your application. If objections are made, the objector is required to file such objections with the Commission and is also required to send you a copy of the objections.

You, or any other party, may respond to objections by filing a brief in support of your application with the Commission within ten (10) days of the filing of an objection. You, or the other party, must also send a copy of the response to the objector.

If you have any questions, please contact Roy Hardy at 587-0225.

Sincerely,

RAE M. LOUI
Deputy Director

RH:ko
Encl.
Mr. W.D. Balfour, Jr.
President & Manager
Oahu Sugar C., Ltd.
P.O. BOX O
Waipahu, HI 96797

Dear Mr. Balfour:

Application for a Water Use Permit
Puuloa Ground Water Management Area, Oahu

We acknowledge receipt, on October 16, 1992, of your completed water use permit application for the EP 27A,27B,28,29 Well (Well No. 1902-01). You can expect your application to be processed within ninety (90) days from the date of receipt unless there are objections to your application.

We will be sending you a copy of the public notice for your application and any further information regarding the status of your application. In addition, we may need to visit and verify your proposed water source and use sites, if we have not done so already under our registration program.

If you have any questions, please contact Roy Hardy at 587-0225.

Sincerely,

RAE M. LOUI
Deputy Director

RH:ko
MEMORANDUM

TO: Interested State Agencies & Other Parties

FROM: Rae M. Loui, Deputy Director Commission on Water Resource Management

SUBJECT: Water Use Permit Application
          Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01.

If you have any objections or comments on the above application, please submit them to us in writing by December 1, 1992.

Should you have any questions, please contact the Commission on Water Resource Management at 587-0225.

RH:ko
Enc.
MEMORANDUM

TO: Honorable Hoaliku L. Drake, Director
Department of Hawaiian Home Lands

FROM: William W. Paty, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01.

If you have any objections or comments on the above application, please submit them to us in writing by December 1, 1992.

Should you have any questions, please contact the Commission on Water Resource Management at 587-0225.

RH:ko
Enc.
Mr. Clayton H. W. Hee
Chairman & Trustee At Large
Office of Hawaiian Affairs
711 Kapiolani Blvd., Suite 500
Honolulu, Hawaii 96813-5249

Attn: Ms. Linda Delaney, Land & Natural Resources Division

Dear Mr. Hee:

Notice of an Application for a Water Use Permit
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01.

If you have any objections or comments on the above application, please submit them to us in writing by December 1, 1992.

Should you have any questions, please contact the Commission on Water Resource Management at 587-0225.

Very truly yours,

Signatures

Enc.
Honorable Frank F. Fasi, Mayor
City & County of Honolulu
City Hall
Honolulu, Hawaii 96813

Attn: Mr. Jeremy Harris

Dear Mayor Fasi:

Notice of an Application for a Water Use Permit
Puuloa Ground Water Management Area, Oahu

In accordance with the Department of Land and Natural Resource Administrative Rule, Section 13-171-17(a), we are sending you a copy of the public notice for the water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01, which was published in the Star Bulletin.

In addition, Section 13-171-13(b) of our Administrative Rules states:

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."

We have attached a copy of the application for your review and would appreciate receiving your comments, within the next sixty (60) days, on whether this water use is consistent with county plans and policies.

Very truly yours,

WILLIAM W. PATY

Enc.
Honorable Gary Gill, Chair
City Council
City & County of Honolulu
City Hall
Honolulu, Hawaii 96813

Dear Mr. Gill:

Notice of an Application for a Water Use Permit
Puuloa Ground Water Management Area, Oahu

In accordance with the Department of Land and Natural Resource Administrative Rule, Section 13-171-17(a), we are sending you a copy of the public notice for the water use permit application for Oahu Sugar Co., Ltd. for Well No. 1902-01, which was published in the Star Bulletin.

In addition, Section 13-171-13(b) of our Administrative Rules states:

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."

We have attached a copy of the application for your review and would appreciate receiving your comments, within the next sixty (60) days, on whether this water use is consistent with county plans and policies.

Very truly yours,

[Signature]
WILLIAM W. PATY

Enc.
November 10, 1992

Ms. Rae M. Loui
Deputy Director
Commission on Water Resource Management
P. O. Box 621
Honolulu, HI 96809

Dear Ms. Loui:

Subject: Oahu Sugar Company's (OSCo) Ewa Caprock Wells Water Use Permit Applications

We acknowledge receipt of your letter regarding the public notice of the permit applications in the Honolulu Star Bulletin issues of October 26 and November 2, 1992.

We are concerned about the implications contained in your letter—that OSCo's permit application is lumped together with all the other applications.

It has been our understanding that the Water Commission and, to a large degree, the staff and the major land developers view OSCo's use of the Ewa Caprock Aquifer as being grandfathered. We have used and maintained the aquifer for many years while the other applications have just arrived on the scene. When it becomes necessary to issue water use permits for the Ewa Caprock Aquifer, Oahu's legitimate needs should be satisfied prior to the needs of the newcomers.

If this presumption is not accurate, I would appreciate a call at 677-3577 so we may discuss the issue further. Thank you.

Very truly yours,

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

WDB/HM:yk
FACSIMILE TRANSMITTAL PAGE

Please deliver the following pages to:

Name: Hawaii Newspaper Agency
Company: Honolulu Star Bulletin Attn: Legal Advertising
From: Commission on Water Resource Management
Dept. of Land & Natural Resources
Date: Nov. 4, 1992 Time: 9:20 am
Message: PUBLIC NOTICE—Applications for Water Use Permits
Ground Water Management Areas

Total number of pages (including Transmittal Page): 4

If you do not receive all of the pages legibly, please call back: (808) 587-0223
Sending Facsimile Number: (808) 587-0219
Receiving Facsimile Number: (808) 525-7449

TRANSMISSION REPORT

THIS DOCUMENT (REDUCED SAMPLE ABOVE) WAS SENT

** COUNT **
# 4

*** SEND ***

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XEROX TELECOPIER 7020
FACSIMILE TRANSMITTAL PAGE

Please deliver the following pages to:

Name: Hawaii Newspaper Agency
Company: Honolulu Star Bulletin Attn: Legal Advertising
From: Commission on Water Resource Management
Dept. of Land & Natural Resources
Date: Nov. 4, 1992 Time: 9:20 am
Message: PUBLIC NOTICE - Applications for Water Use Permits
Ground Water Management Areas

Total number of pages (including Transmittal Page): 4

* * * * * * * *

If you do not receive all of the pages legibly, please call back: (808) 587-0225

Sending Facsimile Number: (808) 587-0219
Receiving Facsimile Number: (808) 525-7449
PUBLUC NOTICE

Applications for Water Use Permits
Ground Water Management Areas

Applications for the following water use permits have been received and are hereby made public, in accordance with Department of Land and Natural Resources Administrative Rules 13-171, "Designation and Regulation of Water Management Areas".

KUNIA BY GENTRY (Well No. 2402-04)

Applicant: GENTRY DEVELOPMENT CO.
560 N. Nimitz Hwy.
Honolulu, HI 96817
Date Completed Application Received: October 8, 1992
Aquifer: Waipahu System, Pearl Harbor Sector, Oahu
Well Source: Kunia by Gentry, Well No. 2402-04, Honouliuli, Ewa, Oahu, at
Tax Map Key: 9-2-1:1
Quantity Requested: 500,000 gallons per day
Proposed Water Use: Municipal use for Kunia by Gentry project
Place of Water Use: Kunia by Gentry at Tax Map Key: 9-2-2:0

EP 27A,27B,28,29 (Well No. 1902-01)

Applicant: OAHU SUGAR CO., LTD.
P.O. Box O
Waipahu, HI 96797
Date Completed Application Received: October 16, 1992
Aquifer: Puuloa System, Ewa Caprock Sector, Oahu
Tax Map Key: 9-1-12:5
Quantity Requested: 4,160,000 gallons per day
Proposed Water Use: Irrigation of 713.43 acres of sugarcane
Place of Water Use: Fields 71,84,86,88,91 at Tax Map Key: 9-1-12:0

MANOA-BISHOP ESTATE (Well No. 1948-03)

Applicant: BISHOP ESTATE
567 South King St.
Honolulu, HI 96801
Date Completed Application Received: October 16, 1992
Aquifer: Nuuanu System, Honolulu Sector, Oahu
Well Source: Manoa Bishop Estate, Well No. 1948-03, end of Kumulani St., Oahu at
Tax Map Key: 2-9-55:4
Quantity Requested: 1,000,000 gallons per day
Proposed Water Use: Municipal water for 1600 houselots
place of Water Use: Municipal system at Tax Map Key: 2-9-55:0

(more)
McKINLEY AQUACULTURE (Well No. 1850-29)

Applicant: McKINLEY HIGH SCHOOL
1039 S.King St.
Honolulu, HI 96814

Date Completed Application Received: October 6, 1992
Aquifer: Nuuanu System, Honolulu Sector, Oahu
Well Source: McKinley Aquaculture, Well No. 1850-28, 1039 S. King St., Oahu at
Tax Map: 2-3-9:1
Quantity Requested: 85,000 gallons per day
Proposed Water Use: Educational demonstrations of aquaculture
Place of Water Use: 1039 S. King St. at Tax Map Key: 2-3-9:1

Written objections or comments on the application for water use may be filed by any person who has property interest in any land within the hydrologic unit of the source of water supply, any person who will be directly and immediately affected by the proposed water use, or any other interested person. Written objections shall: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; and (3) state all grounds for objections to the proposed permits. Send written objections by DECEMBER 1, 1992 to 1) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809, and 2) a copy of the objection letter to the applicant at the above address.

COMMISSION ON WATER RESOURCE MANAGEMENT

WILLIAM W. PATY, Chairperson

Dated: NOV 4 1992

**STATE OF HAWAII**

**REQUISITION & PURCHASE ORDER**

**DEPARTMENT OF LAND AND NATURAL RESOURCES**

**NOTICE TO VENDORS**
Conditions of purchase are listed on the back side of this purchase order. Please read carefully. Payments may be delayed if all steps are not followed.

Hawaii Newspaper Agency
Honolulu Star Bulletin
P.O. Box 3350
Honolulu, HI 96801  Attn: Legal Ad

The State of Hawaii is an EQUAL EMPLOYMENT OPPORTUNITY and AFFIRMATIVE ACTION employer. We encourage the participation of women and minorities in all phases of employment.

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Applications for Water Use Permits
Ground Water Management Areas

Publish in issues of Nov. 9 & 16, 1992
(see attached notice)

Price List No. FL 92-66

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$1,000.00

**DELIVERY ADDRESS**

Water Resource Management
P.O. Box C21
Honolulu, Hawaii 96809

**BILLING ADDRESS**

Compliance with Water Resource Management
P.O. Box C21
Honolulu, Hawaii 96809

**QUAN.**

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Applications for Water Use Permits
Ground Water Management Areas

Publish in issues of Nov. 9 & 16, 1992
(see attached notice)

Price List No. FL 92-66

**AUTHENTICATED BY:**

A. FURUUCHI

**AUTHORIZED SIGNATURE:**

A. FURUUCHI

**REQUISITION NO:**

00136851

**VENDOR NUMBER:**

117494 00

**OBJECT NUMBER:**

E XXXXXXXX XXX

**OBJECT DESCRIPTION:**

PUBLIC NOTICE

Applications for Water Use Permits
Ground Water Management Areas

Publish in issues of Nov. 9 & 16, 1992
(see attached notice)

Price List No. FL 92-66

**ESTIMATED COST:**

$1,000.00

**ACTUAL COST:**

$1,000.00

**OCT DEPT DATA**

01 621 G 93 044 C 4000 0726 000000 00 075 1,000 100

**COPY #1 - VENDOR**
APPLICATION FOR WATER USE PERMIT

(a) WELL/DIVERSION OWNER:
Name: Oahu Sugar Co., Ltd.
Contact Person: H. D. Hafifour, Jr.
Address: P.O. Box "O", Waipahu, Hawaii 96797
Phone: (808) 677-3577

(b) LANDOWNER:
Name: Haseko Hawaii, Inc.
Contact Person: Myles Nishijima
Address: 820 Miliiani St., Suite 610
Honolulu, HI 96813
Phone: 522-5025

WATER MANAGEMENT AREA: Pearl Harbor

SOURCE TYPE:
- Ground Water
- Surface Water

SOURCE NAME AND NUMBER:
- Spring
- Stream
- Dike-confined
- Perched $o$Crock

SOURCE LOCATION:
- Island: Oahu
- Tax Map Key: 9-1-12:5
- Address: Ewa Beach, Ewa District

LOCATION OF PROPOSED WATER USE:
OSCo Fields 71, 84, 86, 88, 91

QUANTITY OF WATER REQUESTED:
4,160,000 gallons per day

QUALITY OF WATER REQUESTED:
- Fresh
- Brackish
- Salt
- Potable
- Non-Potable

PROPOSED USE:
- Municipal (including hotels, stores, etc.)
- Domestic (individual, non-commercial water use)
- Irrigation (specify) Sugarcane
- Military
- Industrial
- Other (specify)

DESCRIPTION OF ANY POTENTIAL RESTRICTIONS ON USE:

1. PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION:
24 hours/day continuous operation

2. PROPOSED METHOD OF TAKING THE WATER:
- Artesian Flow
- Submersible Pump
- Diverted Flow
- Vertical Turbine Pump
- Centrifugal Pump

3. NUMBER OF RESIDENTIAL OR COMMERCIAL UNITS TO BE SERVED:
None

4. TOTAL ACRES PROPOSED FOR IRRIGATION AND TYPE OF CROP:
731.43 Sugarcane

5. REMARKS, EXPLANATIONS:
Submittal of this water use permit application is pursuant to the directives of the Water Commission’s Chairperson’s letter.

Owner (print) Oahu Sugar Co., Ltd.
Signature
Date December 5, 1991

Landowner (print) Haseko Hawaii, Inc.
Signature
Date 10/7/91

Nelson W. G. Lee
Hydrologic Unit

Division of Water Resource Management

Date Received

Date Accepted

Division Works No.

State Well No.
15. REMARKS, EXPLANATIONS: of August 26, 1991 (attached). This use is a long-standing existing use. Since establishment of the Pearl Harbor Groundwater Control Area and the Water Management Area, the BLNR and the Water Commission have recognized this existing use, but has not officially certified it. This is due in part to the attention paid to regulating the basal aquifers of the control area; and in part to the lack of an officially established sustainable yield for the caprock aquifer. It is OSCo's understanding that after due process, its caprock aquifer uses will be officially certified and water use permits officially issued.
ATTACHMENT FOR ITEM 5 & 6
-Portion of USGS Puuloa Quad.-
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**Remittance Advice**

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**Check Details**

**Check Number**: 081980

**Date**: 10/13/92

**Amount**: $25.00

**Vendor**

DEPT. OF LAND & NATURAL RESOURCES
P.O. BOX 621
HONOLULU, HI. 96809

**Authorized Signature**: M. Amao
Ray - this should be the final

WTP appl. for OSCs exist.

Sources.
TRANSMITTAL SHEET

TO: ATTN: RAE M. LOUI
Commission on Water Resource Management

DATE: October 14, 1992

SUBJECT: Oahu Sugar Company Application for Water Use Permit, Well No. 1902-01

( ) For your review and comment
( ) For your information
( ) For signature
( ) Status please
( ) Per our conversation

( ) For your approval
( ) For your files
( ) Please handle
( ) Please return to me
( ) RUSH

REMARKS: Please call Jim Wriston at 671-4869 or me at 671-4861 should you have any questions.
APPLICATION FOR WATER USE PERMIT

Instructions: Please print or type and send completed application with attachments to the Div. of Water Resource Management, P.O. Box 177, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-7643, Hydrology/Geology Section for assistance.

1. WATER MANAGEMENT AREA: Pearl Harbor

2. (a) WELL/DIVERSION OWNER:
   Firm Name Oahu Sugar Co., Ltd.
   Contact Person W. D. Balfour, Jr.
   Address P.O. Box "O", Waipahu
   Hawaii 96797 ph. (808) 677-3577

   (b) LANDOWNER:
   Firm Name Haseko Hawaii, Inc.
   Contact Person Yeto Nishijima
   Address 820 Millan St., Suite 610
   Honolulu, HI 96813 ph. 522-5025

3. SOURCE TYPE:
   □ Spring  □ Stream  □ Basal  □ Dike-confined  □ Perched  □ Caprock

4. SOURCE NAME AND NUMBER:
   (Do. 27A, 27B, 28, 29 State Well No. 1902-01
   (well or stream diversion name/number)

5. SOURCE LOCATION:
   Island Oahu
   (Attach a USGS map, scale 1"=2000", and a property tax map showing source location referenced to established property boundaries.)

6. LOCATION OF PROPOSED WATER USE (If different from #5): OSCo Fields 71,84,86,88,91
   (Indicate location of water use on same map showing source location.)

7. QUANTITY OF WATER REQUESTED: 4,160,000 gallons per day

8. QUALITY OF WATER REQUESTED:
   □ Fresh  □ Brackish  □ Salt  □ Potable  □ Non-Potable

9. PROPOSED USE:
   □ Municipal (including hotels, stores; etc.)  □ Military
   □ Domestic (individual, noncommercial water sy.)  □ Industrial
   □ Irrigation (specify)  □ Sugarcane  □ Other (specify)

10. DESCRIBE ANY POTENTIAL RESTRICTIONS ON USE (i.e., in-stream standards, seasonal variations):

11. PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION: 24 hours/day continuous operation
    (Indicate hours of operation)

12. PROPOSED METHOD OF TAKING THE WATER:
    □ Artesian Flow  □ Submersible Pump  □ Diverited Flow  □ Vertical Turbine Pump  □ Centfugal Pump

13. NUMBER OF RESIDENTIAL OR COMMERCIAL UNITS TO BE SERVED (specify):
    none

14. TOTAL ACRES PROPOSED FOR IRRIGATION AND TYPE OF CROP: 731.43 Sugarcane
    (acres) (crop)

15. REMARKS, EXPLANATIONS:
    Submittal of this water use permit application is pursuant to the directives of the Water Commission's Chairperson's letter.

Owner (print) Oahu Sugar Co., Ltd.  Landowner (print) Haseko Hawaii, Inc.
Signature  Date December 5, 1991

For Official Use Only:
Date Received  Hydrologic Unit  Diversion Works No.
Date Accepted  State Well No.
15. REMARKS, EXPLANATIONS: of August 26, 1991 (attached). This use is a long-standing existing use. Since establishment of the Pearl Harbor Groundwater Control Area and the Water Management Area, the BLNR and the Water Commission have recognized this existing use, but has not officially certified it. This is due in part to the attention paid to regulating the basal aquifers of the control area; and in part to the lack of an officially established sustainable yield for the caprock aquifer. It is OSCo's understanding that after due process, its caprock aquifer uses will be officially certified and water use permits officially issued.
ATTACHMENT FOR ITEM 5
-Tax Map for 1-9-1-12:5
 Showing Water Source Location

Geo Map showing water source location.
Thank you for your letter of August 1, 1991, expressing your concern over the water use permit applications being reviewed by the Commission on Water Resource Management for the Caprock Aquifer of the Pearl Harbor Water Management Area.

We agree with your assessment that "the utility of the Caprock Aquifer was created and is maintained primarily by Oahu Sugar Company through irrigation recharge of lands overlying the aquifer". We are presently looking at ways to encourage water users to increase recharge to the Caprock Aquifer.

In order to better assess the water use situation in the Caprock Aquifer, we would like Oahu Sugar Company to submit applications for water use permits for its existing ground-water sources in the Caprock Aquifer. After due process, as required by our administrative rules, we plan to issue water use permits for your existing Caprock Aquifer sources before acting on any of the new applications. We have enclosed the water use permit application forms for your use.

Please call Mr. Manabu Tagomori at 548-7533 if you have any questions.

Very truly yours,

WILLIAM W. PATY
Chairperson

Enc.
EWA MARINA GOLF COURSE
WATER CONSERVATION PLAN

Prepared by:
Belt Collins Hawaii
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

May 1995
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EWA MARINA GOLF COURSE
WATER CONSERVATION PLAN

1.0 INTRODUCTION

The Ewa Marina Golf Course will be constructed on approximately 270 acres of land along the mauka side of HASEKO (Ewa), Inc.'s 1,100-acre Ewa Marina Community project (Figure 1). The course is being developed independently of the marina from which the project derives its name. Construction of the course is slated to begin in 1996 and will continue for approximately two years.

This document was prepared pursuant to directives from the Commission on Water Resource Management to all users of Ewa caprock water (Appendix A). It describes water conservation measures that will be implemented during the design and operation of the proposed golf course. The discussion begins with a brief description of the environmental setting; emphasis is placed on aspects of the natural environment relevant to golf course irrigation needs and irrigation system design.

2.0 SITE DESCRIPTION

The proposed Ewa Marina Golf Course (the “site”) will be a 27-hole championship course located within the Ewa Marina community development on the Ewa plain of Oahu. It is surrounded by Barbers Point Naval Air Station and its golf course to the west and northwest, cane land (to be developed as housing and a golf course by Gentry) to the north, the Hawaii Prince Golf Course to the east (across Fort Weaver Road), and the proposed Ewa Marina and Ewa Beach residential area to the east and south. The site was cultivated for sugarcane until the spring of 1995; it is now fallow land overgrown with weeds.

3.0 NATURAL SETTING

3.1 Climate

Hawaii is at the northern extreme of the tropical climate zone, within a belt of cooling northeasterly trade winds. The climate is mild throughout the year, with average monthly air temperature ranging from 72.4°F to 79.4°. The maximum and minimum temperatures of record at Honolulu International Airport (only six miles east of the site) are 94°F and 43°F, respectively (Armstrong, 1973). Northeasterly trade winds are common over Oahu at all times of the year, but are more persistent in summer than in winter. At the airport, trade wind frequency is about 65 percent, with wind speeds of 4 to 24 mph (Armstrong, 1973). Moderate to strong southerly winds associated with kona frontal passages are dominant from November through March.
Annual rainfall in the Hawaiian Islands is highly variable and is dependent upon altitude and leeward or windward location. The site is in leeward Oahu at no more than 25 feet above mean sea level (+25 msl). Its annual rainfall over the past 40 years averaged 21 inches (CDM, 1993). Winter is typically wetter than summer. Average January rainfall in Ewa is 3.79 inches, and average June rainfall is 0.23 inches. With an average annual pan evaporation rate of approximately 80 inches per year (CDM, 1993), the rate of evapotranspiration in Ewa is nearly four times the average annual rainfall.

3.2 Geology and Soil

Bedrock at the site is highly permeable, pitted coralline (reef) rock mixed with alluvium; it is locally known as “caprock.” The caprock is underlain by basalt at least 500 feet below ground surface (Macdonald et al., 1983). Both rock types function as aquifers. The deep basalt aquifer is separated from the caprock aquifer by an impermeable layer of clay. The upper, caprock aquifer is brackish and is recharged principally by rainfall. Until recently, it was also recharged by irrigation return water from sugarcane cultivation. Salinity ranges from 800 to 1000 parts per million (ppm) chloride (Murdoch and Green, 1994). The water table has a head of approximately 1.5 feet and is about 22 feet below grade at the site. Groundwater flow in the caprock aquifer is south towards the ocean (TWNRE, 1991). This aquifer has been pumped heavily over the last century by sugarcane irrigation methods. The caprock aquifer will be used for golf course irrigation.

Soils at the site consist of 6 to 50 inches of reddish-brown silty clay loam. According to the Soil Conservation Service, 6 to 24 inches of sugarcane waste mixed with crushed coral dredge spoils were used as fill in various portions of the site (SCS, 1972). All site soil exhibits moderate permeability, slow runoff, and slight erosion hazard.

During site development, coral outcrop at the west end of the site will be filled with soils excavated from other portions of the site. Topsoil will be added to provide suitable turf rooting depth.

3.3 Topography and Drainage

The topography of the Ewa plain is relatively level, with an average gradient toward the ocean of less than one percent. Elevations at the site range between +10 and +23 msl. The combination of low relief, low rainfall, and permeable soil and rock results in minimal surface drainage. There is no existing storm drain at the site. Stormwater drains directly into the underlying coralline rock or runs across the site to drain into a sinkhole in the rock.
3.4 Vegetation

Only plants adapted to low rainfall conditions flourish on the Ewa plain. Until the spring of 1995, vegetation at the site was dominated by sugarcane cultivated by Oahu Sugar Company with heavy irrigation from the caprock and basalt aquifers. Surrounding vegetation would normally consist of koa haole, kiawe, and associated underbrush. The last sugarcane crop has been harvested, and the site is now fallow, with miscellaneous grasses and shrubs growing sporadically in the old cane fields.

4.0 SOURCES OF WATER SUPPLY

The Ewa Marina Golf Course will use potable water for domestic water and nonpotable water for irrigation.

4.1 Potable Water

An *Ewa Water Master Plan* (1987) approved by the Board of Water Supply (BWS) has allocated 3.2937 million gallons per day (mgd) of potable water from the BWS system for Ewa Marina (Tyrone, 1991). The golf course clubhouse and associated domestic water uses will utilize an estimated 40,000 to 50,000 gpd of that allocation, which will be supplied via the BWS Waianae District water system (Tyrone, 1991). Potable water will not be used for golf course irrigation.

4.2 Nonpotable Water

Consistent with State and City policies, the Ewa Marina Golf Course is committed to using nonpotable water for irrigation purposes. Potential sources of nonpotable water include the Ewa caprock aquifer, reclaimed water, and desalinized seawater. The caprock aquifer is the preferred nonpotable source; reclaimed water will be used if this becomes unfeasible. Desalination is too costly at the present time to be a viable alternative.

4.2.1 Caprock Aquifer Water

The Ewa Marina Golf Course is expected to use about 1.35 mgd of nonpotable groundwater from the caprock aquifer (Tyrone, 1991). This water will come from the irrigation well and pump station (Well No. 3-1902-01, also known as EP27). This skimming well was installed by Oahu Sugar Company in 1964 and until recently was used to irrigate sugarcane at the site. Over the entire Ewa Marina project, the change from sugarcane cultivation to golf course and landscape irrigation will reduce pumping from the caprock aquifer by approximately 5.0 mgd.
4.2.2 Reclaimed Water

Wastewater treatment plant effluent may be reused—or “reclaimed”—for irrigation, conserving existing groundwater resources. New DOH regulations regulate the use of reclaimed water (Appendix B). Reclaimed water, for the purpose of this report, is wastewater treatment plant effluent. The Honouliuli wastewater treatment plant is presently the only public source of reclaimed water in the Ewa Plain. If caprock water sources were not available in sufficient quantity (e.g., if salinity in the caprock aquifer were to rise above usable levels), reclaimed water would become the most economically viable source at the site.

DOH guidelines for the use of effluent are included in Chapter 11-62-25 of the Hawaii Revised Statutes. The main points are summarized here to indicate the type and magnitude of restrictions on effluent reuse.

Reclaimed water under the DOH regulations is classified as follows:

- R-1: Virtually pathogen-free effluent
- R-2: Disinfected secondary effluent
- R-3: Undisinfected secondary effluent

The Honouliuli Wastewater Treatment Plant will provide Class R-2 reclaimed water.

Regulatory requirements have been proposed relative to design, operation, and maintenance of facilities for reclaimed water. Water used to irrigate golf courses and landscaped areas may be Class R-1, R-2, or R-3. The following restrictions apply, however:

Golf courses associated with residences:

- R-1: Any type of irrigation system
- R-2: Subsurface irrigation only

Restricted access golf courses:

- R-1: Any type of irrigation system
- R-2: Subsurface irrigation only

Non-edible vegetation and freeway landscaping with limited public access:

- R-1 and R-2: Any type of irrigation system
- R-3: Subsurface irrigation only
4.3 Evaluation of Nonpotable Water Supply Alternatives

Various water sources were considered for irrigation of the Ewa Marina Golf Course. Use of potable water was ruled out. Brackish water from the caprock aquifer is the preferred source, because it is a proven resource for golf course irrigation. Turf species will be selected for tolerance of existing salinity of the caprock water (see Section 5.1).

However, there is a possibility of increased salinity in the aquifer over time, due to the loss of freshwater recharge from sugarcane irrigation. If salinity were to rise above acceptable levels, reclaimed wastewater would be a preferred source of irrigation water.

Therefore, it is important to minimize water use through conservation measures. Such measures are discussed in Section 5.

5.0 WATER CONSERVATION MEASURES

Population growth and resultant development, especially in the relatively dry Ewa plain, have acutely increased awareness of the high value of water and the need to conserve it. Although potable water use at the golf course represents only a tiny fraction of total water use, low-flow plumbing fixtures will be installed and guests will be invited to cooperate in conserving potable water.

Golf course irrigation water use can be minimized by three primary practices. The first is selection and maintenance of plant materials and plumbing fixtures with the lowest water requirements. The second is providing necessary water using the most efficient possible irrigation system and practices. The third is maximum possible use of nonpotable and reclaimed water. As discussed below, selection of turfgrass and other plant materials, golf course design, and operation and maintenance will be undertaken with all of these factors in mind.

5.1 Selection and Maintenance of Plant Materials

The amount of water needed to maintain plant health varies widely among different species of turfgrass and other plants typically used on golf courses. In order to minimize water use at the proposed Ewa Marina Golf Course, plants with relatively low water use will be selected. Salt-tolerant species will be preferred, to maximize use of the brackish caprock water and to minimize the need for fertilizers and biocides. The final choice of turfgrass species will not be made until construction plans are being prepared for the golf course. However, the following species with proven ability to grow well under the anticipated conditions are being considered:
Trees
- Sea Grape
- Silver Buttonwood
- Royal Poinciana
- Indian Coral
- Beach Heliotrope
- Milo
- Monkey Pod
- Paperbark

Shrubs
- Canna Lily
- Carissa (Natal Plum)
- Spiderlily
- Lantana
- Naupaka
- Hibiscus

Grasses
- Saint Augustine
- Centipede
- Seashore Paspallum
- Zoysin (Zoysin japonica)
- Hybrid Bermuda

Water use can also be reduced through a variety of horticultural practices. For example, many plants require more water during their early growth stages and less water once they are well established. This is due to a number of factors, including the additional ground shading provided by mature foliage, the effect fully grown plants have on near-ground wind speeds (and, therefore, on evaporation rates), and the lower photosynthetic rate that occurs once plantings have matured. The operators of the Ewa Marina Golf Course will carefully maintain plant materials at the golf course to ensure the longest feasible life, thereby minimizing the maturation period during which higher-than-average watering rates are needed.

Trees and other landscaping plantings that will be used on the Ewa Marina Golf Course and in the landscaping surrounding the entrance driveway, the clubhouse, and other golf course facilities, will be mulched with organic material to minimize water loss from the area immediately surrounding them.

5.2 Irrigation System Design and Operation

The Ewa Marina Golf Course irrigation system will be designed and operated to eliminate unnecessary water use, in accordance with Condition 2(b) of the Conservation Conditions, Ewa Caprock Water Use Permits (Appendix A). The overall approach, including physical design features and irrigation management policies and practices, is discussed below.

5.2.1 Irrigation System Design

The irrigation system will include many features that help avoid unnecessary water use. The most important of these are listed below:

- Sprinkler heads will be carefully spaced to ensure even application of irrigation water, thereby avoiding wasteful double-coverage of any areas.
• Sprinkler heads will be selected which perform well under the sometimes windy conditions that prevail at the site; this will maximize the volume of irrigation water which actually reaches the turf.

• Sprinkler heads which minimize clogging will be selected to ensure that the water needs of plants can be met without over-watering some areas.

• The irrigation control system will provide information on temperature, relative humidity, wind speed and, most importantly, soil moisture, to the irrigation manager. Tensiometers and/or other devices for measuring soil moisture will be located at numerous locations. This will provide the golf course manager with information needed to adjust irrigation water application rates so that they are closely aligned with each area’s needs.

• Meters will be located strategically throughout the system to assist in the identification of unusual water use patterns and leaks.

• Irrigation water storage ponds will be designed to limit evaporative losses. To the extent practicable, this will be accomplished by maintaining adequate water depth and minimizing the water surface area. Where appropriate, storage ponds will be sited in conjunction with vegetative screens to reduce the wind speed across the pond surfaces and to provide shade (further minimizing evaporation).

• The irrigation system will be designed to facilitate the use of reclaimed water if that should become necessary.

5.2.2 Irrigation Practices and Maintenance

Irrigation water will be applied to the golf course in a fashion which avoids waste. Factors such as temperature, wind, insolation, forecast precipitation, and the water-holding capacity of the soil will be considered in making the decision. Specific guidelines include the following:

• Irrigation water will be applied only to the extent necessary to maintain adequate soil moisture for healthy plant growth. Weather and soil moisture monitoring devices described above will provide the information needed to accomplish this objective.

• Except as needed to prevent plant damage, the course will be irrigated only during the late evening and early morning hours. This is the period when irrigation is most effective from an agronomic standpoint and when potential losses to the atmosphere are lowest.

• To the extent practicable, the turf will be irrigated only when wind speed is in the design range of the sprinkler system. This will prevent unnecessary drift losses.
Increased irrigation water usage can result from a number of factors, including normal wear, debris clogging sprinkler nozzles, accidental damage to sprinkler heads or piping that result in leaks, leaking storage ponds, and other factors. Unnecessary water use from these will be controlled by the following measures:

- The system will be inspected regularly while in operation to detect broken or malfunctioning sprinkler heads, reduced coverage resulting from vegetation growth, poorly programmed control systems, and other deficiencies. Correction of these deficiencies will be made a maintenance priority.

- Water meters located throughout the irrigation system will be read regularly to track water use rates over time; unusual patterns indicative of leaks or other problems will be investigated, and corrective action will be taken as necessary.

- The irrigation system will be checked regularly to ensure that it has not been tampered with and that settings designed to conserve water have not been altered by the staff or others.

The operators of the Ewa Marina Golf Course will emphasize the need for careful and wise water use practices through a systematic program of staff education and training. Staff will be made aware of Ewa Marina’s conservation goals and the measures taken to achieve them. Staff will be encouraged to identify improvements in irrigation facilities and/or practices that could further reduce water use. Examples of water conservation techniques that will be covered by the training include:

- The use of sweeping in lieu of hosing for cleaning;

- The use of controllable nozzles on all hoses to ensure that they are shut off when not being used for the intended purpose; and

- The use of high-pressure/low volume systems for cleaning and other uses, where this is appropriate.

The staff will be thoroughly trained in water conservation techniques. Their full participation and support in implementing water conservation measures will be encouraged though incentives that reward wise water use practices. Supervisors and management will be instructed to solicit and act upon water-saving recommendations made by the field staff.
6.0 REFERENCES


Figure 1
SITE LOCATION
Ewa Marina Golf Course Water Conservation Plan
Prepared By: Belt Collins Hawaii
May 1995

LEGEND
- Ewa Marina Project Area
- Proposed Ewa Marina Golf Course

SCALE IN MILES
0 0.25 0.5

SCALE IN FEET
0 1000 2000 4000

NORTH
APPENDIX A
Conservation Conditions, Ewa Caprock Water Use Permits
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

a. Reduce the demand for non-potable water by:
   - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
   - Mulching planting areas with organic materials, etc., to minimize evaporation;
   - Efficiently maintaining the plants;
   - Improving land management practices to conserve water.

b. Improve efficiency in use and reduce losses and waste of non-potable water by:
   - Using efficiently designed landscaping and irrigation systems;
   - Monitoring irrigation requirements and controlling usage accordingly;
   - Managing irrigation scheduling to minimize water demand;
   - Eliminating opportunities for water wastage;
   - Maintaining and improving irrigation systems as necessary.

c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
APPENDIX B
Summary of State Department of Health's Guidelines for Use of Reclaimed Water
GUIDELINES FOR THE USE OF RECLAIMED WATER

The information summarized in this Appendix is based on the Hawaii Department of Health (DOH) Guidelines For the Treatment and Use of Reclaimed Water dated November 22, 1993. The intent of the regulations is to protect public health, prevent degradation of aquifers and surface waters, and to facilitate and delineate use of reclaimed water. DOH allowable uses for reclaimed water are summarized in Table C-1. The items summarized herein are those required for submittal to DOH for approval of effluent reuse. The primary items are listed below and further detailed in the remainder of this Appendix.

A. Basis of Design Report for Reclamation Treatment Facility
B. Engineering Design Report for Reclamation Treatment Facility
C. Construction Plans for Reclamation Treatment Facility
D. Basis of Design Report for Water Reclamation Reuse
E. Engineering Design Report for Water Reclamation Reuse
F. Construction Plans for Water Reclamation Reuse

A. BASIS OF DESIGN REPORT FOR RECLAMATION TREATMENT FACILITY

This report requires:

1. Population and flow projections;
2. Wastewater characterization, including wastewater, effluent, and non­domestic waste;
3. Optimization for coagulants and polymers;
4. Water reclamation site selection, including existing and proposed collection systems, existing and proposed zoning and land use, wind rose, land availability, location with respect to floor plan, soil characteristics, geology, and topography;
5. Development and evaluation of treatment alternatives, which address treatment levels compatible with reuse proposals and unit processes with respect to hydraulic and wastewater loadings;
6. An institution plan, including development of reclamation standards, metering program, rates and charges, inspection program to assure
conformance to plans, inspection protocol and standards, regulations and policies regarding cross connections, sewers, and industrial pretreatment, and identifying the owner and entity with authority over work.

B. ENGINEERING DESIGN REPORT FOR RECLAMATION TREATMENT FACILITY

This report is to include:

1. Summary of "Basis of Design Report";

2. Selection of treatment processes, including schematics of the treatment train, descriptions and calculations for significant treatment processes, mass balances, and staging schedules of future changes;

3. Descriptions of how each of the "Treatment Design Parameters" contained in Chapter IV of the Guidelines are incorporated into the facility design, including secondary treatment, coagulation, filtration, disinfection, alarms, power supply, flexibility, reliability, storage impoundments, and emergency backup systems.

4. Development of an operations plan which incorporates intended design parameters, operation parameters, and the training of personnel to reliably produce the optimal water quality for the designated product level;

5. A treatment monitoring program which includes frequency and location of sampling.

C. CONSTRUCTION PLANS FOR RECLAMATION TREATMENT FACILITY

Required submittals include:

1. General layout plan: location and size of facility, site improvements, schematic flow diagrams, piping, hydraulic profiles, elevations of high and low water levels, requirements of Section 12.3.1 (Chapter 10 - "Plans of Wastewater Pump Station-General Layout"), bench mark elevation, and basis of bearings with description;

2. Detailed construction drawings: requirements of Section 12.3.2 (Chapter 10 - "Plans of Wastewater Pump Station-Details Plan"), location, dimensions, and elevations of facility units, and type, size, pertinent features, and rated capacity of all pumps, blowers, motors, and other mechanical devices.
D. BASIS OF DESIGN REPORT FOR WATER RECLAMATION REUSE

This report is to include:

1. Descriptions of the project area, properties of the raw and reclaimed wastewater, supplemental water supply, and transmission and distribution systems. Project area boundaries, present and anticipated land use within one mile of site boundaries, and project area drainage and soil survey are required. Data must be collected on the maximum daily permeability rate, design application rate, water balance, macro nutrient balance, total dissolved solids balance, and other constituents like heavy metals. Further, a vegetation cover monitoring and maintenance plan, and consumptive rates of water, nitrogen, phosphorus, and potassium are needed.

2. A Monitoring Plan which includes establishment of a baseline groundwater and coastal water quality, and a monitoring schedule (the frequency and type of monitoring depend on project location, depth to groundwater, etc.);

3. A Project Evaluation Plan which assesses the overall long-term effects of the proposed project on environmental resources in the area. The evaluation is to include changes in water table elevations due to natural fluctuations and application of reclaimed water, prediction of the rate and direction of movement of the applied water, and changes in the area associated with the project.

E. ENGINEERING DESIGN REPORT FOR WATER RECLAMATION REUSE

This report requires:

1. Irrigation Plan, which delineates the methods and controls to be used in the irrigation system such that no runoff or ponding will occur. The irrigation plan shall minimally describe the following components:

   a. The exact boundaries of the proposed use area, and delineated irrigation areas within these boundaries;

   b. Amount and type of reclaimed water available for irrigation and the associated maximum and minimum average gallons per day;

   c. Location and characteristics of the transmission line from the reclamation treatment facility to the proposed use area or storage reservoir;
d. Design data for storage reservoirs or impoundments (if needed);

e. All pertinent data for materials use in the system including types and size of pipes, meters, pumps, valves, and sprinklers; sprinkler pattern, height, and radius; flow, application rates, and periods; operating pressure, uniformity coefficient of irrigation distribution, and data on surface irrigation systems where used;

f. Identification of measures to prevent runoff to areas not under owner's control;

g. Location plan for area drinking water fountains.

2. Management Reuse Plan, which establishes and delineates responsibilities of operation and maintenance. This includes procedures and restrictions for distributors and users, operation criteria for irrigation, quality control, and provisions for a contingency plan that shall identify actions and precautions to be taken to protect public health in the event of a non-approved use;

3. Public Education Plan, to inform persons likely to come in contact with reclamation water, including signage, fencing, advisories, etc;

4. Employee Training Plan;

5. Vector Control Plan, which establishes conditions necessary to limit mosquito production in impoundments, conveyance facilities, and wetlands;


F. CONSTRUCTION PLANS FOR WATER RECLAMATION REUSE

The plans are to detail the piping system, including irrigation components. They are generally to conform to the requirements of Section 12 "Construction Plans" of Chapter 10, Design Standards of the Division of Wastewater Management, Vol. 1, except for section 12.2 which will be substituted by Section 9 - Construction Plans, Water System Standards. Additional details include a bench mark, bearings, and color coding of pipes.

G. OTHER SUBMITTALS

1. An Operations and Maintenance Manual is required to ensure that all equipment is kept in a reliable operating condition. A written statement is needed from the engineer responsible for the Operation and Maintenance
Manual that all applicable effluent requirements are met by operating under manual guidelines.

2. Contingency Plan, to be designed to assure that inadequately treated reclaimed water is not delivered to the user. The Contingency Plan shall include:

   a. A list of conditions which would require an immediate diversion to take place;

   b. A description of the diversion procedures;

   c. Designation of the diversion system components. If storage basins are used, they must be sized to prevent any overflows or discharges of effluent when the irrigation system is not in operation or when effluent quantities exceed the irrigation requirements, only basins with impervious impoundments are allowed. A minimum emergency storage of 20 days should be provided unless demonstrated otherwise. The system storage capacity should proved adequate retention under adverse weather conditions, based on a 50-year storm recurrence interval.

   d. A plan for the disposal of any inadequately treated effluent. Reclaimed water produced at the treatment facility that fails to meet the criteria established in the guidelines is not to be discharged into the system storage or to the distribution system. Substandard reclaimed water shall be either stored for subsequent-additional treatment or shall be discharged to another reuse system requiring lower levels of treatment or a DOH approved effluent disposal facility.

   e. A plan for notifying the reclaimed water user, DOH Wastewater Branch, and other appropriate agencies.

3. Compliance Report and Submittals:

   The items include:

   a. Conforming to the Sampling and Analysis Plan with submittal to DOH on a regular basis.
b. An annual report to DOH describing the quality and quantity of water reclaimed, method of irrigation and areas irrigated, rates of application, total application and climatic conditions, corrective actions taken, and monitoring reports.

c. Monthly operating records to be filed with DOH.

d. Inspection, supervision, employee training and record keeping requirements for operation of the system.

There are also infrastructure requirements for irrigation systems. Cross connection control must be provided for the reclaimed water system where the supply is supplemented with potable water supply or from irrigation wells. Below grade piping separations and concrete jacketing requirements apply to reclaimed water and potable water lines. All reclaimed water piping, valves, and outlets are to be permanently labeled to differentiate them from potable or other water.
Table C-1: Summary of Suitable Uses for Reclaimed Water

<table>
<thead>
<tr>
<th>SUITABLE USES OF RECLAIMED WATER</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRRIGATION: (S)pray, (D)rip &amp; Surface, S(U)bsurface, (A)ll = S D &amp; U, Spray with (B)uffer, (N)ot allowed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golf course landscapes</td>
<td>A</td>
<td>UB</td>
<td>N</td>
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<tr>
<td>Freeway and cemetery landscapes</td>
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<td>N</td>
</tr>
<tr>
<td>Parks, elementary schoolyards, athletic fields and landscapes around some residential property</td>
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<td>U</td>
<td>N</td>
</tr>
<tr>
<td>Roadside and median landscapes</td>
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<td>UB</td>
<td>N</td>
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<tr>
<td>Non-edible vegetation in areas with limited public exposure</td>
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<td>DUB</td>
<td>U</td>
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<td>Sod farms</td>
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<td>Ornamental plants for commercial use</td>
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<td>Food crops above ground &amp; not contacted by irrigation</td>
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<td>Pastures for milking and other animals</td>
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<td>N</td>
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<td>Fodder, fiber, and seed crops not eaten by humans</td>
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</tr>
<tr>
<td>Orchards and vineyards bearing food crops</td>
<td>A</td>
<td>DU</td>
<td>DU</td>
</tr>
<tr>
<td>Orchards and vineyards not bearing food crops during irrigation</td>
<td>A</td>
<td>DUB</td>
<td>DU</td>
</tr>
<tr>
<td>Timber and trees not bearing food crops</td>
<td>A</td>
<td>DUB</td>
<td>DU</td>
</tr>
<tr>
<td>Food crops undergoing commercial pathogen destroying process before consumption</td>
<td>A</td>
<td>DUB</td>
<td>DU</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SUPPLY TO IMPOUNDMENTS: (A)llowed (N)ot allowed</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted recreational impoundments</td>
<td>A</td>
</tr>
<tr>
<td>Basins at fish hatcheries</td>
<td>A</td>
</tr>
<tr>
<td>Landscape impoundments without decorative fountain</td>
<td>A</td>
</tr>
<tr>
<td>Landscape impoundments with decorative fountain</td>
<td>A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUPPLEMENT TO OTHER USES: (A)llowed (N)ot allowed</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flushing toilets and urnals</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Fire fighting</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Commercial and public laundries</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Cooling saws while cutting pavement</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Decorative fountains</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Washing yards, lots and sidewalks</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Flushing sanitary sewers</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>High pressure water blasting to clean surfaces</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Industrial process without exposure of workers</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Industrial process with exposure of workers</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Cooling or air conditioning system without tower, evaporative condenser, spraying or other features that emit vapor or droplets</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Industrial boiler feed</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Water jetting for consolidation of backfill material around potable water piping during water shortages</td>
<td>A</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Water jetting for consolidation of backfill material around piping for reclaimed water, sewage, storm drainage, and gas and electrical conduits</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Washing aggregate and making concrete</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Dampening roads and other surfaces for dust control</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Dampening brushes and street surfaces in street sweeping</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
</tbody>
</table>
WELL DESCRIPTION:
Well Name: EP 27 A&B, 28 & 29
Well I.D. No.: 3-1902-01
Well Location: Lat. 21° 19' 03" N
Long. 158° 02' 33" W
Well Owner: Oahu Sugar
Contact Person: Hugh Morita
Type: Irrigation
Flow 5.1 mgd
Remarks: Dug well, open pit near old pump site

WELL CONSTRUCTION:
Casing Stick Up (A) none ft.
Ground Elevation (B) 5 ft.
Diameter of Boring (C) varies in.
Total Depth of Boring (D) 8 ft.
Grouted Interval (E) none ft.
Filter-Pack Interval (F) none ft.
Msr'd Dpth to Wtr Tbl/ Approx Elev/ Elev Per DLNR Indx (G) 0/ 0/ 2.0 ft.

<table>
<thead>
<tr>
<th>DIALECTER (IN)</th>
<th>LENGTH (FT)</th>
<th>TOP/BOT.ELEV.(FT)</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Casing (H)</td>
<td>none</td>
<td>none</td>
<td>none</td>
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<tr>
<td>Perforated Casing (I)</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Open Hole (J)</td>
<td>varies</td>
<td>8</td>
<td>5/-3</td>
</tr>
</tbody>
</table>

JOURNAL OF SAMPLE COLLECTIONS:
Date | Time | Person | Weather | Remarks
--- | --- | --- | --- | ---
December 2, 1992 | 10:20 a.m. | GT, CH, NU | Fair | Sampled from manifold
February 11, 1993 | 10:38 a.m. | JR, CH | Fair | Sampled from manifold
February 23, 1993 | 1:15 p.m. | JT, JR, CH, NU | Fair | Sampled from manifold
June 15, 1993 | 10:30 a.m. | NU, KW, JR | Fair | Sampled from manifold
<table>
<thead>
<tr>
<th>Date of Sample Collection</th>
<th>12/02/92</th>
<th>02/11/93</th>
<th>02/23/93</th>
<th>06/15/93</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANALYTICAL PARAMETERS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Dissolved Solids (mg/l)</td>
<td>2017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Suspended Solids (mg/l)</td>
<td>&lt;0.5</td>
<td>2</td>
<td>1</td>
<td></td>
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<tr>
<td>Chlorides (mg/l)</td>
<td>1150</td>
<td>1062</td>
<td>1254</td>
<td>3410</td>
</tr>
<tr>
<td>Specific Conductance (mmho/cm)</td>
<td>3350</td>
<td>3380</td>
<td>741</td>
<td>741</td>
</tr>
<tr>
<td>Hardness (mg equiv. Ca CO3/l)</td>
<td>755</td>
<td>726</td>
<td>281</td>
<td>281</td>
</tr>
<tr>
<td>Alkalinity (as Ca CO3) (mg/l)</td>
<td>280</td>
<td>281</td>
<td>281</td>
<td>281</td>
</tr>
<tr>
<td>pH (std. unit)</td>
<td>7.3</td>
<td>7.07</td>
<td>7.27</td>
<td>7.10</td>
</tr>
<tr>
<td>Temperature (°C/°F)</td>
<td>24.6/76.2</td>
<td>/76.2</td>
<td>/77.8</td>
<td>25.5/</td>
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<tr>
<td>Turbidity (NTU)</td>
<td>0.65</td>
<td>0.65</td>
<td>0.40</td>
<td>0.40</td>
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<tr>
<td>Dissolved Oxygen (mg/l)</td>
<td>4.9</td>
<td>5.6</td>
<td>4.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Total Residual Chlorine (mg/l)</td>
<td>0.1</td>
<td>0.07</td>
<td>0.18</td>
<td>0.10</td>
</tr>
<tr>
<td>Ammonia (N) (mg/l)</td>
<td>&lt;0.05</td>
<td>0.03</td>
<td>&lt;0.03</td>
<td>&lt;0.03</td>
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<tr>
<td>Total Kjeldahl Nitrogen (mg/l)</td>
<td>&lt;0.1</td>
<td>1.65</td>
<td>0.05</td>
<td>0.05</td>
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<tr>
<td>Total Phosphorus (mg/l)</td>
<td>0.043</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
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<tr>
<td>Orthophosphate (mg/l)</td>
<td>0.026</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
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<tr>
<td>Total Organic Carbon (mg/l)</td>
<td>1.9</td>
<td>&lt;0.5</td>
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<td></td>
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<tr>
<td>Biochemical Oxygen Demand-5 Day (mg/l)</td>
<td>&lt;2.0</td>
<td>&lt;1.0</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Chemical Oxygen Demand (mg/l)</td>
<td>10.3</td>
<td>&lt;10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Coliform (COL/100ml)</td>
<td>TNTC (a)</td>
<td>TNTC (a)</td>
<td>TNTC (a)</td>
<td>TNTC (a)</td>
</tr>
<tr>
<td>Vinyl Chloride (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>1,1-Dichloroethylene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>1,1,1-Trichloroethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>Carbon Tetrachloride (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>Benzene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>1,2-Dichloroethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>Trichloroethylene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>p-Dichlorobenzene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>1,2,3-Trichloropropane (ppb)</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
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<tr>
<td>trans-1,2-Dichloroethene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>cis-1,2-Dichloroethene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>1,2-Dichloropropane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>Toluene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Ethylbenzene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Monochlorobenzene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>o-Dichlorobenzene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>Styrene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>m-Xylene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>p-Xylene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>o-Xylene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Tetrachloroethene (ppb)</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
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<tr>
<td>Chloromethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Bromomethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Chloroethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
</tbody>
</table>

(a) - Fecal Positive
(b) - Fecal Negative
(c) - Sample Holding Time Exceeded
(d) - Lost in Extraction

TNTC - Too Numerous To Count
NF - None Found

DRAFT
<table>
<thead>
<tr>
<th>Date of Sample Collection</th>
<th>12/02/92</th>
<th>02/11/93</th>
<th>02/23/93</th>
<th>06/15/93</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANALYTICAL PARAMETERS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methylene Chloride (ppb)</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
</tr>
<tr>
<td>1,1-Dichloroethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>2,2-Dichloropropane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>Chloroform (ppb)</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
</tr>
<tr>
<td>1,1-Dichloropropene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Bromodichloromethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>Dibromomethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>trans-1,3-Dichloropropene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>cis-1,3-Dichloropropene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>1,1,2-Trichloroethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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</tr>
<tr>
<td>Dibromochloromethane (ppb)</td>
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<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>1,1,1,2-Tetrachloroethane (ppb)</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>Bromoform (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>1,1,2,2-Tetrachloroethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Bromobenzene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>2-Chlorotoluene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>4-Chlorotoluene (ppb)</td>
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<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>1,3-Dichlorobenzene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Bromochloromethane (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>1,2,4-Trichlorobenzene (ppb)</td>
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<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Hexachlorobutadiene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Naphthalene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>1,1,3-Trichlorobenzene (ppb)</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
<td>Arsenic (ppm)</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
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<tr>
<td>Selenium (ppm)</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
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<tr>
<td>Mercury (ppm)</td>
<td>&lt;0.0005</td>
<td>&lt;0.0005</td>
<td>&lt;0.0005</td>
<td>&lt;0.0005</td>
</tr>
<tr>
<td>Cadmium (ppm)</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Lead (ppm)</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Chromium (ppm)</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
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<tr>
<td>Barium (ppm)</td>
<td>0.049</td>
<td>0.047</td>
<td>0.077</td>
<td>0.077</td>
</tr>
<tr>
<td>Silver (ppm)</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Nitrate (as N) (ppm)</td>
<td>7.0</td>
<td>6.0</td>
<td>7.5/6.6*</td>
<td>7.5/6.6*</td>
</tr>
<tr>
<td>Nitrite (as N) (ppm)</td>
<td>&lt;0.05</td>
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<tr>
<td>Fluoride (ppm)</td>
<td>0.31</td>
<td>0.27</td>
<td>0.30</td>
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<tr>
<td>Sodium (ppm)</td>
<td>497</td>
<td>430</td>
<td>534</td>
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<tr>
<td>Copper (ppm)</td>
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<td>&lt;0.05</td>
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<tr>
<td>Nickel (ppm)</td>
<td>&lt;0.01</td>
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<tr>
<td>Antimony (ppm)</td>
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<tr>
<td>Beryllium (ppm)</td>
<td>&lt;0.001</td>
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<tr>
<td>Thallium (ppm)</td>
<td>&lt;0.02</td>
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<tr>
<td>Iron (ppm)</td>
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<tr>
<td>Ethylene Dibromide (ppb)</td>
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<tr>
<td>1,2-Dibromo-3-Chloropropane (ppb)</td>
<td>&lt;0.02</td>
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</table>

(a) - Fecal Positive  
(b) - Fecal Negative  
(c) - Sample Holding Time Exceeded  
(d) - Lost in Extraction  

TNTC - Too Numerous To Count  
NF - None Found  
* - Field Test (Hach NI-12)
<table>
<thead>
<tr>
<th>Date of Sample Collection</th>
<th>12/02/92</th>
<th>02/11/93</th>
<th>02/23/93</th>
<th>06/15/93</th>
</tr>
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<td><strong>ANALYTICAL PARAMETERS</strong></td>
<td></td>
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<tr>
<td>Aldicarb (ppb)</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
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<tr>
<td>Aldicarb Sulfone (ppb)</td>
<td>&lt;1.0</td>
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<tr>
<td>Aldicarb Sulfoxide (ppb)</td>
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<td>Oxfamyl (ppb)</td>
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<td>Propoxur (ppb)</td>
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<td>Carbaryl (ppb)</td>
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<td>Methiocarb (ppb)</td>
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<tr>
<td>Dalapon (ppb)</td>
<td>&lt;13.0 (c)</td>
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<td>2,4D (ppb)</td>
<td>&lt;1.79 (c)</td>
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<td>Pentachlorophenol (ppb)</td>
<td>&lt;0.0720 (c)</td>
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<td>2,4,5-TP (ppb)</td>
<td>&lt;0.130 (c)</td>
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<td>Dinoseb (ppb)</td>
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<td>Picloram (ppb)</td>
<td>&lt;1.62 (c)</td>
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<td>Lindane (ppb)</td>
<td>&lt;0.140 (c)</td>
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<td>Alachlor (ppb)</td>
<td>&lt;1.00 (c)</td>
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<td>Heptachlor (ppb)</td>
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<td>Endrin (ppb)</td>
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<td>Chlorodane (ppb)</td>
<td>&lt;2.00 (c)</td>
<td>&lt;1.0</td>
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<td>Toxaphene (ppb)</td>
<td>&lt;2.00 (c)</td>
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<td>Atrazine (ppb)</td>
<td>&lt;1.10 *(c)</td>
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<tr>
<td>Simazine (ppb)</td>
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<td>Bromacil (ppb)</td>
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<td>Hexazinone (ppb)</td>
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<td>Mevinphos (ppb)</td>
<td>&lt;2.40 (c)</td>
<td>&lt;5.0</td>
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</tr>
</tbody>
</table>

(a) - Fecal Positive  
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TNTC - Too Numerous To Count  
NF - None Found  
* - Found 0.914 ppb Atrazine
PROJECT TITLE  EWA CAPROCK GROUNDWATER QUALITY SURVEY

WELL DESCRIPTION:
Well Name: Ewa Beach EP-24
Well I.D. No.: 3-1901-01
Well Location: Lat. 21° 19' 47" N
    Long. 158° 01' 17" W
Well Owner: Gahu Sugar  EIIBU HAD INC.
Contact Person: Hugh Morita
Type: Irrigation
Flow 0.1 mgd
Remarks: Dug well, well head not readily accessible, sampled at downstream port

WELL CONSTRUCTION:
Casing Stick Up (A)  none  ft.
Ground Elevation (B)  24  ft.
Diameter of Boring (C)  ___________ in.
Total Depth of Boring (D)  29  ft.
Grouted Interval (E)  none  ft.
Filter-Pack Interval (F)  none  ft.
Msrd Dpth to Wtr Tbl/ Approx Elev/ Elev Per DLNR Indx (G) _____/_____/ 1.8  ft.

<table>
<thead>
<tr>
<th></th>
<th>DIAMETER (IN)</th>
<th>LENGTH (FT)</th>
<th>TOP/BOT.ELEV.(FT)</th>
<th>MATERIAL</th>
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<td>Solid Casing (H)</td>
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<td>Perforated Casing (I)</td>
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<tr>
<td>Open Hole (J)</td>
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<td>24/5</td>
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<td></td>
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</table>

JOURNAL OF SAMPLE COLLECTIONS:
Time          10:25 a.m.         8:41 a.m.        12:40 p.m.         11:10 a.m.
Person        JT, KW, MB, HM  JR, CH          JT, JR, CH, NU     NU, KW, JR
Weather       Fair             Fair            Fair              Fair
Remarks        __________________|_________________|___________________|__________|
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>ANALYTICAL PARAMETERS</strong></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Total Dissolved Solids</td>
<td>(mg/l)</td>
<td>2364</td>
<td>2415</td>
<td>2772</td>
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<td>Total Suspended Solids</td>
<td>(mg/l)</td>
<td>&lt;0.5</td>
<td>2</td>
<td>ND</td>
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<tr>
<td>Chlorides</td>
<td>(mg/l)</td>
<td>1820</td>
<td>1552</td>
<td>1974</td>
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<tr>
<td>Specific Conductance</td>
<td>(mhos/cm)</td>
<td>1138</td>
<td>1142</td>
<td>1105</td>
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<td>Hardness</td>
<td>(mg equiv. Ca CO3/l)</td>
<td>307</td>
<td>298</td>
<td>319</td>
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<tr>
<td>Alkalinity (as Ca CO3)</td>
<td>(mg/l)</td>
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<td>pH (std. unit)</td>
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<td>/77</td>
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<td>26.25/</td>
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<tr>
<td>Temperature</td>
<td>(°C/O F)</td>
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<tr>
<td>Dissolved Oxygen</td>
<td>(mg/l)</td>
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<td>5.6</td>
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<tr>
<td>Total Residual Chlorine</td>
<td>(mg/l)</td>
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<td>0.07</td>
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<td>Ammonia (N)</td>
<td>(mg/l)</td>
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<td>Total Kjeldahl Nitrogen</td>
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<td>Total Phosphorus</td>
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<td>Orthophosphate</td>
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<td>0.02</td>
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<td>Total Organic Carbon</td>
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<td>&lt;1.0</td>
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<td>Biochemical Oxygen Demand-5 Day</td>
<td>(mg/l)</td>
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<td>&lt;1.0</td>
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<td>Chemical Oxygen Demand</td>
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<td>9.4</td>
<td>NF</td>
<td>NF</td>
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<tr>
<td>Total Coliform</td>
<td>(COL/100ml)</td>
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<td>Vinyl Chloride</td>
<td>(ppb)</td>
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<tr>
<td>1,1-Dichloroethylene</td>
<td>(ppb)</td>
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<td>&lt;0.3</td>
<td>&lt;0.3</td>
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<tr>
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<td>Benzene</td>
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<td>1,2-Dichloroethane</td>
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<td>Trichloroethylene</td>
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<td>1,2,3-Trichloropropane</td>
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<td>1,2-Dichloropropane</td>
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<td>p-Xylene</td>
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<td>Tetrachloroethene</td>
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<tr>
<td>Chloroethane</td>
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</table>

(a) - Fecal Positive  
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TNTC - Too Numerous To Count  
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DRAFT
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<th>02/23/93</th>
<th>06/15/93</th>
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<td>METHYLENE CHLORIDE</td>
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<td>&lt;0.2</td>
<td>&lt;0.2</td>
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<td>1,1-DICHLOROETHANE</td>
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<td>&lt;0.3</td>
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<td>DIBROMOMETHANE</td>
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<td>1,1,1,2-TRITRACHLOROETHANE</td>
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<td>&lt;0.3</td>
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<td>BROMOFORM</td>
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<td>&lt;0.3</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
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(a) - Fecal Positive
(b) - Fecal Negative
(c) - Sample Holding Time Exceeded
(d) - Lost in Extraction

TNTC - Too Numerous To Count
NF - None Found
* - Field Test (Hach NI-12)
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(a) - Fecal Positive  
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(d) - Lost in Extraction  

TNTC - Too Numerous To Count  
NF - None Found
### CHLORIDE TITRATION RECORD

**EpCo.** for **Dy,** Well **40** (No.)

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**Data furnished by City & County, Board of Water Supply.**

**NITRATES**

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**Remarks**

- Ewa Plantation Co., Pump No.
- Ewa Caprock

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