



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

COMMISSION ON WATER RESOURCE MANAGEMENT

October 10, 2012 Meeting
Honolulu, Oahu

STAFF SUBMITTAL

MARY LOU GORA
APPLICATIONS FOR A GROUND WATER USE PERMIT
WELL CONSTRUCTION & PUMP INSTALLATION FOR A NEW WELL
Gora 2011 Well (Well No. 3406-17), TMK (1) 6-6-016:001, WUP No. 952

Future (Agricultural) Use of 0.029 mgd
Waialua Ground Water Management Area, Oahu

APPLICANT:

Ms. Mary Lou Gora
P.O. Box 1211
Haleiwa, HI 96712

LANDOWNER:

Same

SUMMARY OF REQUEST:

The applicant, Ms. Mary Lou Gora, requests that the Commission on Water Resource Management (Commission) approve a ground water use permit for an allocation of **0.029** million gallons per day (mgd) of **potable basal** ground water from a **new well** to supply **28,800 gallons per day for agriculture**.

LOCATION MAP: See Exhibit 1

BACKGROUND:

September 11, 1981 Board of Land and Natural Resources approved the GWUP 45 under the former Waialua Ground Water Control Area.

January 23, 2008 Permittee Dan Gora conducted field trip by the contractor of the 20-year Review of water use permits. The subsequent report identified follow-up matters suggested by staff.

- July 9, 2010 Mary Lou Gora, trustee for her deceased husband Dan Gora submitted a request to transfer GWUP 45 to her. The permit was issued as GWUP 898 on July 22, 2010. Transfer of the permit was contingent on special conditions to address matters raised in the 20-year Review.
- August 12, 2011 A letter from Ms. Mary Lou Gora referencing the transfer letter noted her inability to perform the special conditions because of a family dispute removing her ownership of the well site parcel. Staff subsequently had telephone conversations with other members of the family requesting information about the well and the water use permit. It was unclear who would apply for the permits.
- December 21, 2011 Mary Lou Gora submitted an incomplete GWUPA for a new well to be constructed on the adjacent parcel.
- February 7, 2011 Applicant's contract filed a completed well application for anticipated artesian well (Well No. 3407-17).
- February 15, 2012 Commission approved reassignment of GWUP 898 to the current well owner and the end-use property, to be submitted within 90 days. If not submitted within 90 days, the permit would be revoked. Without a proper address for the new owners, notice of Commission action was relayed by phone to Guy Gora, the one clear responsive contact. The application was emailed to his account. Follow-up calls were made.
- February 16, 2012 After further discussions with staff, Mary Lou Gora submitted a complete GWUPA Mary Lou Gora for the proposed new artesian well 3406-17. Additional information regarding the source, use, notification, objections, and field investigation(s) is provided in Attachment A.
- The 90-day processing period was waived, pending adequate water use allocation revocations from other users in the Waialua Ground Water Management Area to keep the total allocations within sustainable yield.
- June 6, 2012 Guy Gora submitted a transfer request for GWUP 898 on behalf of the existing well site parcel owners (collectively trustees for an Edith C. Gora Trust). Some clarification was requested on parcel ownership, and the GWUP transfer assigned the number 935. Mr. Gora apologized that the form had been circulated to the several trustees of the property and was unexpectedly delayed.
- October 10, 2012 If existing ground water use permits are modified and allocations reduced sufficiently lower to bring the permitted allocation below the 25 mgd SY limit for Waialua Aquifer System, then the Commission may approve the Gora GWUP application.

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

The Sustainable Yield for the Waialua Aquifer System is 25 mgd (*See Hawaii Water Plan*). Individual existing water use permits in this aquifer system area are shown in Exhibit 2. A summary of the current ground water conditions in the aquifer is provided in Table 1:

Table 1. Waialua Aquifer System Area

<u>ITEM</u>	Waialua Aquifer System Area (mgd)
Sustainable Yield	25
Less: Other Existing Water Use Permits (shown in Exhibit 2)	16.694
Reservation to DHHL	0
Subtotal (Current Available Allocation)	8.306
Less: Other Completed Applications (shown in Exhibit 3)	0.270
Less: This Application	0.029
Subtotal (Potential Available Allocation/Allocation Deficit)	8.007

Therefore, there is adequate water available to accommodate this application request.

(2) Reasonable-beneficial

Haw. Rev. Sec. 174C-3 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 request potable ground water under artesian pressure to irrigate the applicant's new parcel adjacent to that of Well No. 3406-08 to the new Well No. 3406-17, including 0.5 acres of fruit trees, aquaculture ponds, and lo'i kalo. Projected irrigation requirements are estimated at 28,800 gallons per day (gpd). The Declaration of Policy section, Haw, Rev. Stat. §174C-2(c) states that the Water Code shall be liberally interpreted to obtain maximum beneficial use of the waters of the State for various purposes including irrigation and aquaculture uses.

II. Quantity Justification

The applicant requests **0.029** mgd for irrigating fruit trees, truck crops, lo'i kalo, and maintaining aquaculture ponds. The Irrigation Water Requirement Estimate Decision Support System (IWREDSS) is the University of Hawaii College of Tropical Agriculture data model integrating rainfall, soil type, etc. for specific parcel locations. The model runs for this parcel predicts that papayas will require 1,392 gad and that the irrigation system should therefore deliver 1,740 gpd. Kalo would require 4,266 gad. The system should deliver 8,533 gad. The applicant estimates less, due to a high water table. The applicant believes that the mango, avocado, and coconut will not require irrigation (see Exhibit 4).

III. Efficiency of Use

The applicant states that its operations are as water efficient as possible by keeping fields well-maintained, free from overgrowth, and by limiting use during dry periods

IV. Analysis of Practical Alternatives

The applicant has identified **no** alternatives to the proposed use of brackish caprock water. An analysis of each of the alternatives is as follows:

1. Municipal sources: Not available
2. Wastewater reuse: Not available
3. Ditch system: Not available
4. Desalting: Not available
5. Surface water: Not available

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

Haw. Rev. Stat. §174C-51.5(3)(b) requires the county boards of water supply, in consultation with the 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 standards and rules shall be adopted in accordance with Haw. Rev. Stat. Chapter 91 and shall protect existing water quality and the health and safety of the public. Staff will follow up with the county boards of water supply as to the status of their dual-line standards and rules adoption. The Commission may invoke this provision under appropriate future circumstances.

(3) Interference with other existing legal uses

There are 6 other small wells in use within 1 mile of this source, under artesian pressure for irrigation and domestic purposes. There are two twin pumps for the Honolulu Board of Water Supply. Kamehameha Schools has two twin wells. Together they use about 4-5 mgd. The relatively small quantities being pumped compared to the relatively large ground water volume available (especially given the artesian conditions) mean that no interference is expected between these wells.

The Honolulu Board of Water Supply commented that because of artesian pressure, the drilling and operational pump use in this well calls for special attention to minimizing waste during drilling and in completing the wellhead. A special condition addresses this concern.

(4) Public interest

Public interest is defined under Haw. Rev. Stat. §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 proposed well will tap artesian flows for mixed aquaculture and agricultural use and for educational purposes.

This application meets the public interest.

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

The proposed uses are in the State **Urban** District. The county zoning is **Ag-1**. The character of the area is a rural combination of former plantation lands now used as residential, continuing small wetland farms with aquaculture, and commercial. The proposed use is consistent with these land use designations.

Normal agency review includes:

- 1) 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 Office of the Mayor, Department of Planning and Permitting, and the Honolulu Board of Water Supply;

No objections were made through this review. These proposed uses are consistent with the state and county general plans and land use designations. ("BWS provides water on a first-come-first-serve basis at the building permit phase, which must follow State and County General Plans and land use designations.")

This application **meets** the state & county general plans and land use designations.

(6) County land use plans and policies

Again normal County review includes Office of the Mayor, Department of Planning and Permitting and the Board of Water Supply. No comments or objections have been made. This application **meets** the county land use plans and policies.

(7) Interference with Hawaiian home lands rights

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

This application does **not** interfere with Hawaiian home lands rights.

Haw. Rev. Stat. Chapter 343 – Environmental Assessment (EA) Compliance

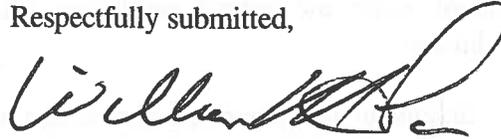
In accordance with Haw. Rev. Stat. §343-5(a), the applicant's proposed action does not trigger the need for an EA.

RECOMMENDATION:

- A. Staff recommends that the Commission APPROVE a new ground water use permit (GWUP No. 952) to Mary Lou Gora for the reasonable and beneficial use of 0.029 million gallons per day of potable water for Agricultural from the Gora 2011 Well (Well No. 3406-17), 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.
- B. Staff recommends the Commission APPROVE the well construction and pump installation permits for the Gora 2011 Well (Well No. 3406-17), subject to the standard conditions in Attachments C and D, and to the following special condition:
1. Extra drilling precautions must be taken to avoid loss of artesian pressure and waste of water as the confining rock is penetrated, and the wellhead must be secured against leakage to meet the specifications in section 2.4(c) and 2.6(c) of the Hawaii Well Construction & Pump Installation Standard regarding the prevention of leakage and waste between aquifers.

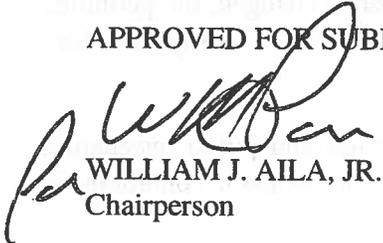
2. The well discharge must be controlled to the proposed amounts of use, which are much less than anticipated normal artesian flows may be. The applicant and driller must allow Commission staff access to observe well construction work.

Respectfully submitted,



WILLIAM M. TAM
Deputy Director

APPROVED FOR SUBMITTAL:



WILLIAM J. AILA, JR.
Chairperson

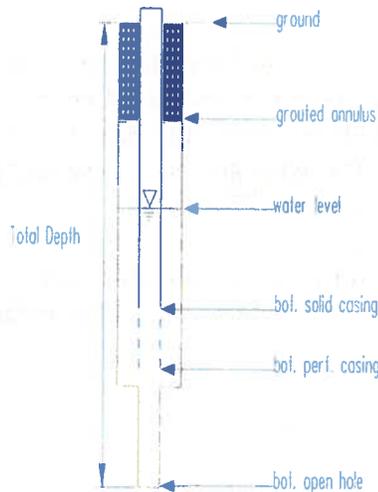
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|----------------|---|
| Attachment(s): | A (Water Use Permit Detailed Information) |
| | B (Water Use Permit Standard Conditions) |
| | C (Well Construction Permit Standard Conditions) |
| | D (Pump Installation Permit Standard Conditions) |
| Exhibit(s): | 1 (Location Map) |
| | 2 (Existing Water Use Permits and 12-Month Moving Average Withdrawal) |
| | 3 (Honolulu Board of Water Supply Letter of April 30, 2012) |
| | 4 (IWREDSS Summary) |

WATER USE PERMIT DETAILED INFORMATION

Source Information

AQUIFER: **Waialua System, Waialua Sector, Oahu**
 Sustainable Yield: 25 mgd
 Existing Water Use Permits: - mgd
 Available Allocation: - mgd
 Total other pending applications: 0.270 mgd
 This application: 0.029 mgd

WELL: **Gora 2011 Well (Well No. 3406-17)**
 Location: 66-351 Paalaa Road, Haleiwa, Oahu, TMK: (1) 6-6-016:001
 Year Drilled:
 Casing Diameter: 8 in.
Elevations (msl= 0 ft.)
 Water Level: 10.3 ft.
 Ground: 9 ft.
 Bottom of Solid Casing: 60 ft.
 Bottom of Perforated: 100 ft.
 Bottom of Open Hole: na ft.
 Total Depth: 100 ft.
 Grouted Annulus Depth: 58 ft.
 Pump Capacity 40 gpm



Use Information

Quantity Requested:	0.029 gallons per day.
Future Type of Water Use:	Agricultural
Place of Water Use:	TMK: (1) 6-6-016:001
Reported Water Usage:	gpd
Nearby Similar Water Usage:	gpd
Waialua Aquifer System	
Current 12-Month Moving Average Withdrawal (See Exhibit 2):	mgd

Nearby Surrounding Wells and Other Registered Ground Water Use

See ANALYSIS (3)

Public Notice

In accordance with HAR §13-171-17, a public notice was published in the Honolulu Advertiser on April 4, 2012 and April 4, 2012 and a copy of the notice was sent to the Office of the Mayor. Copies of the completed application were sent to the Honolulu 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 April 25, 2012.

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 April 25, 2012.

To the best of staff's knowledge there are no objectors who have property interest within the Waialua 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 May 16, 2012 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;

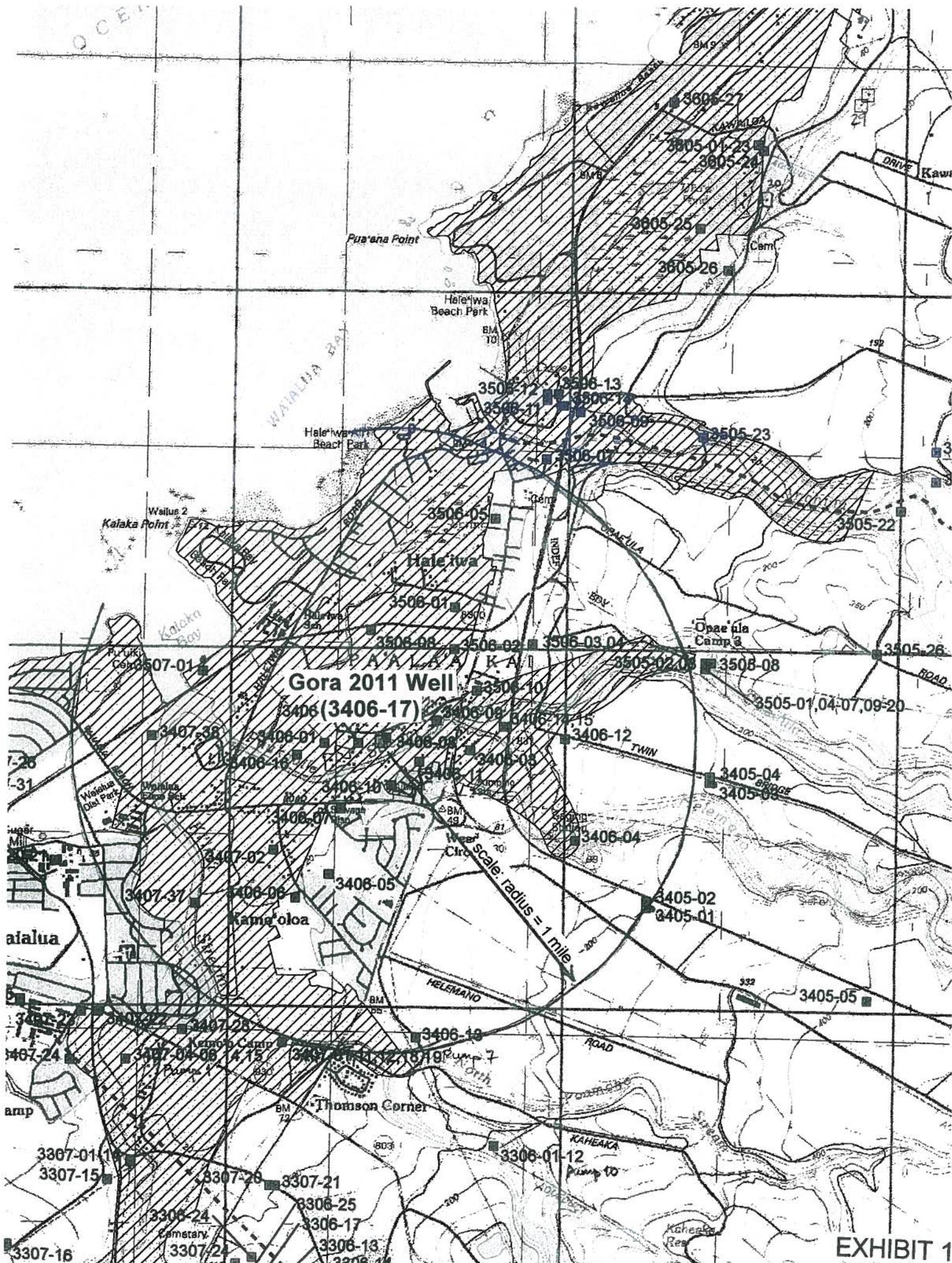
17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.
18. Special conditions in the attached cover transmittal letter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

STANDARD WELL CONSTRUCTION PERMIT 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 or 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.

STANDARD PUMP INSTALLATION PERMIT 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 (X) 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.



Gora 2011 Well

scale: radius = 1 mile



Report Parameters

Island: Oahu
 Applicant: All
 Well # Prefix: All
 Date: All
 Aquifer: 30402 Waialua
 TMK: All
 Aquifer Type: All

WUP = Water Use Permit, 12-MAV = 12 month moving average, Diff = WUP-12-MAV, mgd = million gallons per day

Island of Oahu

Aquifer System Ground Water Management Area: 30402 Waialua
Sustainable Yield (mgd): 25

WUP No	Approved	Permittee	Well No	Well Name	WUP (mgd)
35	06/02/1993	Waialua Sugar Co.	3-3307-001	Waialua P2 Batt	4.370
			3-3307-002	Waialua P2 Batt	
			3-3307-003	Waialua P2 Batt	
			3-3307-004	Waialua P2 Batt	
			3-3307-005	Waialua P2 Batt	
			3-3307-006	Waialua P2 Batt	
			3-3307-008	Waialua P2 Batt	
			3-3307-009	Waialua P2 Batt	
			3-3307-010	Waialua P2 Batt	
			36	06/02/1993	
3-3307-011	Waialua P2A Batt				
3-3307-012	Waialua P2A Batt				
3-3307-013	Waialua P2A Batt				
3-3307-014	Waialua P2A Batt				
39	06/02/1993	Waialua Sugar Co.	3-3404-001	Waialua Pump 17	8.630
40	09/11/1981	Board of Water Supply, BWS	3-3405-001	Waialua	1.730
41	09/11/1981	Board of Water Supply, BWS	3-3405-002	Waialua	1.000
			3-3405-003	Haleiwa 1	
46	06/02/1993	Waialua Sugar Co.	3-3405-004	Haleiwa 2	2.330
			3-3407-004	Pump 1	
			3-3407-005	Pump 1	
			3-3407-006	Pump 1	
			3-3407-014	Pump 1	
48	06/02/1993	Waialua Sugar Co.	3-3407-015	Pump 1	0.180
			3-3407-018	Pump 7 D	
136	06/02/1993	Waialua Sugar Co.	3-3407-019	Pump 7 E	2.930
			3-3407-011	Pump 7 B	
175	10/13/1993	Poamoho Venture, L.P.	3-3407-012	Pump 7 C	0.600
			3-3205-002	Poamoho A	
263	10/13/1993	Native Hawaiian Advisory Council 2	3-3407-002	Waialua-Lopez 2	0.144
353	11/16/1994	A.J. LOPEZ SONS, INC.	3-3406-016	Haleiwa-Lopez 1	0.072
643	07/16/2003	Paradise Shrimp Farm	3-3407-038	Paradise Shrimp	0.576
732	06/02/1993	MICHAEL JEWETT & MEGAN WARD	3-3406-002	Waialua Pump 9	0.160
894	06/02/1993	Kamehameha Schools	3-3505-001	Opaepula P3 Battery	1.552
			3-3505-002	Pump 3 Well B	
			3-3505-003	Pump 3 Well C	
			3-3505-004	Opaepula P3 Battery	



Island of Oahu

Aquifer System Ground Water Management Area: 30402 Waialua
Sustainable Yield (mgd): 25

WUP No	Approved	Permittee	Well No	Well Name	WUP (mgd)
			3-3505-005	Opaeula P3 Battery	
			3-3505-006	Opaeula P3 Battery	
			3-3505-007	Opaeula P3 Battery	
			3-3505-008	Pump 3 Well H	
			3-3505-009	Opaeula P3 Battery	
			3-3505-010	Opaeula P3 Battery	
			3-3505-011	Opaeula P3 Battery	
			3-3505-012	Opaeula P3 Battery	
			3-3505-013	Opaeula P3 Battery	
			3-3505-014	Opaeula P3 Battery	
			3-3505-015	Opaeula P3 Battery	
			3-3505-016	Opaeula P3 Battery	
			3-3505-017	Opaeula P3 Battery	
			3-3505-018	Opaeula P3 Battery	
			3-3505-019	Opaeula P3 Battery	
			3-3505-020	Opaeula P3 Battery	
895	06/02/1993	B P Bishop Estate Trust	3-3506-003	Pump 8A	1.660
			3-3506-004	Pump 8B	
Total:					30.384
Available:					-5.384

Summary for Waialua (55 detail records)

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



April 30, 2012

PETER B. CARLISLE, MAYOR

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ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. HIRAYAMA, P.E.
Deputy Manager and Chief Engineer *eh*

Mr. William J. Aila, Jr.
Chairperson
Department of Land and Natural Resources
Commission on Water Resource Management
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Chairperson Aila:

Subject: Gora 2011 Well (Well No. 3406-17)

We have no objections to the aquaculture usage proposed for this well; however, we have comments on the submittal.

1. The Public Notice application for the Water Use Permit states that the quantity requested is 0.029 million gallons per day (mgd). This quantity is inconsistent with the well construction/pump installation permit application, which lists a proposed withdrawal of 0.144 mgd (100 gallons per minute) and also lists a proposed pump capacity of 40 gallons per minute (0.058 mgd).
2. The proposed well section indicates an option for a production zone borehole diameter of 8 inches, indicating that continuous drilling to the total depth of the well will occur through the confining caprock material. We caution that artesian conditions will likely be experienced and that drilling precautions be taken to address this condition.
3. Artesian conditions may result in discharges in excess of what is being requested, or which would otherwise be constrained by an installed pump, placing greater importance on the metering of well discharge for compliance purpose.

Thank you for allowing us to comment on this application. Should you have questions, please contact Glenn Oyama at 748-5934.

Very truly yours,


ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

2012 MAY -2 AM 8:53

CONFIDENTIAL

 * SUMMARY *

TMK = 66016001 1.85 ac
 LOCATION = Waialua

TMK : 66016001
 SOILS: Ewa(0.198), waialua(0.802)

CROP TYPE = PAPAYA (PERENNIAL)

ANNUAL IRRIGATION REQUIREMENT (INCHES)

ROOT ZONE DEPTH IRRIGATED (INCHES) = 25.0
 TOTAL CROP ROOT ZONE DEPTH (INCHES) = 37.0

WATER BUDGET COMPONENTS											
NIR	GIR	GAL_A	G_RAIN	N_RAIN	ER	ER21	RO	INT	ETo	ET	DR
16.7	20.9	567.5	24.4	17.9	9.2	12.6	6.1	0.4	58.0	26.0	8.7

ACRES		UNIT	GIR STATISTICS		XMAX	XMIN	50%	80%	90%	95%
		inch/acre	MEAN	MED.						
1.86		Thou. gpd/acre	20.900	21.475	24.593	16.325	21.112	23.395	24.439	25.236
		Total thou. gpd	1.555	1.598	1.830	1.215	1.571	1.740	1.818	1.877
			1.450	1.489	1.706	1.132	1.464	1.623	1.695	1.750

ACRES		UNIT	NIR STATISTICS		XMAX	XMIN	50%	80%	90%	95%
		inch/acre	MEAN	MED.						
1.86		Thou. gpd/acre	16.720	17.180	19.674	13.060	16.890	18.716	19.551	20.189
		Total thou. gpd	1.244	1.278	1.464	0.972	1.257	1.392	1.455	1.502
			1.160	1.192	1.364	0.906	1.171	1.298	1.356	1.400

Note:- Irrigated area for the selected TRICKLE, SPRAY irrigation system is 0.5 of the total area

 * SUMMARY *

TMK : 1.8644920348874
 SOILS: Ewa(0.198), waialua(0.802)

ANNUAL IRRIGATION REQUIREMENT (INCHES)

WATER BUDGET COMPONENTS											
NIR	GIR	GAL_A	G_RAIN	N_RAIN	ER	ER21	RO	INT	ETo	ET	DR
51.1	102.1	2773.2	24.4	18.1	14.3	10.9	6.1	0.3	58.0	64.5	3.7

ACRES		UNIT	GIR STATISTICS		XMAX	XMIN	50%	80%	90%	95%
		inch/acre	MEAN	MED.						
2.00		Thou. gpd/acre	102.129	105.761	121.506	80.755	102.957	114.695	120.081	124.200
		Total thou. gpd	7.598	7.868	9.039	6.008	7.660	8.533	8.933	9.240
			15.196	15.736	18.079	12.016	15.319	17.065	17.867	18.480

ACRES		UNIT	NIR STATISTICS		XMAX	XMIN	50%	80%	90%	95%
		inch/acre	MEAN	MED.						
2.00		Thou. gpd/acre	51.064	52.880	60.753	40.377	51.479	57.347	60.041	62.100
		Total thou. gpd	3.799	3.934	4.520	3.004	3.830	4.266	4.467	4.620
			7.598	7.868	9.039	6.008	7.660	8.533	8.933	9.240

Note:- Irrigated area for the selected FLOOD (TARO) irrigation system is 1.0 of the total area

MONTHLY IRRIGATION REQUIREMENT (INCHES)