To: ROY HARDY - CWRM
From: Tom Nance
Subject: SOUTH KOREAN WATER WELLS GROUP

(1) Copy of the signed Memorandum of Understanding (pp. 2-5)
(2) (Unsigned) copy of Policies and Procedures (pp. 6-9)

680 Ala Moana Boulevard, Suite 406 - Honolulu, Hawaii 96813-3411 - Phone: (808) 538-1141 - Fax: (808) 538-7757

Ryan - Found this. Should put copies in relevant Big Island well folders.
MEMORANDUM OF UNDERSTANDING BETWEEN MAUNA KEA PROPERTIES, INC., MAUNA LANI RESORT, INC., NANSAY HAWAII, INC. AND WAIKOLOA LAND COMPANY ON COOPERATIVE REGIONAL WATER DEVELOPMENT

Mission Statement

To work jointly and cooperatively in developing and implementing a regional water plan which best serves the collective water needs of the parties and others within the region in a manner acceptable to relevant governmental authorities.

Objectives

The parties to this Memorandum of Understanding (collectively referred to as "South Kohala Water Study Group" or "Group") acknowledge and agree that it is in their long-term best interests to achieve the Mission set forth above in the following manner:

- Reach agreement on a regional plan for the development of sources and distribution systems for potable, non-potable water and effluent reuse;
- Form and establish, as equity participants, a private, regional water company or companies for the development, production, distribution and sale of potable, non-potable and effluent reuse resources serving the parties and others within the region;
- Reach bilateral and multilateral agreements achieving the staged implementation of the regional water plan;
- Publicly support and consider the commitment to the conditional, partial funding of the County of Hawaii Department of Water Supply's (DWS) development of its planned North Kohala Pipeline;
- Develop a Water Commitment Policy, which is incorporated herein by reference, containing guidelines and requirements for each Group Member securing a sufficient supply of water for actual use in accordance with a realistic timetable;
Coordinate the activities of the Water Study Group with all relevant State of Hawaii authorities, including but not limited to its Water Commission, in a manner which promotes and preserves the Group's ability to deal with regional water issues on a collective basis;

Communicate, where appropriate, with other interested parties within the region;

Enter into subsequent joint agreements intended to implement the objectives adopted herein.

Governance

The activities of the Group shall be governed and coordinated through an Executive Committee comprised of a designated representative of each signatory to this Memorandum of Understanding.

The Group Executive Committee shall:

- Approve all policies, agreements and expenditures made on behalf of the Group; provided, that if the representative of any Group member specifically disapproves of any such expenditure, that Group member shall be excused from its pro rata share of such expenditure;

- Approve the inclusion of additional members to and approve, except member in question, for the exclusion of existing members from the Water Study Group;

- Approve public statements and testimony regarding Water Study Group activities;

- Develop and approve an annual operating budget, project budgets and the individual party's obligations to fund the operations and the development of these planned projects;

- Be kept informed of all agreements entered into between Water Study Group members affecting the Group's Mission and Objectives;

- Coordinate all contact regarding the activities of the Water Study Group with governmental agencies;
Direct and approve the activities of all consultants retained by the Water Study Group relating to its stated Mission and Objectives.

All decisions of the Group shall be by the majority of the members of the Executive Committee except for "key decisions" which require unanimous approval. Key decisions include approval of the annual operating budget and individual members obligation to fund operations or make contributions to the development of planned projects, expenditures which are outside of the approved budget in excess of $5,000 in any single case or $25,000 in the aggregate and the addition of any new member to the Executive Committee.

Dispute Resolution

It is acknowledged that from time to time, disputes and disagreements may arise between the parties to this Memorandum of Understanding regarding regional water issues and that it is in their long-term collective best interests that such disputes be resolved without resort to governmental or judicial involvement.

The parties agree that they shall use their individual and collective best efforts to resolve any and all outstanding issues covered by this Memorandum. The parties further agree that in the event negotiations fail to result in acceptable agreement or resolution, they may voluntarily submit outstanding issue(s) to binding or nonbinding arbitration pursuant to terms agreed to by the parties.

North Kohala Pipeline

The parties agree to support the concept of a North Kohala pipeline transporting potable water to South Kohala being pursued by the Department of Water Supply, County of Hawaii.

In the event that the parties are reasonably satisfied that the North Kohala pipeline will be built, but no later than the start of construction, individual signatories to this agreement shall commit, on a fair and equitable basis, to the partial funding of said pipeline under acceptable terms and conditions to be negotiated.
Termination/Withdrawal

A majority of the members of the Group may terminate the Group and joint obligations contained in this Memorandum of Understanding. Individual Group members may withdraw from the South Kohala Water Study Group upon written notice to other members; provided, that members shall remain liable for their or its pro-rata share of costs of operations per the approved budget or amendments thereto, incurred during their membership or prior to withdrawal, as the case may be.

This Memorandum of Understanding is entered into this 9th day of February, 1998.

MAUNA KEA PROPERTIES, INC.

By Its  

NANSAY HAWAII, INC.

By Its  

MAUNA LANI RESORT, INC.

By Its  

WAIKOLOA LAND COMPANY

By Its  

-4-
DRAFT

The South Kohala Water Users Group ("Group") recognizes the need to develop a coherent set of policies and procedures for the development of groundwater to ensure maximum beneficial use of this limited resource, avoid conflicts among users, and facilitate the timely development of water tied to actual use. The parties to this document agree to abide by the policies and procedures it contains and encourage the State Commission on Water Resource Management ("Commission") to evaluate all drilling and pump installation permits received from other water users in the basin by the same criteria.

POLICIES

1. The group recognizes that all parties need assurance of the availability of water for their developments. The group further recognizes that such assurances can occur only if it is agreed to by all parties.

2. All drilling, well modification, and pump installation permits will be formulated to conform to the intent of the then current version of the Group's approved South Kohala Water [Master] Resource Plan.

3. All drilling, well modification, and pump installation permits will be submitted to the Group for its approval prior to submittal to the Commission. The Group's approval shall be based on the applicant's conformance with these policies, and the procedures listed below. The Group's approval shall not be unreasonably withheld if such conformance is demonstrated.

4. To minimize excessive use of groundwater, all effluent from sewage treatment plants shall be reused for irrigation unless it can be conclusively demonstrated to be physically and/or economically impractical for the developer of the irrigation supply or the ultimate user of the water.
4. All new landscaping, including golf course turfgrass, will be designed and implemented to minimize irrigation use. Efforts toward this end shall include choosing appropriate plant materials, use of proper soil types and thickness, and avoiding excessive turfgrass areas. Any new 18-hole golf course shall not use more than 0.75 MGD on year-round average nor more than 1.00 MGD over any seven-day period.

5. All new hotel, residential, commercial, and industrial development shall be designed to minimize water use and shall include appropriate water saving devices.

6. **Drilling permits should be supported if consistent with the Water Resource Plan as they provide much needed information about this region's aquifer.**

7. **[Drilling and] Pump installation permits shall not be sought more than two years in advance of actual need (to avoid creating false shortages of supply and inappropriate positioning for the resource, potentially denying others their fair and equitable use).**

8. Members of the Group agree to devise water use standards for consumption of potable and irrigation water use in order to implement these policies.

9. It is recognized that agreements between two or more parties may be necessary to facilitate respective water development. [Such agreements shall be consistent with these policies and procedures.]

**PROCEDURES**

1. All applications for drilling, well modification, and pump installation permits, including extensions of these permits, will be submitted for review and approval by the Group to ensure conformance with the intent of the Group's policies and [master] water resource plan prior to submittal to the Commission.

2. To initiate the Group's review, application will be submitted with the following supporting information:

   a. Quantity [and timing] of potable and/or non-potable supply requirements, including the basis for these projections (unit counts, acreage, etc.).
b. Measures taken to avoid excessive potable and/or non-potable water use.
c. Exact location of the water uses, including land use plans, TMKs, etc.
d. Approved State land use designation; County General Plan designation; County zoning; use permit for district use; and the prospective land use approvals, including subdivision, needed to achieve the desired land use.
e. The project's site specific water master plan for potable and not potable water shall be submitted.
f. Exact location, dimensions, and pump capacity of the well (or wells) to be developed to meet these supply requirements.

[g. A development schedule indicating the date of actual water use.]

3. The Group's review and response to the application shall be completed within 45 days. The response shall judge the application's conformance with these policies, and with the South Kohala Resource Plan, and with the South Kohala Water Master Plan, (the appropriateness of the timing of the application, and the)

[Unless there are compelling reasons otherwise, the timing of an application shall be deemed inappropriate unless all land use approvals through and including County zoning have been received and the actual use of water, based on a firm schedule, is to begin within two years.]

Listed below are specific criteria of the Group's review of applications.

a. If conformance with these policies and procedures is demonstrated (and the timing of the application is appropriate,) the Group's approval shall not be unreasonably withheld.
b. If the application fails to meet the standards for acceptability set out herein, no submittal of the application to the Commission shall be made until revisions satisfactory to the Group are made.
c. The Group's approval for a well installation permit shall be given only after tentative subdivision approval for the project to be served has been given.
d. If a proven water source is a condition of County zoning or use permit approvals, the Group's approval of a well construction permit shall be given only if evidence of the actual water use within two years is provided.
These Water Commitment Policies and Procedures are entered into this day of __________, 1993.

Mauna Kea Properties, Inc.
By: ____________________________
   Its

Mauna Lani Resort, Inc.
By: ____________________________
   Its

Nansay Hawaii, Inc.
By: ____________________________
   Its

Waikoloa Land Company
By: ____________________________
   Its
Our comments regarding Bridge Puako LLC's Rezoning Application are attached. The original is being sent via postal service today. Please contact my office at 885-6677 should you have any questions.

I look forward to seeing you on February 4th.
January 27, 2000

Mr. Richard B. Baker, Jr., Chairman
County of Hawaii Planning Commission
c/o Planning Department
25 Aupuni Street
Hilo, HI 96720-4252

Dear Chairman Baker:

Bridge Paako LLC
Paako Residential Golf Community
Waikoloa, South Kohala, Island of Hawaii, TMK: (3) 6-8-01: 25, 36-40

Mauna Lani Resort, along with its planning and engineering consultants, has reviewed Bridge Paako's applications for Project District Zoning, Amendments to Conditions of Ord. No. 96-153, Amendments to Conditions of Use Permit No. 90, and Designation of Timeshare Use. The contents of the applications, as well as the incompleteness of updated supporting studies and impact analysis, raise several concerns which we feel should be addressed more thoroughly before the applicant's requests are considered.

Specifically, there is no detailed study of the proposed timeshare use and potential impacts. The applicant is asking for a substantial reduction in the existing conditions of approval, while the impacts from the project with the addition of timeshare use most likely will be greater. Also, the currently configured project and the uses proposed will have a substantial impact on Mauna Lani Resort. We respectfully request that the Planning Commission defer action on the applications until the following concerns have been adequately addressed.

Timeshare Use

The applicant is asking for timeshare use within the Project District, without disclosing a cap on the number of timeshare units. Thus, up to 1,795 units would be permitted for timeshare use. Timeshare units have historically operated at high occupancies of 80% to 90%, which normally result in considerable added impact on public infrastructure and facilities such as roads, parks and beaches, as well as higher water and sewer use. Given that the original approval for this project was for conventional residential development, we request that a study on the characteristics of timeshare use and its
impacts be completed before the Planning Commission considers its inclusion in the Project District.

Location of Project Access Points

Two project access points (State Department of Transportation approved locations) are shown on the Puako Residential Golf Community plan, the major one assumed to be across from the Mauna Lani Resort Entrance. (It is assumed that this is the primary access since it is the first access to the project from the airport direction and the one adjacent to the 30-acre commercial area.) According to the applicant's plan, the Mauna Lani entrance would become a cross intersection whereas it is now a t-intersection.

Mauna Lani strongly objects to the location of the major access to the Bridge Puako project directly across from Mauna Lani Resort's existing entrance. We are concerned about the impacts of a cross intersection which is likely to have more conflicting movements than the existing t-intersection. Queen Kaahumanu Highway within the coastal resort area where Mauna Lani Resort is situated currently has only t-intersections. A cross intersection may require improvements which are more urban in nature and incompatible with a designated major resort area. Mauna Lani is also concerned about the impacts of the proximity to the proposed intersection of high traffic commercial uses such as hardware stores, gas stations and supermarkets.

Although the traffic study has been updated for the current applications, they are not complete and we request that a full traffic study be prepared. Given the potential for much increased traffic due to time share use and the extensive commercial uses proposed, we request that the possibility of moving the approved highway access point away from the existing Mauna Lani Resort entrance be explored. To lessen conflicts, entry to the proposed project from the airport direction might move logically be from a t-intersection at another location on Queen Kaahumanu Highway at a safe distance from the existing Mauna Lani Resort t-intersection.

Water Supply

Attached is a memo from TNWRE, our water resource engineering consultant, which addresses some of our concerns with the proposed project and its impact on regional resource and supply, as well as on Mauna Lani Resort. Please refer to it for a full review of the application in regard to water supply.

Regarding potable water requirements for the Bridge Puako project, the estimates contained in the application seem to be low, as they are based on a low water use standard which is inappropriate for the South Kohala coast region, as well as time share use. A review of actual well development suggests that it is unlikely that the two Ouli wells could adequately provide the proposed project's potable supply requirements.
Regarding brackish groundwater supply for irrigation, there is already substantial well development both upgradient and downgradient of Bridge Puako’s six proposed brackish water wells, as shown in the application. TNWRE estimates that the supply that can be safely developed in the Puako-to-Makaiwa section is on the order of 9 MGD. Given that current pumpage is approximately 8.6 MGD, only a small amount is left to develop in the mauka-makai corridor before water quality is likely to be adversely impacted. This has direct consequences for Mauna Lani Resort whose wells may become useless due to high salinity levels resulting from over-pumping.

Mauna Lani Resort has monitored its wells since the opening of its golf courses, continues to conduct weekly testing for chlorides of all of its irrigation wells, and intends to continue this monitoring. We believe that similar weekly monitoring should be performed for the golf courses developed by Bridge Puako, and that the monitoring record compiled by Mauna Lani Resort and for the first Bridge Puako golf course be evaluated. We also request that the Commission consider adding a condition that Bridge Puako be required to perform this monitoring, and that the development of each golf course subsequent to the first be contingent on the evaluation of the results and the absence of adverse impact on the Mauna Lani wells.

Impact on Public Facilities

The impact on parks, beaches and the shoreline area resulting from development of a project of the magnitude proposed by Bridge Puako has the potential to be detrimental and is not fully addressed in the current applications. Existing resorts in the region have built and maintain facilities open to the public which are of a scale that may not be sufficient to accommodate the applicant’s proposed project. We request that the potential impacts be addressed.

Amendments to Conditions of Approvals

The applicant proposes deletion of a 1,200-foot buffer along Queen Kaahumanu Highway (replacement with a 200-foot buffer shown on revised plan). We believe this greatly reduced buffer and the golf course development proposed adjacent to the highway may not provide a safe separation from highway users.

The applicant states that the project concept is essentially unchanged from that previously approved, with the exception of the addition of timeshare use which is potentially a more intense use than residential use. Nevertheless, the applicant is asking for relief from several conditions of approval without providing the rationale for such relief. The applicant requests reassigning to government entities the responsibility for constructing and maintaining substantial infrastructure and community facility improvements. Such relief from providing the improvements previously conditioned and the community package associated with the original project approvals will place a much greater burden on both the County and the State. We respectfully request that the...
Planning Commission seriously consider the effect of deleting the conditions before doing so, as such action will set a precedent for future projects.

In conclusion, Mauna Lani requests that the Planning Commission defer action on the Bridge Puako applications so that the concerns raised above may be thoroughly addressed. We also request that the Planning Commission consider retaining existing conditions which tend to mitigate impacts from the project and which represent a fair share of improvement development, commensurate with what other developers have constructed and maintain. Finally, we request that the Planning Commission consider imposing performance controls through appropriate conditions.

Thank you for considering our comments and we would be pleased to answer any questions which they may elicit.

Sincerely,

Mauna Lani Service, Inc.

[Signature]

Sachiko Murano
Vice President

Attachment
MEMORANDUM

TO: Sachiko Murakami

FROM: Tom Nance

SUBJECT: Water Supply Concerns Raised by the Proposed Puako Residential Golf Community

I reviewed the November 1999 zoning application report by Sidney M. Fuke and the supporting groundwater assessment by Dan Lum dated March 1992. Both documents describe a development that would include more than 2800 residential units and six golf courses on the 3000-acre Puako property formerly owned by Nansay. Providing sufficient water supply for this development raises issues for the region and for Mauna Lani Resort in particular. These are briefly discussed in the paragraphs following.

Potable Supply

Two wells in the Nansay Golf parcel are to provide potable supply for the project, most likely by connecting these wells to the Department of Water Supply (DWS) system in South Kohala. The Fuke report states that both wells were completed and that their pump test results demonstrate the adequacy of their supply for the project. The problems with this and other representations regarding the project's potable supply are as follows:

Required Supply. Both the Fuke and Lum reports state that an ultimate average supply 1.5 MGD will be needed. This is based on potable water use of 400 GPD per residential unit, DWS' standard. However, experience along the South Kohala coast has universally shown that DWS' standard is too low for this dry region, particularly for the class of residential development intended. Using more realistic water use rates, the project's average supply requirement is likely to be more than two MGD (a projection of 2.5 MGD is shown in the tally below). This would require a maximum day well pumping capacity in excess of 3 MGD plus standby capacity.
Memo To: Sachiko Murano  
January 24, 2000 – 000052  
Page two

Conservative Estimate of Actual Potable Supply Requirements

<table>
<thead>
<tr>
<th>Type of Development</th>
<th>No. of Units</th>
<th>Average</th>
<th>Max. Day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GPDA/HR</td>
<td>MGD</td>
</tr>
<tr>
<td>Ag-Zoned Residential</td>
<td>883</td>
<td>1,200</td>
<td>1.036</td>
</tr>
<tr>
<td>Other Residential</td>
<td>1795</td>
<td>700</td>
<td>1.258</td>
</tr>
<tr>
<td>Golf Course Clubhouse</td>
<td>6</td>
<td>25,000</td>
<td>0.150</td>
</tr>
<tr>
<td>Commercial</td>
<td>30 Ac.</td>
<td>3,000</td>
<td>0.090</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>2.682</td>
</tr>
</tbody>
</table>

Actual Well Development. The first of the two Ouli wells (indice No. 6046-01) was developed and pump tested at 1.5 MGD by Signal Oil in 1988. The second well is located just 1000 feet north of the first well, a less than desirable spacing at the proposed 1.5 MGD pumping rates. The second well was not actually completed. Narae held its construction after the pilot hole had been drilled and, to my knowledge, no pump test was ever conducted in the pilot borehole. Based on salinity and temperature profiles I've made in both of these wells, on static samples I've collected from them, and on other information such as from the nearby Kawamata well (No. 6145-01), it is clear that the quality of the second well will not be as good as the first. Its potential yield will only be known after an approximate pump test is conducted.

Unresolved Issues. It is unlikely that the two Ouli wells could actually provide all of the project's potable supply requirements. Given the limited spacing between the wells, their concurrent operation would have to be at moderate pumping rates of not more than 1.0 MGD per well. When standby capacity is considered, the two wells could only supply a smaller scale project than the one proposed.

Brackish Groundwater for Irrigation

Based on irrigation supply of 0.75 to 1.0 MGD for each of six golf courses and another 0.16 MGD for a golf academy, the Lum report forecasts a total brackish groundwater supply requirement of 4.86 to 6.16 MGD. This is to be obtained from six wells which would be arrayed along the inland boundary of the property. The Lum report only briefly deals with the potential impact of this pumping based on regional scale numbers for the sustainable yield of groundwater. His analysis ignores local-scale impacts which would clearly be significant. Substantial well development already exists upstream of the Pusuko parcel (the West Hawaii Utility Company's potable wells) and downstream in the Mauna Lani Resort (its seven active brackish wells). When the impacts within this salt-water-malath corridor are assessed, it is clear that drawing 4.5 to 6.2 MGD more for the Pusuko project will have a significant impact on the water quality of Mauna Lani's wells.
Memo To: Sachiko Murano  
January 24, 2000 - 00:56  
Page three

Regional Groundwater Flow. The best estimate of groundwater flow in South Kohala is the detailed water budget analysis by Brian Kaneshiro and Frank Peterson in 1977 (UH WARC Technical Report 110). It calculated a groundwater flow of 6.36 MGD per coastal mile. For the 3.25-mile section of the coastline from Puaako Bay to Makaiwa Bay, total groundwater flow would be about 21 MGD. Only a portion of this could be developed without impairing water quality, probably in the range of one-third to one-half of the total flow. Since the State Water Commission uses 44 percent to establish sustainable yields for twin basal aquifers, that fraction can be applied here. For the Puaako-to-Makaiwa section, then, the supply which can be safely developed is on the order of 9 MGD.

Existing Groundwater Use. The attached map shows the locations of the existing Waikolao and Mauna Lani wells in relation to the Nanae-Puaako parcel and the proposed six wells along its inland boundary. Pumping from existing wells is approximately 8.0 MGD at present (refer to the tally below). This leaves only a small amount left to develop in this particular mauka-makai corridor before water quality is likely to be adversely impacted.

Present Pumpage of Existing Wells

<table>
<thead>
<tr>
<th>Well(s)</th>
<th>Average Use (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waikolao Portable Wells (Nos. 6745-01, 02, &amp; 03 and 5848-01 &amp; 02)</td>
<td>4.0</td>
</tr>
<tr>
<td>Waikolao Village Golf Course Well (No. 5848-01)</td>
<td>0.7</td>
</tr>
<tr>
<td>Mauna Lani Resort Irrigation Wells (Nos. 6749-01, 6750-01, 02, 03, &amp; 04, 5860-02, and 5861-01)</td>
<td>3.9</td>
</tr>
<tr>
<td>Total Present Pumpage</td>
<td>8.6</td>
</tr>
</tbody>
</table>

High Salinity in Mauna Lani’s Irrigation Wells. The salinity of Mauna Lani Resort’s irrigation wells has been stable through the 1980s, but their high levels have been an ongoing problem for golf course operation and maintenance (refer to the tally of individual well pumpage and chloride below). Small salinity increases will render some of these wells useless and leave an inadequate remaining supply to irrigate the Resort’s two golf courses. In my view, there is no question that withdrawing an additional 4.8 to 5.2 MGD of groundwater from new wells directly upgradient will cause such a salinity rise to occur.
Memo To: Sachiko Murano  
January 24, 2000 - 00:00  
Page four

Summary of Mauna Lani Resort's Brackish Irrigation Wells

<table>
<thead>
<tr>
<th>Well</th>
<th>Usage in 1999</th>
<th>Average Chlorides (MG/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>State No.</td>
<td>Name</td>
<td>MGD</td>
</tr>
<tr>
<td>5790-04</td>
<td>STP</td>
<td>0.389</td>
</tr>
<tr>
<td>5790-03</td>
<td>Fire Station</td>
<td>0.363</td>
</tr>
<tr>
<td>6790-01</td>
<td>Pukio Shaft</td>
<td>1.522</td>
</tr>
<tr>
<td>5651-01</td>
<td>Highway</td>
<td>0.593</td>
</tr>
<tr>
<td>6850-02</td>
<td>Culvert</td>
<td>0.334</td>
</tr>
<tr>
<td>5749-01</td>
<td>North</td>
<td>0.682</td>
</tr>
<tr>
<td>5750-02</td>
<td>Pukio B Shaft</td>
<td>0.053</td>
</tr>
<tr>
<td>Total for Six Wells</td>
<td></td>
<td>3.883</td>
</tr>
</tbody>
</table>

Suggested Pragmatic Approach to Golf Course Construction. Given the possible adverse impact of the six proposed golf courses, proceeding with their development should occur on a cautiously pragmatic basis. Mauna Lani Resort conducts weekly testing for chlorides of all of its irrigation wells and the record of these tests and pumping amounts provide a valuable baseline. The same weekly monitoring should be required for the first and all subsequent golf courses constructed in the Pukio parcel. When the Pukio project then wants to proceed on the second or any subsequent golf course after the second, the monitoring record compiled by Mauna Lani Resort and for the Pukio golf course should be evaluated. Approval of all golf courses after the first one should be contingent on their having been no adverse impact on the Mauna Lani wells resulting from pumpage to irrigate the then-existing Pukio golf courses.

cc: Anne Mapes - BCH [Fax only: 3 pages]

Attachment
August 17, 1999

Ma. Sachiko Murano
Mauna Lani Resort
68-1110 Mauna Lani Drive, Suite 101
Kohala Coast, Hawaii 96743-9704

Dear Ma. Murano:

IRRIGATION WELLS CERTIFICATION
Mauna Lani Resort
At Waikoloa, South Kohala, Island of Hawaii, Hawaii

The undersigned hereby certifies that a field survey was performed to establish elevations on the listed irrigation wells at Mauna Lani Resort with the following results:

1. North Well, Well No. 5749-01:
   a. Elevation of "+" cut on concrete pad is 92.56 feet.

2. Fire Station Well, Well No. 5750-03:
   a. Elevation of "+" cut on steel plate is 59.48 feet.

3. Culvert Well, Well No. 5650-02:
   a. Elevation of "+" cut on concrete pad is 123.77 feet.
   b. Elevation of top of base plate is 123.92 feet.

4. Entrance Well, Well No. 5650-01:
   a. Elevation of "+" cut on concrete pad is 136.64 feet.
   b. Elevation of top of base plate is 136.81 feet.

5. Highway Well, Well No. 5651-01:
   a. Elevation of "+" cut on concrete pad is 120.96 feet.
   b. Elevation of top of base plate is 121.12 feet.

The elevations are referred to Mean Sea Level (MSL) and based upon Kawaihae Harbor Tidal Bench Mark 3 with an elevation of 7.23 feet, MSL.

R. M. TOWILL CORPORATION

Robert Y. Lee
Licensed Professional Surveyor
Certificate Number 5075

Cc: Greg Fukumoto, TNWR
INSTRUCTIONS: Complete this form to report total monthly ground water use from each of your well sources, and mail to: Division of Water Resource Management, P.O. Box 373, Honolulu HI 96809. A separate form is available for reporting of surface water use.

Water User: MAUNA LANI RESORT, INC.  
Island: HAWAII

Water Use Quantity reported in (x 1000 gallons) (Units of Measurement)

<table>
<thead>
<tr>
<th>Well Name</th>
<th>State Well No.</th>
<th>Water Use Quantity</th>
<th>Method of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>STP</td>
<td>5750-04</td>
<td>12426.0</td>
<td>meter reading</td>
</tr>
<tr>
<td>FIRE STATION (1988)</td>
<td>5750-03</td>
<td>no reading</td>
<td>meter reading</td>
</tr>
<tr>
<td>PUAKO (1960)</td>
<td>5750-01</td>
<td>45039.2</td>
<td>meter reading</td>
</tr>
<tr>
<td>HIGHWAY (1989)</td>
<td>5651-01</td>
<td>0.0</td>
<td>meter reading</td>
</tr>
</tbody>
</table>

Additional information: (Water level, chlorides, temperature, pump condition, change in use, etc.)

* Pumpage initiated (seaweed) in July 1990

Submitted by (print) NORMAN AH HEE  
Signature

Title RESORT SERVICES MANAGER  
Date 10-14-91
STATE OF HAWAII
COMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT

MONTHLY GROUND WATER USE REPORT

Month of __MAY___, 1990

04 / 24 / 90 to 05 / 29 /90
(Month / Day / Year) (Month / Day / Year)

INSTRUCTIONS: Complete this form to report total monthly ground water use from each of your well sources, and mail to Division of Water Resource Management, P.O. Box 373, Honolulu HI 96809. A separate form is available for reporting of surface water use.

Water User: MAUNA LANI RESORT, INC. Island: __HAWAII____

Water Use Quantity reported in __(X 1000 gallons)__ (Units of Measurement)

<table>
<thead>
<tr>
<th>Well Name</th>
<th>State Well No.</th>
<th>Water Use Quantity</th>
<th>Method of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUAKO</td>
<td>5750-01</td>
<td>58,097.0</td>
<td>meter reading</td>
</tr>
</tbody>
</table>

Additional information: (Water level, chlorides, temperature, pump condition, change in use, etc.)

Submitted by (print) Norman Ah Hee
Signature ____________________________
Title Resort Services Manager
Date 06-15-90
October 8, 1992

MEMORANDUM FOR THE RECORD

FROM:  Bill Rozeboom

SUBJECT: MAUI LANI RESORT: WELL PERMIT VIOLATIONS?

Maui Lani Resort, Inc. presently uses water from four active wells, according to water use reports being submitted by them to us. However, three of the four wells may be lacking the required permits.

Well No. 5750-01: "Pa'ako" No problems with permit requirements on this well. It was constructed in 1960 and a registration/declaration of use form was filed for it in 1989.

Well No. 5651-01: "Highway" Well may be in service without a pump installation permit. A construction permit for this well was issued in March 1989. A well completion report is logged in the master log as having been received, but the form is not in the well file. According to water use reports, the well was placed into operational service and withdrawals of water began in July 1990. An application for a pump installation permit was received in November 1991 but there is no indication that this application was ever acted on.

Well No. 5750-03: "Fire Station" Well may be in service without a pump installation permit. A construction permit for this well was issued in March 1989. There is no evidence that a well completion report or application for a pump installation permit was ever received for this well. According to water use reports, the well was placed into operational service and withdrawals of water began in July 1990.

Well No. 5750-04: "STP" Well may have been constructed without a construction permit and placed in service without a pump installation permit. I could not find a file for this well, and it is not listed in the well permit application database. It is, however, marked on our working map showing all assigned well numbers, so someone must know something about it? According to water use reports, the well was placed into operational service and withdrawals of water began in July 1990.
WELL COMPLETION REPORT

Intructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management. An ear-bored drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 567-0296.

1. STATE NO. 5750-03 WELL NAME Fire Station Well ISLAND Hawaii
2. LOCATION: Address Mauna Lani Resort Tax Map Key 6-8-015:2
3. DRILLING OR PUMP INSTALLATION CONTRACTOR Big Island Drilling
4. CONTRACTOR'S C-57 LICENSE NUMBER C-11456
5. NAME OF DRILLER WHO PERFORMED WORK Paul Bergstedt
6. TYPE OF RIG/CONSTRUCTION Cable-Tool
7. DATE OF WELL DRILLING COMPLETION July 1988

NOTE: Report must be submitted within 30 days after this date.


9. DRILLER'S LOG:

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

(If more space is needed, continue on back.)

10. TOTAL DEPTH OF WELL BELOW GROUND 70 ft.

11. HOLE SIZE: 16 inch dia. from 0 ft. to 70 ft. below ground

12. CASING INSTALLED:

<table>
<thead>
<tr>
<th>Dia. (in. I.D.)</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>60</td>
<td>0.3125 in. wall solid section to 60 ft. below ground</td>
</tr>
<tr>
<td>12</td>
<td>70</td>
<td>0.3125 in. wall perforated section to 70 ft. below ground</td>
</tr>
</tbody>
</table>

Type of Perforation 60 sq. in./LF

13. ANNUALS:

<table>
<thead>
<tr>
<th>Dia. (in.)</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>30</td>
<td>0 ft. below ground to 30 ft. below ground</td>
</tr>
<tr>
<td>0</td>
<td>70</td>
<td>0 ft. below ground to 70 ft. below ground</td>
</tr>
</tbody>
</table>

Gravel packed from -- ft. below ground to -- ft. below ground

14. INITIAL WATER LEVEL 57 ft. below ground. Date and time of measurement

15. INITIAL CHLORIDE ppm Date and time of sampling

16. INITIAL TEMPERATURE °F Date and time of sampling

17. DATE OF PUMP INSTALLATION 12-89 ( Permanent Pump )

18. PUMP INSTALLATION:

<table>
<thead>
<tr>
<th>Pump Type, Make, Serial No.</th>
<th>Capacity</th>
<th>Motor type, H.P., Voltage, rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submersible, Crown</td>
<td>425 gpm</td>
<td>Submersible Electric Motor, 15 HP, 430 Volts, 3450 RPM</td>
</tr>
</tbody>
</table>

Depth of Pump Intake Setting 64.5 ft. below ground, which elevation is (-) 5.5 ft.

Depth of bottom of airline N/A ft. below ground, which elevation is -- ft.

Pumping Head is 75 ft.

19. PUMPING TESTS:

<table>
<thead>
<tr>
<th>Start water level</th>
<th>Start water level</th>
</tr>
</thead>
<tbody>
<tr>
<td>57 ft. below R.P.</td>
<td>57 ft. below R.P.</td>
</tr>
</tbody>
</table>

Depth of well 70 ft. below R.P.

<table>
<thead>
<tr>
<th>Time elapsed (hours)</th>
<th>Rate Draw-down (gpm)</th>
<th>Temp. °F</th>
<th>Elapsed Time elapsed (hours)</th>
<th>Rate Draw-down (gpm)</th>
<th>Temp. °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>--</td>
<td>1:00</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2:00</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>3:00</td>
<td>300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4:00</td>
<td>400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5:00</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(If more space is needed, continue on back.)

Remarks:

Contractor (print) Big Island Drilling Title

Signature

Date

For Driller's Use:
Job Name Job No.

For Official Use:
Well No. 5750-03
Longitude 19° 55' 12"
Latitude 19° 57' 11"
9. (cont'd) DRILLER'S LOG (cont'd):

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

19. (cont'd) PUMPING TESTS (cont'd):

<table>
<thead>
<tr>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Temp. °F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Remarks (cont'd): 

____________________________
____________________________
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____________________________
____________________________
____________________________
DATE: September 24, 1992

TO: Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 373
Honolulu, Hawaii 96809

ATTENTION: Ed Sakoda

SUBJECT: Mauna Lani Resort - Irrigation Well Completion Reports for Well No. 5750-03 and 5651-01.

We herewith transmit the following:

1 9/25/92 Mauna Lani Resort - Well Completion Report for Fire Station Well, State Well No. 5750-03.


Remarks:

We herewith transmit the above reports for your files. We filled out these reports with information we have in our files and left blank items where we did not receive any data from the driller. Also, we did not sign either report for the driller.

Please feel free to call the undersigned if there are any questions regarding this matter.

Sincerely,
Tom Nance Water Resources Engineering

Greg Fukumitsu, P.E.

cc: Billy Spitz, Mauna Lani Resort
TO: Mauna Lani Resort, Inc.
HCR-2, P.O. Box 4959 (Kohala Coast)
Kamuela, HI 96743

REVOCATION OF WELL CONSTRUCTION PERMIT
Previously issued on March 23, 1989, for
Mauna Lani Resort Well
Well No. 5750-03
Waikoloa, South Kohala, Hawaii

On March 23, 1989, the Commission on Water Resource Management issued you a permit to construct and test Well No. 5651-01 for golf course irrigation use within Tax Map Key 6-8-01:52. The permit was valid for two years from the date of issuance and required that a well completion report be submitted within 30 days after completion of the well.

As of this date, no well completion report or other evidence indicates that the subject well was ever constructed and that the permit should be revoked.

You are hereby notified in accordance with H.A.R. §13-14d that the above-mentioned well shall be revoked within 60 days unless you can show good cause that it should not be revoked.

P 719 096 848
RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

I also wish to receive the following services (for an extra fee):
1. □ Addressee’s Address
2. □ Restricted Delivery
Consult postmaster for fee.

SENDOR:
• Complete items 1 and/or 2 for additional services.
• Complete items 3, 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 next to the article number.

3. Article Addressed to:
Mauna Lani Resort, Inc.
HCR-2, P.O. Box 4959 (Kohala Coast)
Kamuela, HI 96743

BR:ky

4a. Article Number
P 719 096 848

4b. Service Type
□ Registered □ Insured
□ Certified □ COD
□ Express Mail □ Return Receipt for Merchandise

5. Signature (Addressee)

6. Signature (Addressee)

7. Date of Delivery
8/14/92

8. Addressed’s Address (Only if requested and fee is paid)

DOMESTIC RETURN RECEIPT
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 548-3948 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.: 5750-03
WELL NAME OR DESIGNATION: None
ISLAND: Hawaii

SOURCE OR STATION NAME (For a battery of wells):

A. WELL OPERATOR
Firm name: Mauna Lani Resort, Inc.
Contact person: Mike Gomes
Address: P.O. Box 4959 - HCR 2
Kohala Coast, Hawaii
Zip: 96743 Phone: 885-6677

B. OWNER OF WELL SITE
Firm name: Mauna Lani Resort, Inc.
Contact person: Tom Yamamoto
Address: P.O. Box 4959 - HCR 2
Kohala Coast, Hawaii
Zip: 96743 Phone: 885-6677

C. WELL LOCATION
Tax Map Key: 6-8-01:52
Town, Place, District: South Kohala, Hawaii
Attach USGS "Quad" map (scale 1:24,000), tax map, or other map showing the well location.

D. WELL DATA
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): 58 ft.
Reference point (Used to measure depth to water): Elevation: 58.33 ft.
Description: Top of Casing

Depth to water (Below reference point): 57.0 ft.
Maximum recorded chloride: __________ ppm
Minimum recorded chloride: __________ ppm
Maximum chloride in 1987: __________ ppm

Year drilled or constructed: 1993
Well contractor: Big Island Drilling

Casing diameter: 12 in.
Solid casing depth (Below ground): 60 ft.
Perforated casing depth (Below ground): 70 ft.
Total depth of well: 70 ft.
Chlorides of initial pump test: 630 to 850 MGL
Minimum chloride in 1987: __________ ppm

E. INSTALLED PUMP DATA
Pump type: [] Vertical shaft [] Submersible [] Centrifugal [] Other (specify):
Power: [] Diesel, __ HP [] Gas, __ HP [] Electric, __ HP [] Other (specify):
 Pump capacity: _______ gallons per minute
Pump installation contractor: __________

Well has been drilled and tested; no permanent pump has been installed.

For Official Use Only:
Date received: __________ Date accepted: __________
Field checked by: __________ Date: __________ Latitude: __________ Hydrologic Unit: __________
Comments: __________ Longitude: __________ State Well No: __________

References: Hawaii Revised Statutes, Chapter 174C.
Hawaii Administrative Rules, Chapters 13-167 to 13-171.
March 20, 1989

Nauna Lani Resort, Inc.
HCR-2, P.O. Box 4959 (Kohala Coast)
Kamuela, Hawaii 96743

Gentlemen:

I am pleased to inform you that the Commission on Water Resource Management approved your request for two well construction permits at its March 15, 1989 meeting.

Attached are your permits as well as the following forms that are required under the conditions of the permits:

Application for Pump Installation Permit
Well Completion Report

If you have any questions, please contact Mr. Dan Lum at 548-7643.

Sincerely,

[Signature]

MANABU TAGOMORI
Deputy Director

Enc.
WELL CONSTRUCTION PERMIT

for
Mauna Lani Resort Well
State Well No. 5750-03
Waikoloa, South Kohala, Hawaii

TO: Mauna Lani Resort, Inc.
HCR-2, P.O. Box 4959 (Kohala Coast)
Kamuela, Hawaii 96743

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to construct and test State Well No. 5651-01 for golf course irrigation use within Tax Map Key: 6-8-01:52 is approved subject to the following conditions:

1. The Division of Water and Land Development (DOWALD), Geology-Hydrology Section, shall be notified at 548-7619, before any work covered by this permit commences.

2. The permit shall be for construction and testing only. No permanent pump may be installed and no water used from the well without the necessary pump installation permit from the Commission. Prior to any planned use, the well shall be pump tested to determine the safe yield and any potential impact on surrounding wells. A step drawdown test and a sustained rate pumping test of at least 72 hours shall be conducted for each well.

3. The following shall be submitted to DOWALD, P.O. Box 373, Honolulu, Hawaii 96809 within 30 days after completion of the well:
   a. Well Completion Report.
b. Ground elevation (referenced to mean sea level) determined by survey by a Hawaii-licensed surveyor. Static water level shall be measured by the driller using the survey data as reference.

c. As-built sectional drawing of the well.

d. Plot plan and map showing the exact location of the well.

e. Complete pumping test record; including time, pumping rate, drawdown, chloride content, and water quality data.

4. The applicant shall comply with all applicable laws, rules, and ordinances.

5. This permit may be revoked if work is not started within six months of date of issuance or if work is suspended or abandoned for six months. The work shall be completed within two years of the date of issuance.

MAR 23 1989
WILLIAM W. PATY

Date of Issuance

cc: USGS
    Department of Health,
    Drinking Water Program
    Ground Water Protection Program
    Maui Department of Water Supply
    Belt Collins & Associates
Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Mauna Lani Resort, Inc.
Application for Well Construction Permits
Mauna Lani Irrigation Wells, Waikoloa, South Kohala, Hawaii

Applicant: Mauna Lani Resort, Inc.
HCR-2, P.O. Box 4959
Kohala Coast, Hawaii 96743

Action Requested: Permission to construct and test two 12-inch diameter, exploratory wells (State Well Nos. 5651-01 and 5750-03) for golf course irrigation.

Well Location: The proposed well sites are in Waikoloa, South Kohala, Hawaii, at Tax Map Keys: 6-8-22:32 and 6-8-01:52 (see attached map).

Proposed Use of Well: To construct and test for two new sources of water for golf course irrigation.

Well Description:  

<table>
<thead>
<tr>
<th>Ground elevation:</th>
<th>Well 5651-01</th>
<th>Well 5750-03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casing diameter:</td>
<td>125± ft.</td>
<td>90± ft.</td>
</tr>
<tr>
<td>Solid casing depth:</td>
<td>12-inch I.D.</td>
<td>12-inch I.D.</td>
</tr>
<tr>
<td>Screen casing depth:</td>
<td>123± ft.</td>
<td>68± ft.</td>
</tr>
<tr>
<td>Open hole:</td>
<td>10 ft.</td>
<td>10 ft.</td>
</tr>
<tr>
<td>Open hole diameter:</td>
<td>2 ft.</td>
<td>2 ft.</td>
</tr>
<tr>
<td>Total depth:</td>
<td>133 ft.</td>
<td>100 ft.</td>
</tr>
<tr>
<td>Grouted annulus:</td>
<td>0-100 ft.</td>
<td>0-80 ft.</td>
</tr>
<tr>
<td>Proposed pump capacities:</td>
<td>700 gpm</td>
<td>700 gpm</td>
</tr>
</tbody>
</table>

Agency Review: The application has been sent to the State Department of Health (DOH), the Hawaii Department of Water Supply (DWS), and the County Department of Public Works (DPW) for review. DWS and DPW had no objections. DOH expressed concern that portions of the golf course irrigated by the proposed wells appear to be situated above the Underground Injection Control (UIC) line and various golf course-associated activities should not be allowed to contaminate groundwater. The applicant has informed staff that no portion of the golfcourse is situated above the UIC line. DOH also noted that Well 5651-01 is located above the UIC line and should be designed and constructed to prevent the possibility of groundwater contamination.

Analysis: The wells are expected to encounter a thin (3± ft.), brackish basal lens.

The closest well to Well 5651-01 is approximately two miles southwest along the coastline and is used for irrigation of the Waikoloa Beach Resort golf course.
Chairperson and Members
COMMISSION ON WATER RESOURCE MANAGEMENT  March 15, 1989

There are three existing wells within a mile and a half north of Well 5750-03. The closest (2,300 ft. away) is unused. Another (3,100 ft. away) is used intermittently for nursery irrigation, and the third (a mile and a half away) is used for golf course irrigation. All three wells are owned by Mauna Lani Resort, Inc.

There are two wells mauka of Well 5750-03. The closest (2 miles away) is unused. The other (3 miles away) is used for irrigation of the Waikoloa Village golf course.

RECOMMENDATION

That the Commission approve the issuance of a well construction permit for construction and testing of Mauna Lani Irrigation Wells, subject to the following conditions:

(1) The Division of Water and Land Development (DOWALD) shall be notified before work commences.

(2) The permit shall be for construction and testing only. No permanent pumps may be installed and no water used from the wells without the necessary pump installation permits. Prior to any planned use, the wells shall be pump tested to determine the safe yield and any potential impact on surrounding wells. A step drawdown test and a sustained rate pumping test of at least 72 hours shall be conducted for each well.

(3) The following shall be submitted to DOWALD within 30 days after completion of the wells:
   b. Ground elevations (referenced to mean sea level) determined by survey by a Hawaii-licensed surveyor. Static water levels shall be measured by the driller using the survey data as reference.
   c. As-built sectional drawings of the wells.
   d. Plot plans and map showing the exact locations of the wells.
   e. Complete pumping test record; including time, pumping rate, drawdown, chloride content, and water quality data.

(4) The applicant shall comply with all applicable laws, rules, and ordinances.

(5) The permit may be revoked if work is not started within six months of date of issuance or if work is suspended or abandoned for six months. The work shall be completed within two years of the date of issuance.

Respectfully submitted,

MANABU TAGOMORI
Deputy Director

Attach.

APPROVAL FOR SUBMITTAL:

WILLIAM W. PATY, Chairperson
January 31, 1989

MR MANABU TAGOMORI  DEPUTY DIRECTOR
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P O BOX 621
HONOLULU HI  96809

SUBJECT:  WELL CONSTRUCTION PERMIT APPLICATIONS
Mauna Lani Irrigation Wells
State Well Nos. 5651-01 and 5750-03
South Kohala, Hawaii

We have reviewed the permit application for the subject project and have no objections to it.

HUGH Y. ONO, P.E.
Chief Engineer

STT:aa
January 30, 1989

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

WELL CONSTRUCTION PERMIT APPLICATIONS
MAUNA LANI IRRIGATION WELLS
STATE WELL NOS. 5651-01 AND 5750-03, KOHALA COAST

We have no objections to the two (2) permit applications for irrigation wells.

H. William Sewake
Manager

GK

... Water brings progress...
January 23, 1989

Mr. Hugh Y. Ono
Chief Engineer
Department of Public Works
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Ono:

Well Construction Permit Applications
Mauna Lani Irrigation Wells
State Well Nos. 5651-01 and 5750-03, Kohala Coast

Enclosed are copies of two well construction permit applications submitted by Mauna Lani Resort, Inc.

Please review the applications and submit your comments to us, orally or in writing, at your earliest convenience. We would appreciate your comments within three weeks from the date of this letter.

If you have any questions, please contact Dan Lum at 548-7643.

Sincerely,

[Signature]

MANABU TAGOMORI
Deputy Director

Enc.
ATTENTION: Mr. Tom Arizumi, Drinking Water Program

Dear Dr. Lewin:

Well Construction Permit Applications

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168-12(c), enclosed are the following well construction permit applications with maps for your review and comments:

(1) Barbers Point-Kalaeloa Wells, State Well Nos. 1805-04, 05
(2) Kaneohe MCAS Monitor Test Holes, State Well Nos. 2644-01M to 08M, 2645-01M
(3) Mauna Lani Irrigation Wells, State Well Nos. 5651-01 and 5750-03 (Kohala Coast)
(4) Koloa Well E, State Well No. 5427-03 (Koloa, Kauai)
(5) Bellows AFS Monitor Test Holes, State Well Nos. 2143-01M to 04M

Please submit any comments to us, orally or in writing, within three weeks from the date of this letter. If you have any questions, please contact Manabu Tagomori at 548-7533.

Very truly yours,

WILLIAM W. PATY

Enc.
Mr. William Sewake  
Manager and Chief Engineer  
Department of Water Supply  
County of Hawaii  
25 Aupuni Street  
Hilo, Hawaii 96720

Dear Mr. Sewake:

Well Construction Permit Applications  
Mauna Lani Irrigation Wells  
State Well Nos. 5651-01 and 5750-03, Kohala Coast

Enclosed are copies of two well construction permit applications submitted by Mauna Lani Resort, Inc.

Please review the applications and submit your comments to us, orally or in writing, at your earliest convenience. We would appreciate your comments within three weeks from the date of this letter.

If you have any questions, please contact Dan Lum at 548-7643.

Sincerely,

[Signature]

MANABU TAGOMORI  
Deputy Director

Enc.
December 6, 1988
88–2145

Mr. William Paty
Division of Water Resource Management
Department of Land & Natural Resources
P. O. Box 373
Honolulu, Hawaii 96809

Dear Mr. Paty:

Well Construction Permits for
Future Irrigation Wells at Mauna Lani Resort

Enclosed for your review and approval are two well construction permits for future irrigation wells located at Mauna Lani Resort, North Kohala, Hawaii. Should you have any questions regarding these permits, please do not hesitate to call us.

Sincerely yours,

Tom Nance

GF:tgk
Enclosures
APPLICATION FOR

WELL CONSTRUCTION PERMIT
PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96808. Application must be accompanied by a non-refundable filing fee of $25.00 payable to the Department of Land and Natural Resources. (Filling fee waived for government agencies.) If necessary, phone 1-800-7543, Hydrology/Geology Section for assistance.

1. WELL LOCATION
Island Hawaii Tax Map Key 6-8-01:52
Address Within Mauna Lani Resort; will be Well No. 5750-03 (see attached map)
(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER
Firm Name MAUNA LANI RESORT, INC.
Contact Person THOMAS H. YAMAMOTO
Address HCR-2, P.O. BOX 4959
KOHALA COAST, HAWAII, 96743
Phone 885-6677

3. PROPOSED CONTRACTOR FOR: [ ] Well Drilling [ ] Pump Installation
Name Big Island Drilling
Address P.O. Box 2297
Kona, Hawaii 96745
Contractor's License No. C 11456

4. PROPOSED WORK

[ ] Drill New Well [ ] Alter [ ] Install New Pump
[ ] Deepen [ ] Seal [ ] Replace Pump
[ ] Redrill [ ] Abandon [ ] Modify Pump

(Briefly describe the proposed work and fill in the diagram on the back of this form.)

5. PROPOSED USE

[ ] Municipal (including hotels, stores, etc.) [ ] Military
[ ] Domestic (individual, noncommercial water systems) [ ] Industrial
[ ] Irrigation (specify) Golf Course [ ] Other (specify) 

6. PROPOSED AMOUNT OF WITHDRAWAL 700,000 gallons per day

7. PROPOSED PUMP INFORMATION
Pump Type: [ ] Vertical Turbine [ ] Submersible [ ] Centrifugal
Motor: [ ] Diesel [ ] Gas [ ] Electric: 25 [ ] Rated Horsepower
Rated Pump Capacity 700 gallons per minute (gpm)

Well Owner (print) MAUNA LANI RESORT, INC. Landowner (print) MAUNA LANI RESORT, INC.
Signature ___________________________ Signature ___________________________
Date NOVEMBER 30, 1988 Date NOVEMBER 30, 1988

For Official Use Only:
Field Checked By __________________ latitude __________________ Hydrologic Unit __________________
Date __________________ longitude __________________ State Well No. 5750-03
Briefly describe the proposed work:

PROPOSED SECTION OF WELL

Elevation at top of casing 92 ft., msl.

Ground Elev. 90 ft., msl*

Cement Grout 80 ft.

Hole Dia. 16 in.

Total Depth 100 ft.

Rock Packing None ft.

Solid Casing:
- Material: Steel ASTM A-53
- Length: 88 ft.
- Diameter: 12 in.
- Wall thickness: 0.3125 in.

Casing: /X/Perforated / /Screen
- Material: Steel ASTM A-53
- Length: 10 ft.
- Diameter: 12 in.
- Wall thickness: 0.3125 in.
- Openings: 60 sq. in./L.F.

Open Hole:
- Length: 2
- Diameter: 10 in.

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.
MAUNA LANI IRR WELL NO.5750-03

ISLAND OF HAWAII

PROJECT AREA

SCALE IN MILE