Commission on Water Resource Management  
P.O. Box 621  
Honolulu, Hawaii 96809  

Re: MacFarms of Hawaii Well No. 1 (State Well No. 0751-01)

Ladies and Gentlemen:

This letter is to inform you that on JUN 27 2003, 2003, MacFarms of Hawaii Well No. 1 (State Well No. 0751-01) was transferred by MacFarms of Hawaii, Inc., a Hawaii corporation, to Kapua Orchard Estates, LLC, a Delaware limited liability company, whose address is 89-406 Mamalahoa Highway, Captain Cook, Hawaii 96704. The transfer occurred in connection with the sale of substantially all of the real and personal property of MacFarms of Hawaii, Inc. Please note that State Well No. 0751-01 was formerly designated as State Well No. 0952-01.

Sincerely,

MACFARMS OF HAWAII, INC.

By
Douglas D. Youngdahl  
President and Chief Executive Officer
April 24, 2003

Mr. Hilary Brown
MacFarms of Hawaii, Inc.
89-406 Mamalahoa Highway
Captain Cook, HI 96720

Dear Mr. Brown:

Well Construction/Pump Installation Permit for former Well No. 0952-01

This is a clarification for the MacFarms Well 1 (formerly Well No. 0952-01). There has apparently been some confusion over which well was permitted. There were five wells applied for and permitted. They are designated as MacFarms Wells 1 through 5, State Well Nos. 0952-01 (Well 1), 0950-01 or 0951-01 (Well 2), 0852-01 (Well 3), 1050-01 (Well 4), and 0751-01 (Well 5), though the numbers have changed with the change of well locations. Our understanding based on communications with your office has been that the Well No. 1 (which was designated as 0952-01) was the only well drilled. However, recent communication indicates that the actual well drilled was in the location of Well No. 5 (0751-01). All correspondence was sent to our office under Well No. 0952-01. We also received your easement information on March 27, 2003.

Therefore, we would like to inform you that we are changing the designation of Well No. 1 to be 0751-01. We are also informing you that since the remaining wells were not drilled, you only have one valid permit, which was formerly designated as 0952-01.

Please change the well number for subsequent correspondence to Well No. 0751-01.

If you have any questions, please contact Ryan Imata of the Commission staff at 587-0255 or toll-free at 974-4000 (Hawaii), 274-3141 (Kauai), 984-2400 (Maui), or 1-800-468-4644 (Lanai & Molokai), extension 70255.

Sincerely,

ERNEST Y.W. LAU
Deputy Director

RI:ss
LETTER OF TRANSMITTAL

TO: Mr. Neal Fujii
Department of Land and Natural Resources
Commission on Water Resource Mgmt
1151 Punchbowl Street, 2nd Floor
Honolulu, Hawaii 96813

DATE: March 26, 2003

RE: Mac Farms of Hawaii

THE FOLLOWING IS (ARE) TRANSMITTED HEREWITH:

<table>
<thead>
<tr>
<th>COPIES</th>
<th>DATE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>1</td>
<td>Copy</td>
<td>Grant of Easement (Right of Entry Well)</td>
</tr>
</tbody>
</table>

☐ For Your Information ☐ For Review and Comment
☐ For Your Files ☐ For Necessary Action
☐ Per Your Request ☐ For Signature and Return (Black Ink)
☐ Per Our Conversation ☒ See Remarks below


By Patricia Devlin

Enclosure
GRANT OF EASEMENT
(RIGHT OF ENTRY WELL)

THIS INDENTURE is made this ___ day of ___, 2002, by and between ONE KEAHOLE PARTNERS, a Hawaii general partnership, the principal place of business and post office address of which is 92-1480 Aliinui Drive, Kapolei, Hawaii 96707, hereinafter called "GRANTOR", and MAC FARMS OF HAWAII, INC., a Hawaii corporation, the principal place of business and post office address of which is 89-406 Mamalahoa Highway, Captain Cook, Hawaii 96704, hereinafter called "GRANTEE".

WITNESSETH:

WHEREAS, GRANTOR owns in fee simple certain parcels of land situate at Kapua, District of South Kona, Island and County of Hawaii, State of Hawaii (hereinafter called the "Land"), more particularly described in Exhibit "A" attached hereto and incorporated herein by reference; and

WHEREAS, GRANTOR’s predecessors in interest granted to GRANTEE a Right of Entry dated May 24, 1989, recorded in the Bureau of Conveyance of the State of Hawaii in Liber 23307, Page 258, that afforded GRANTEE a right to explore for water on GRANTOR’s Land and to construct, install and operate water delivery systems thereon; and

WHEREAS, the Right of Entry provides that upon GRANTEE’s initial installation and construction of a well, GRANTEE shall cause to be drawn and prepared a grant of perpetual easement covering the actual easement area to be used by GRANTEE and shall have the grant executed and then recorded as aforesaid; and

WHEREAS, GRANTEE has completed the initial installation of a well on GRANTOR’s Land and has determined the actual metes and bounds description of the easement areas to be used for the well and for the related improvements, equipment and appurtenances, all comprising a part of GRANTEE’s water delivery system; and

WHEREAS, pursuant to the terms of said Right of Entry, GRANTEE has requested and GRANTOR has agreed to grant to GRANTEE a perpetual easement over the aforesaid easement areas for the purposes described herein.

NOW, THEREFORE, for good and sufficient consideration including the mutual covenants contained herein, the parties hereby agree as follows:

GRANTOR does hereby grant and convey unto the GRANTEE, its successors and permitted assigns, a nonexclusive, perpetual easement for the purpose of constructing, maintaining and operating a water delivery system over, upon, through, across and under the
portions of the Land described in Exhibit “B” attached hereto and made a part hereof (hereinafter called the “Easement Areas”);

TOGETHER WITH: (1) the right to construct, reconstruct, install, lay, maintain, operate, repair, replace, use, and remove a well, pumping facilities, storage tanks, water pipe lines, and other equipment and appurtenances constituting a part of the water delivery system over, under, across and through the Easement Areas; and (2) the right to construct, reconstruct, install, lay, maintain, operate, repair, replace, use, and remove roadways and utility and power lines and conduits necessary to accommodate the well site, pumping facilities, storage tanks, and related equipment and appurtenances over, under, across and through the Easement Areas (hereinafter sometimes collectively called the “facilities”); provided, however, that the use of all water derived from the facilities shall be limited to use within and in connection with the lands described in Exhibit “C” attached hereto and made a part hereof.

TO HAVE AND TO HOLD said nonexclusive, perpetual easement and rights unto GRANTEE, its successors and permitted assigns, absolutely and forever.

And GRANTOR does hereby covenant and agree with GRANTEE as follows:

1. **Permits and Approvals.** GRANTOR shall execute and consent to all necessary applications, maps and related documents as may be required to obtain a well drilling permit, permits to operate the pumping facilities and all other government permits and approvals required to fully accomplish the objective of establishing, operating and maintaining the water delivery system on the Land. Upon the filing by GRANTEE of any application for a well-drilling permit with any governmental agency affecting the Land, GRANTEE shall provide GRANTOR with a true and correct copy of said application.

2. **Title.** The Easement Areas are free and clear of and from all encumbrances except as set forth on Exhibit “A”, GRANTOR has good right and title to convey the rights and easements herein granted, and GRANTOR will and its successors and assigns shall warrant and defend the same unto GRANTEE, its successors and assigns, forever, against the lawful claims and demands of all persons except as aforesaid.

AND IT IS HEREBY MUTUALLY UNDERSTOOD AND AGREED by and between the parties hereto:

A. **Design and Construction.** GRANTEE covenants and agrees that the design, construction and maintenance of its well, pumping facilities, storage tanks, and water pipe lines, and all related appurtenances and equipment shall conform to good hydrological practices and to all applicable laws and regulations, whether federal, state or local.

B. **Minimize Interference.** GRANTEE will exercise its rights hereunder in a manner that will minimize interference with and not unreasonably restrict the use of the Land by GRANTOR.
C. **Priorities.** In consideration of the grant of easement hereby made by GRANTOR, GRANTEE hereby agrees that any water delivery system it constructs on the Land shall be developed and operated consistent with good hydrological practices (as aforesaid) in a manner which shall not unreasonably interfere with (or unreasonably diminish the water available to) any pre-existing water delivery system developed on the Land, it being understood and agreed by the parties hereto that each water delivery system developed on the Land shall have priority with respect to the use of available water within the Land in accordance with the order in which each such system is established. GRANTEE shall not under any circumstances be entitled to make any claims against any developer of a pre-existing water delivery system located on the Land to the effect that the continued operation of any pre-existing water delivery system has or will diminish the quantity of water, or pollute or otherwise adversely affect the quality of water available to GRANTEE’s water delivery system(s); provided that the operation of each such pre-existing water delivery system in connection with the reticulation or use of water by the developers of any such pre-existing water delivery system, on their respective lands, is consistent with proper agricultural and hydrological practices and with all applicable laws, whether federal, state or local. GRANTEE shall require that each user or consumer, other than GRANTEE, of water derived from GRANTEE’s wells on the Land shall agree in writing to be bound by all provisions and restrictions that are binding upon GRANTEE contained in the preceding sentence and GRANTEE shall deliver a copy of said written agreement executed by each such user or consumer to GRANTOR.

D. **Utilities.** All utility and power lines shall be located either underground or at a height that will avoid interference with GRANTOR’s use of the Land.

E. **Water Rights.** GRANTEE shall own and possess the exclusive right to distribute water pumped from its well so long as it continues to operate such well and no compensation therefor shall be paid to GRANTOR; subject, however, to any prior rights to such water provided for in Paragraph C hereinafore and to the restriction that such water shall be used only within and in connection with the lands described in Exhibit “C” attached hereto.

F. **Condemnation.** If at any time the Easement Areas or any part thereof shall be condemned or taken by any authority exercising the power of eminent domain, then: GRANTEE shall have the right to claim and recover from the condemning authority, but not from GRANTOR, such compensation as is payable for the easement and for the facilities or any part thereof, installed or paid for by GRANTEE; and GRANTOR shall have the right to claim and recover from the condemning authority, but not from GRANTEE, such compensation as is payable for the Land.

G. **Assignments.** The rights and easement granted hereunder shall not be encumbered or assigned, transferred or conveyed to any person or entity without the prior written consent of the GRANTOR, which consent shall not be unreasonably withheld; provided, however, that notwithstanding the foregoing, such rights and easement granted hereunder may be assigned, transferred or conveyed by GRANTEE without the prior written consent of GRANTOR to:
(a) Any one (1) person or entity that owns all or any part of the lands described in Exhibit "C" in fee simple, or to any one (1) group of persons and/or entities that own such land in fee simple as tenants in common, joint tenants, or tenants by the entirety, or to any one association, cooperative or other entity whose members own such land; and/or

(b) In the event that all or any part of the lands described in Exhibit "C" shall have been sold pursuant to an agreement of sale which provides that title shall continue to be held by the vendor until all payments required under such agreement of sale have been made, then such assignment, transfer or conveyance may also be made to any one (1) person or entity who is a vendee under such agreement of sale or to any one (1) group of persons and/or entities who are vendees under such agreement of sale as tenants in common, joint tenants or tenants by the entirety, provided that the rights hereunder shall automatically revert to the vendor under such agreement of sale if the rights of such vendee under the agreement of sale shall be terminated and such vendee shall not thereupon become the owner of such lands in fee simple; and

Provided, further, however, that such assignment shall be effective only if the assignee or transferee shall agree in writing to be bound by all provisions, obligations and restrictions applicable to and binding upon GRANTEE contained herein and GRANTEE shall deliver a copy of said written agreement executed by such assignee or transferee to GRANTOR.

H. Equipment and Improvements. Ownership of all the equipment and improvements related to the water delivery system shall always remain in GRANTEE, who shall, at its expense, be entitled to remove the same at any time in its sole discretion; provided, however, that after any such removal, GRANTEE shall restore the surface of the ground within said Easement Area to its original condition to the extent that such restoration is reasonably possible.

I. Repair and Maintenance. GRANTEE shall at all times repair and maintain any facilities constructed or installed by GRANTEE over, upon, across, through or under the Easement Areas at the GRANTEE's sole cost and expense.

J. Termination. In the event GRANTEE shall at any time completely remove its well and related improvements, equipment and appurtenances from said Easement Areas or any portion thereof or shall for a period of two consecutive years cease to maintain or operate said well and related equipment and appurtenances upon said Easement Areas or any portion thereof, then the rights herein granted and the obligations herein imposed shall thereupon terminate, as to said Easement Areas or any portion thereof, without any action on the part of GRANTOR or GRANTEE, and except that nothing herein contained shall be deemed to be an abandonment of said rights and obligations insofar as they affect other portions of said Easement Areas, if any, which have not been abandoned; and further, in the event of such termination, GRANTEE shall, at the GRANTOR's request, at any time after said termination, execute such documents, in recordable form, as GRANTOR shall reasonably request for the purpose of clearing the easement granted hereby from the GRANTOR's title.
K. **Indemnification/Insurance.** Subject to the specific provisions and limitations set forth and provided for in those certain circumstances described in Paragraph B, GRANTEE shall indemnify GRANTOR for any and all loss or damage to GRANTOR’s Land or any crops, improvements or other property thereon caused by the negligence of GRANTEE or its agents, employees or independent contractors in the construction, maintenance or operation of the well, pumping facilities, storage tanks, power lines and conduits, roads, pipeline, major reticulation lines, and other equipment and appurtenances comprising a part of the water delivery system and shall indemnify, defend and hold harmless GRANTOR against all claims, liabilities, suits and actions (and all costs and expenses including reasonable attorneys’ fees) by whomsoever brought on account of loss of life and injuries to persons or property or any other matter whatsoever caused by or arising from the act or negligence of GRANTEE or its agents, employees or independent contractors in connection with GRANTEE’s exercise of its rights hereunder or use of the Easement Areas. GRANTEE agrees to maintain at all times a public liability insurance policy in the amount of not less than $1,000,000.00, with an insurer having a rating in Best’s Insurance Guide of B+ or better naming GRANTOR as a co-insured under such policy. Prior to the recordation hereof, GRANTEE will deliver to GRANTOR a certificate evidencing such insurance, together with a copy of the policy, and upon each renewal of such policy, will similarly provide GRANTOR with a certificate of insurance and a copy of the actual policy.

L. **Attorneys’ Fees.** Should suit be brought to enforce any provision of this Grant of Easement, or by reason of any claimed breach or default in the performance thereof by either party, the prevailing party in such suit shall be awarded reasonable attorneys’ fees and costs in the defense or prosecution thereof.

M. **Binding Agreement.** The covenants of the parties shall be binding upon and inure to the benefit of the parties herein and their respective successors and permitted assigns.

N. **Counterparts.** This Indenture may be executed in counterparts.
IN WITNESS WHEREOF, the parties hereto have caused this instrument to be duly executed as of the day and year first above written.

ONE KEAHOLE PARTNERS
By Pacific Northwest, Ltd.
   Its General Partner
   By ____________________
       Name:                 Its:                  President

MAC FARMS OF HAWAII, INC.
By ____________________
   Douglas D. Youngdahl
   Its President and Chief Executive Officer
   By ____________________
       Robert S. Donovan
       Its Secretary

"GRANTOR"

"GRANTEE"
IN WITNESS WHEREOF, the parties hereto have caused this instrument to be duly executed as of the day and year first above written.

ONE KEAHOLE PARTNERS
By Pacific Northwest, Ltd.
   Its General Partner

By ____________________
   Name:
   Its:

By ____________________
   Name:
   Its:

"GRANTOR"

MAC FARMS OF HAWAII, INC.

By ____________________
   Douglas D. Youngdahl
   Its President and Chief Executive Officer

By ____________________
   Robert S. Donovan
   Its Secretary

"GRANTEE"
STATE OF HAWAII

CITY AND COUNTY OF HONOLULU)

On this 12th day of December, 2002, before me personally appeared Jeffrey R. Strms, to me personally known/proved to me on the basis of satisfactory evidence, who, being by me duly sworn or affirmed, did say that such person executed the foregoing instrument as the free act and deed of such person, and if applicable in the capacity shown, having been duly authorized to execute such instrument in such capacity.

Notary Public, State of Hawaii

My commission expires: 4-10-2005
STATE OF CALIFORNIA

COUNTY OF Sacramento

On December 12, 2002, before me, personally appeared Douglas Young and Cary Young, personally known to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

[Signature of Notary]

NOTARY STAMP

******************************OPTIONAL SECTION******************************

CAPACITY SIGNED BY SIGNER:

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

[ ] INDIVIDUAL(S) CORPORATE OFFICER(S) [ ] PARTNER(S)
[ ] TRUSTEE(S) [ ] ATTORNEY-IN-FACT
[ ] GUARDIAN/CONSERVATOR [ ] SUBSCRIBING WITNESS
[ ] OTHER:

SIGNER IS REPRESENTING (NAME OF PERSON(S) OR ENTITY(IES)):

******************************OPTIONAL SECTION******************************

THIS CERTIFICATE MUST BE ATTACHED TO THE DOCUMENT DESCRIBED AT RIGHT:

Though the data requested here is not required by law, it could prevent fraudulent reattachment of this form.

[ ] NUMBER OF PAGES:

DATE OF DOCUMENT:

SIGNER(S) OTHER THAN NAMED ABOVE:

1436015.6.doc
EXHIBIT A

Lot 13-B and Royal Patent 6853, Land Commission Award 9971, Apana 30 to W.P. Leleiohoku, situated at Kapua, South Kona, Island of Hawaii, State of Hawaii and designated as Tax Map Key No. (3) 8-9-11: 1.
EXHIBIT B

EASEMENT "A"
FOR ACCESS, UTILITY, WATER PIPELINE
AND WELL SITE PURPOSES
AFFECTING LOT 13-B

Land situated on the Northeasterly side of Lot 13-B at Kapua, South Kona, Island
and County of Hawaii, State of Hawaii.

BEING portions of:
Lot 13-B; and
Royal Patent 6853, Land Commission Award 9971, Apana 30 to W. P. Leleiohoku.

Beginning at the Southeasterly corner of this easement, being also a point on the
Northeasterly side of Lot 13-B, said point of beginning bearing $152^\circ 27' \ 1,455.39$ feet from the
Southeasterly corner of Lot 13-B, the coordinates of said point of beginning referred to
Government Survey Triangulation Station “KAPUKAWAA” being $22,010.50$ feet South and
$17,535.04$ feet East and running by azimuths measured clockwise from True South:

1. $48^\circ 44'$
   486.61 feet along the remainders of Lot 13-B and Royal
   Patent 6853, Land Commission Award 9971,
   Apana 30 to W. P. Leleiohoku to a point;

2. $153^\circ 00'$
   178.38 feet along the remainders of Lot 13-B and Royal
   Patent 6853, Land Commission Award 9971,
   Apana 30 to W. P. Leleiohoku to a point;

3. $234^\circ 57'$
   475.09 feet along the remainders of Lot 13-B and Royal
   Patent 6853, Land Commission Award 9971,
   Apana 30 to W. P. Leleiohoku to a point;

4. $332^\circ 27'$
   125.00 feet along Lot 13-A-2 and along the remainder of
   Royal Patent 6853, Land Commission Award
   9971, Apana 30 to W. P. Leleiohoku to the point
   of beginning and containing an area of 1.641
   Acres.
EXHIBIT C

MAC FARMS LAND

LOT "A"

All of that certain parcel of land being portions of Lots 5 and 6, being also a portion of R. P. 6853, L.C. Aw. 9971, Apana 30 to W. P. Leleiohoku.

Situated at Kapua, South Kona, Island of Hawaii, Hawaii.

Beginning at the South corner of this parcel of land, being also the West corner of Lot B the coordinates of said point of beginning referred to Government Survey Triangulation Station "KAPUKAWAA" being 12,165.90 feet South and 11,856.35 feet East, thence running by azimuths measured clockwise from True South:

1. 152° 27' 1183.65 feet along Lot 7 along remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;

2. 258° 30' 200.51 feet along Lot 7 along remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;

3. 238° 00' 922.71 feet along Lot 7 along remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to Leleiohoku;

4. 335° 22' 1290.31 feet along Lot J along remainder of (Lots 5 and 6) R. P. 6853, L. C. Aw. 9971, Ap 30 to Leleiohoku;

5. 67° 18' 1050.73 feet along Lots J and B along remainder of (Lot 6) R.P. 6853, L. C. Aw. 9971, Ap. 30 to Leleiohoku to the point of beginning and containing an area of 29.926 acres.
LOT “B”

All of that certain parcel of land being portions of Lots 3 and 6, being also a portion of R.P. 6853, L.C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

Situated at Kapua, South Kona, Island of Hawaii, Hawaii.

Beginning at the West corner of this parcel land, being also the South corner of Lot A the coordinates of said point of beginning referred to Government Survey Triangulation Station “KAPUKAWAA” being 12,165.90 feet South and 11,856.35 feet East, thence running by azimuths measured clockwise from True South:

1. 247° 18' 832.23 feet along Lot A along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;

2. 331° 56' 157.00 feet along Lot J along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;

3. 243° 50' 409.50 feet along Lot J along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;

4. 334° 52' 803.50 feet along Lot J along remainder of (Lots 6 and 3) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

5. 62° 36' 308.00 feet along Lot J along remainder of (Lots 6 and 3) R.P. 6853, L. C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;


7. 59° 06' 922.55 feet along Lot C along remainder of (Lot 6) R. P. 6853, L. C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

8. 152° 27' 1512.00 feet along Lot 7 along remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku to the point of beginning and containing an area of 35.734 acres.
LOT "Ç"

All of that certain parcel of land being a portion of Lot 6, being also a portion of R.P. 6853, L.C. Aw. 9771, Apana 30 to W.P. Leleiohoku.

Situated at Kapua, South Kona, Island of Hawaii, Hawaii.

Beginning at the South corner of this parcel of land, being also the West corner of Lot D, the coordinates of said point of beginning referred to Government Survey Triangulation Station “KAPUKAWAA” being 14,359.15 feet South and 13,000.52 feet East, thence running by azimuths measured clockwise from True South:

| 1.   | 152° 27' | 961.75 feet along Lot 7 along remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku; |
| 2.   | 239° 06' | 922.55 feet along Lot B along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku; |
| 4.   | 240° 45' | 127.00 feet along Lot J along remainder of (Lot 6) R.P. 6853, L.P. 9971, Ap. 30 to W.P. Leleiohoku; |
| 5.   | 183° 33' | 47.00 feet along Lot J along remainder of (Lot 6) R.P. 6853, L.P. 9971, Ap. 30 to W.P. Leleiohoku; |
LOT “D”

All of that certain parcel of land being a portion of Lot 6, being also a portion of R.P. 6853, L.C. Aw. 9971, Apana 30 to W.P. Leleiohoku.

Situated at Kapua, South Kona, Island of Hawaii, Hawaii.

Beginning at the West corner of this parcel of land, being also the South corner of Lot C, the coordinates of said point of beginning referred to Government Survey Triangulation Station “KAPUKAWAA” being 14,359.15 feet South and 13,000.52 feet East, thence running by azimuths measured clockwise from True South:

1. 242° 52’ 1567.00 feet along Lots C and J along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

2. 332° 15’ 718.52 feet along Lot J along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku

3. 62° 52’ 1569.51 feet along Lot E along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

4. 152° 27’ 718.50 feet along Lot 7 along remainder of R.P. 6853, L.C Aw. 9971, Ap. 30 to W.P. Leleiohoku to the point of beginning and containing an area of 25.867 acres.
LOT “E”

All of that certain parcel of land being a portion of Lot 6, being also a portion of R.P. 6853, L.C. Aw. 9971, Apana 30 to W.P. Leleiohoku.

Situated at Kapua, South Kona, Island of Hawaii, Hawaii.

Beginning at the South corner of this parcel of land, being also the West corner of Lot F, the coordinates of said point of beginning referred to Government Survey Triangulation Station “KAPUKAWAA” being 15,629.65 feet South and 13,663.31 feet East, thence running by azimuths measured clockwise from True South:

1. 152° 27' 714.50 feet along Lot 7 along remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

2. 242° 52' 1569.51 feet along Lot D along remainder of (Lot 6) R.P. 6853, L.C. Aw. 99741, Ap. 30 to W.P. Leleiohoku;

3. 331° 20' 734.10 feet along Lot J along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

4. 63° 34' 1584.07 feet along Lots J and F along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku to the point of beginning and containing an area of 26.209 acres.
LOT "F"

All of the certain parcel of land being a portion of Lot 6, being also a portion of R.P. 6853, L.C. Aw. 9971, Apana 30 to W.P. Leleiohoku.

Situated at Kapua, South Kona, Island of Hawaii. Hawaii.

Beginning at the West corner of this parcel of land, being also the South corner of Lot E, the coordinates of said point of beginning referred to Government Survey Triangulation Station "KAPUKAWAA" being 15,629.65 feet South and 13,663.31 feet East, thence running by azimuths measured clockwise from True South:

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<th>Azimuth</th>
<th>Distance</th>
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<td>243° 34'</td>
<td>1523.32 feet</td>
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<tr>
<td>331° 13' 30&quot;</td>
<td>747.06 feet</td>
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<td>63° 45'</td>
<td>1539.40 feet</td>
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<tr>
<td>152° 27'</td>
<td>741.65 feet</td>
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1523.32 feet along Lot E along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

747.06 feet along Lot J along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

1539.40 feet along Lot G along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

LOT “G”

All of that certain parcel of land being a portion of Lot 6, being also a portion of R.P. 6853, L.C. Aw. 9971, Apana 30 to W.P. Leleiohoku.

Situated at Kapua, South Kona, Island of Hawaii, Hawaii.

Beginning at the South corner of this parcel of land, being also the West corner of Lot H, the coordinates of said point of beginning referred to Government Survey Triangulation Station “KAPUKA WAA” being 16,963.82 feet South and 14,359.32 feet East, thence running by azimuths measured clockwise from True South:

1. 152° 27’ 763.15 feet along Lot 7 along remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

2. 243° 45’ 1539.40 feet along Lot F along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

3. 331° 13’ 30" 756.91 feet along Lot J along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

LOT “H”

All of that certain parcel of land being a portion of Lot 6, being also a portion of R.P. 6853, L.C. Aw. 9971, Apana 30 to W.P. Leleiohoku.

Situated at Kapua, South Kona, Island of Hawaii, Hawaii.

Beginning at the West corner of this parcel of land, being also the South corner of Lot G, the coordinates of said point of beginning referred to Government Survey Triangulation Station “KAPUKAWAA” being 16,963.82 feet South and 14,359.32 feet East, thence running by azimuths measured clockwise from True South:

1. 243° 30'    1524.45 feet along Lot G along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

2. 328° 37'    464.20 feet along Lot J along remainder of (Lot 6) R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;


4. 152° 27'    482.50 feet along Lot 7 along remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku to the point of beginning and containing an area of 16.707 acres.
LOT "J"

All of that certain parcel of land being portions of Lots 2, 3, 5, 6, 9, 10, 12, 13-A-1, 13-A-2, 14 and 40-foot Road Reserve, being also portions of L.C. Aw. 10528 to Nahulu and R.P. 6853, L.C. Aw. 9971, Apana 30 to W.P. Leleihoiku and all of R.P. 4349, L.C. Aw. 7934 to Kapa, L.C. Aw. 7940 to Kaaua and R.P. 7992, L.C. Aw. 10,530 to Naoluulu.

Situated at Kapua, South Kona, Island of Hawaii, Hawaii.

Beginning at the North corner of this parcel of land, on the West side of Road Parcel "F" (Mamalahoa Highway), the coordinates of said point of beginning referred to Government Survey Triangulation Station "KAPUKAWAA" being 8,759.25 feet South and 15,095.87 feet East, thence running by azimuths measured clockwise from True South:

1. 348° 40' 558.58 feet along the West side of Road Parcel "F" (Mamalahoa Highway);

2. 338° 50' 398.85 feet along the West side of Road Parcel "F" (Mamalahoa Highway);

3. 317° 45' 293.70 feet along the West side of Road Parcel "F" (Mamalahoa Highway);

4. Thence along the West side of Road Parcel "F" (Mamalahoa Highway), on a curve to the right with a radius 155.00 feet, the azimuth and distance of the chord being: 337° 52' 30" 106.66 feet;

5. 358° 00' 60.50 feet along the West side of Road Parcel "F" (Mamalahoa Highway);

6. Thence along the West side of Road Parcel "F" (Mamalahoa Highway), on a curve to the left with a radius of 120.00 feet, the azimuth and distance of the chord being: 327° 30' 121.81 feet;

7. 297° 00' 85.50 feet along the West side of Road Parcel "F" (Mamalahoa Highway);

8. 319° 30' 396.88 feet along the West side of Road Parcel "F" (Mamalahoa Highway), along the remainder of L. C. Aw. 10,528 to Nahulu;

9. 67° 34' 418.14 feet along L.C. Aw. 7940-C to Keliimaole;
10. 320° 59' 40" 244.20 feet along L.C. Aw. 7940-C to Keliamaole;
11. 240° 59' 40" 122.10 feet along L.C. Aw. 7940-C to Keliamaole;
12. 253° 37' 40" 271.53 feet along L.C. Aw. 7940-C to Keliamaole;
13. Thence along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3)) on a curve to the left, with a radius 12,040.00 feet, the azimuth and distance of the chord being: 335° 46' 43.6" 63.07 feet;
14. 49° 09' 40" 509.29 feet along L.C. Aw. 10,380 to Naluhielua;
15. 337° 29' 40" 20.00 feet along L.C. Aw. 10,380 to Naluhielua;
16. 335° 11' 111.60 feet along L.C. Aw. 10,380 to Naluhielua;
17. 67° 30' 488.80 feet along L.C. Aw. 10,527, Ap. 2 to Namaielu;
18. 80° 13' 179.10 feet along L.C. Aw. 10,527, Ap. 2 to Namaielu;
19. 69° 35' 260.46 feet along L.C. Aw. 10,527, to Ap 2 to Namaielu;
20. 59° 37' 275.26 feet along R.P. 3677, L.C. Aw. 7927 to Kama;
21. 67° 29' 40" 283.80 feet along R.P. 3677, L.C. Aw. 7927 to Kama;
22. 73° 59' 40" 322.10 feet along R.P. 3677, L.C. Aw. 7927 to Kama;
23. 348° 59' 40" 151.80 feet along R.P. 3677, L.C. Aw. 7927 to Kama;
24. 247° 44' 40" 336.60 feet along R.P. 3677, L.C. Aw. 7927 to Kama;
25. 256° 59' 40" 583.40 feet along R.P. 3677, L.C. Aw. 7927 to Kama;
26. 256° 30' 30" 420.80 feet along L.C. Aw. 10,527, Ap. 2 to Namaielu;
27. 240° 25' 40" 531.50 feet along L.C. Aw. 10,527, Ap. 2 to Namaielu;
28. 161° 44' 40" 200.00 feet along L.C. Aw. 10,527, Ap. 2 to Namaielu;
29. 67° 19' 39.34 feet along L.C. Aw. 10,527, Ap. 2 to Namaielu;
30. 226° 14' 40" 303.46 feet along L.C. Aw. 10,380 to Naluhielua;

31. 235° 44' 40" 205.79 feet along L.C. Aw. 10,380 to Naluhielua;

32. Thence along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3)), on a curve to the left with a radius of 12,040.00 feet, the azimuth and distance of the chord being:
   333° 47' 45.4"  490.40 feet;

33. 62° 37' 44.36" 10.00 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3));

34. Thence along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3)), on a curve to the left with a radius of 12,050.00 feet, the azimuth and distance of the chord being:
   332° 23' 28.4"  100.00 feet;

35. 242° 09' 12.6" 10.00 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3));

36. Thence along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3)), on a curve to the left with a radius of 12,040.00 feet, the azimuth and distance of the chord being:
   331° 57' 42.7"  80.54 feet;

37. Thence along the West side of Road Parcel "E" (Mamalahoa Highway), on a curve to the left with a radius of 50.00 feet, the azimuth and distance of the chord being:
   28° 20' 15"  54.96 feet;

38. 355° 00' 76.62 feet along the West side of Road Parcel "E" (Mamalahoa Highway);

39. Thence along the West side of Road Parcel "E" (Mamalahoa Highway), on a curve to the left with a radius of 270.00 feet, the azimuth and distance of the chord being:
   347° 20' 72.04 feet;

40. 339° 40' 143.25 feet along the West side of Road Parcel "E" (Mamalahoa Highway);

41. 334° 30' 124.15 feet along the West side of Road Parcel "E" (Mamalahoa Highway);
42. Thence along the West side of Road Parcel “E” (Mamalahoa Highway), on a curve to the right with a radius of 320.00 feet, the azimuth and distance of the chord being:
     325°  05'  104.71 feet;

43. 315°  40'  102.21 feet along the West side of Road Parcel “E” (Mamalahoa Highway);

44. Thence along the West side of Road Parcel “E” (Mamalahoa Highway), on a curve to the right with a radius of 90.00 feet, the azimuth and distance of the chord being:
     336°  35'  64.26 feet;

45. 357°  30'  95.30 feet along the West side of Road Parcel “E” (Mamalahoa Highway);

46. Thence along the West side of Road Parcel “E” (Mamalahoa Highway), on a curve to the left with a radius of 170.00 feet, the azimuth and distance of the chord being:
     342°  20'  88.95 feet;

47. 327°  10'  375.30 feet along the West side of Road Parcel “E” (Mamalahoa Highway);

48. 321°  40'  362.80 feet along the West side of Road Parcel “E” (Mamalahoa Highway);

49. 328°  20'  227.84 feet along the West side of Road Parcel “E” (Mamalahoa Highway);

50. Thence along the West side of Road Parcel “E” (Mamalahoa Highway), on a curve to the left with a radius of 300.00 feet, the azimuth and distance of the chord being:
     317°  25'  113.63 feet;

51. 306°  30'  163.21 feet along the West side of Road Parcel “E” (Mamalahoa Highway);

52. Thence along the West side of Road Parcel “E” (Mamalahoa Highway), on a curve to the right a radius of 180.00 feet, the azimuth and distance of the chord being:
     313°  00'  40.75 feet;

53. 319°  30'  242.85 feet along the West side of Road Parcel “E”
54. 321° 35' 700.35 feet along the West side of Road Parcel “E” (Mamalahoa Highway);

55. 317° 30' 177.02 feet along the West side of Road Parcel “E” (Mamalahoa Highway);

56. Thence along the West side of Road Parcel “E” (Mamalahoa Highway), on a curve to the left with a radius of 220.00 feet, the azimuth and distance of the chord being: 306° 00' 87.72 feet;

57. 294° 30' 144.39 feet along the West side of Road Parcel “E” (Mamalahoa Highway);

58. Thence along the West side of Road Parcel “E” (Mamalahoa Highway), on the curve to the left with a radius of 79.12 feet, the azimuth and distance of the chord being: 259° 51' 89.96 feet;

59. 315° 07' 182.02 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3));

60. 45° 07' 35.00 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3));

61. 315° 07' 250.00 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3));

62. 225° 07' 35.00 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3));

63. 315° 07' 375.00 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3));

64. 45° 07' 30.00 feet along the West side of Hawaii Belt Road (F.A. P. No. BF-011-1(3) );

65. 315° 07' 9.41 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3));
66. Thence along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3)), on a curve to the right with a radius of 11,930.00 feet, the azimuth and distance of the chord being: 315° 50' 03.4" 298.83 feet;

67.  226° 33' 06.8" 30.00 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3));

68. Thence along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3)), on a curve to the right with a radius of 11,960.00 feet, the azimuth and distance of the chord being: 317° 00' 36.5" 191.31 feet;

69. Thence along the West side of Lot "K", on a curve to the left with a radius of 100.00 feet, the azimuth and distance of the chord being: 27° 28' 71.35 feet;

70.  6° 34' 30.00 feet along the West side of Lot "K";

71. Thence along the West side of Lot "K", on a curve to the left with radius of 80.00 feet, the azimuth and distance of the chord being: 330° 10' 94.95 feet;

72.  293° 46' 40.00 feet along the West side of Lot "K";

73. Thence along the West side of Lot "K", on a curve to the right with a radius of 40.00 feet, the azimuth and distance of the chord being: 312° 23' 25.54 feet;

74.  331° 00' 788.29 feet along the West side of Lot "K";

75.  324° 47' 45" 1127.07 feet along the West side of Lot "K";

76.  316° 03' 30" 347.81 feet along the West side of Lot "K";

77.  337° 01' 15" 297.87 feet along the West side of Lot "K";

78.  335° 32' 50" 363.57 feet along the West side of Lot "K";

79.  330° 29' 15" 336.22 feet along the West side of Lot "K";

80.  311° 00' 10" 466.96 feet along the West side of Lot "K";

81.  331° 03' 20" 410.73 feet along the West side of Lot "K";
82. 319° 15' 314.92 feet along the West side of Lot “K”;
83. 330° 55' 1093.21 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1(3));
84. 53° 19' 5427.64 feet along the Government Land of Kaulanamauna;
85. 152° 27' 4528.93 feet along Lot 13-B along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
86. 62° 27' 1524.61 feet along Lot 13-B along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
87. 152° 27' 1590.79 feet along Lot D-1 along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
88. 242° 27' 1043.15 feet along Lot 7 along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
89. 152° 27' 796.48 feet along Lot 7, along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
90. 242° 46' 1555.25 feet along Lot H along the remainder of R. P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;
91. 148° 37' 464.20 feet along Lot H along the remainder of R. P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;
92. 243° 30' 31.00 feet along Lot G along the remainder of R. P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;
93. 151° 13' 30" 1503.97 feet along Lots G and F along the remainder of R. P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;
94. 243° 34'  60.75 feet along Lot E along the remainder of R.P.  
6853, L.C. Aw. 9971, Ap. 30 to W.P.  
Leleiohoku;

95. 151° 20'  734.10 feet along Lot E along the remainder of R.P.  
6853, L.C. Aw. 9971, Ap. 30 to W.P.  
Leleiohoku;

96. 152° 15'  718.52 feet along Lot D along the remainder of R.P.  
6853, L.C. Aw. 9971, Ap. 30 to W.P.  
Leleiohoku;

97. 62° 52'  86.76 feet along Lot D along the remainder of R.P.  
6853, L.C. Aw. 9971, Ap. 30 to W.P.  
Leleiohoku;

98. 149° 09'  757.69 feet along Lot C along the remainder of R.P.  
6853, L.C. Aw. 9971, Ap. 30 to W.P.  
Leleiohoku;

99. 73° 24'  357.50 feet along Lot C along the remainder of R.P.  
6853, L.C. Aw. 9971, Ap. 30 to W.P.  
Leleiohoku;

100. 3° 33'  47.00 feet along Lot C along the remainder of R.P.  
6853, L.C. Aw. 9971, Ap. 30 to W.P.  
Leleiohoku;

101. 60° 45'  127.00 feet along Lot C along the remainder of R.P.  
6853, L.C. Aw. 9971, Ap. 30 to W.P.  
Leleiohoku;

102. 149° 20'  665.95 feet along Lots C and B along the remainder of  
Leleiohoku;

103. 242° 36'  308.00 feet along Lot B along the remainder of R.P.  
6853, L.C. Aw. 9971, Ap. 30 to W.P.  
Leleiohoku;

104. 154° 52'  803.50 feet along Lot B along the remainder of R.P.  
6853, L.C. Aw. 9971, Ap. 30 to W.P.  
Leleiohoku;
105. 63° 50' 409.50 feet along Lot B along the remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

106. 151° 56' 157.00 feet along Lot B along the remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

107. 247° 18' 218.50 feet along Lot A along the remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

108. 155° 22' 1290.31 feet along Lot A along the remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

109. 238° 00' 247.29 feet along Lot 7 along the remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

110. 146° 25' 30" 155.00 feet along Lot 7 along the remainder of R.P. 6853, L.C. Aw. 9971, Ap. 30 to W.P. Leleiohoku;

111. 246° 20' 50" 906.73 feet along Grant 3712, Lot B to J. M. Monsarrat;

112. 225° 41' 40" 1247.14 feet along Grant 3712, Lot B to J. M. Monsarrat;

113. 250° 52' 40" 1017.10 feet along Government Land of Honomalino to the point of beginning and containing an area of 1346.546 acres.
LOT "K"

(ROADWAY PURPOSES)

All of that certain parcel of land being all of Road Parcels "B", "C", and "D" (Mamalahoa Highway), and Lot 19 being also a portion of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku.

Situated at Kapua, South Kona, Island of Hawaii, Hawaii

Beginning at the East corner of this parcel of land, being also the South corner of Lot L and on the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3)), the coordinates of said point of beginning referred to Government Survey Triangulation Station "KAPUKAWAA" being 18,458.97 feet South and 21,648.42 feet East, thence running by azimuths measured clockwise from True South:

1. 330° 55'  83.24 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3));
2. 240° 55'  20.00 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3));
3. 330° 55'  664.87 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3));
4. 139° 15'  314.92 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;
5. 151° 03' 20"  410.73 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;
6. 131° 00' 10"  466.96 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;
7. 150° 29' 15"  336.22 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;
8. 155° 32' 50"  363.57 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;
9. 157° 01' 15"  297.87 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;
10. 136° 03' 30"
347.81 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

11. 144° 47' 45"
1127.07 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

12. 151° 00'
788.29 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

13. Thence along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku, on a curve to the left with a radius of 40.00 feet, the azimuth and distance of the chord being: 132° 23' 25.54 feet;

14. 113° 46'
40.00 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

15. Thence along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku, on a curve to the right with a radius of 80.00 feet, the azimuth and distance of the chord being: 150° 10' 94.95 feet;

16. 186° 34'
30.00 feet along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

17. Thence along Lot J along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku, on a curve to the right with a radius of 100.00 feet, the azimuth and distance of the chord being: 207° 28' 71.35 feet;

18. Thence along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3)), on a curve to the right with a radius of 100.00 feet, the azimuth and distance of the chord being: 317° 35' 17.4" 50.01 feet;

Thence along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku, on a curve to the left with a radius of 50.00 feet, the azimuth and distance of the chord being: 27° 51' 38" 36.32 feet;

20. 6° 34'
30.00 feet along Lot L, along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;
21. Thence along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W.P. Leleiohoku, on a curve to the left with a radius of 30.00 feet, the azimuth and distance of the chord being: 330° 10' 35.61 feet;

22. 293° 46' 40.00 feet along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

23. Thence along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku on a curve to the right with a radius of 90.00 feet, the azimuth and distance of the chord being: 312° 23' 57.46 feet;

24. 331° 00' 785.55 feet along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

25. 324° 47' 45" 1120.57 feet along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

26. 316° 03' 30" 353.24 feet along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

27. 337° 01' 15" 306.48 feet along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

28. 335° 32' 50" 360.72 feet along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

29. 330° 29' 15" 325.43 feet along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku;

30. 311° 00' 10" 445.70 feet along Lot L along the remainder of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku to the point of beginning and containing an area of 5.344 acres.
LOT "L"

All of that certain parcel of land being all of Lots 14 and 18 and a portion of Lot 10, being also a portion of R. P. 6853, L. C. Aw. 9971, Apana 30 to W. P. Leleiohoku.

Situated at Kapua, South Kona, Island of Hawaii, Hawaii.

Beginning at the South corner of this parcel of land, being also the East corner of Lot K, on the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3)), the coordinates of said point of beginning referred to Government Survey Triangulation Station "KAPUKAWAA" being 18,458.97 feet South and 21,648.42 feet East, thence running by azimuths measured clockwise from True South:

1. 131° 00' 10" 445.70 feet along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
2. 150° 29' 15" 325.43 feet along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
3. 155° 32' 50" 360.72 feet along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
4. 157° 01' 15" 306.48 feet along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
5. 136° 03' 30" 353.24 feet along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
6. 144° 47' 45" 1120.57 feet along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
7. 151° 00' 785.55 feet along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
8. Thence along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku, on a curve to the left with a radius of 90.00 feet, the azimuth and distance of the chord being: 132° 23' 57.46 feet;
9. 113° 46' 40.00 feet along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;
10. Thence along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku on a curve to the right with a radius of 30.00 feet, the azimuth and distance of the chord being: $150^\circ \ 10' \ 35.61$ feet;

11. $186^\circ \ 34'$ 30.00 feet along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku;

12. Thence along Lot K along the remainder of R. P. 6853, L. C. Aw. 9971, Ap. 30 to W. P. Leleiohoku, on a curve to the right with a radius of 50.00 feet, the azimuth and distance of the chord being:

   $207^\circ \ 51' \ 38'' \ 36.32$ feet;

13. Thence along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3)), on a curve to the right with a radius of 11,960.00 feet, the azimuth and distance of the chord being:

   $324^\circ \ 18' \ 44.32'' \ 2751.10$ feet;

14. $330^\circ \ 55'$ 966.45 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3));

15. $60^\circ \ 55'$ 20.00 feet along the West side of Hawaii Belt Road (F.A.P. No. BF-011-1 (3));

16. $240^\circ \ 55'$ 116.76 feet along Hawaii Belt Road (F.A.P. No. BF-011-1 (3)) to the point of beginning and containing an area of 12.886 acres.
To: Ron Peterson  
Company:  
Fax Number: 415 541-9366  
Phone Number: 415 995-5005  
From: Neal D. Fujii  
Date: March 25, 2003  
Pages Including Header: 4  
Subject: Mac Farms Well  

Notes/Comments:  
Hi Ron,  

I am transmitting the correspondence letters we spoke about. We don't have a copy of the easement agreement referred to in the April 6, 1988 letter addressed to Hillary Brown from Manabu Tagomori. Call me if you have more questions. You may also contact Ryan Imata (808 587-0264), who handles well permitting on the island of Hawaii.
April 6, 1988

Mr. Hilary Brown
Orchard Manager
MacFarms of Hawaii
Box 25 Star Route
Captain Cook, Hawaii 96704

Dear Mr. Brown:

Thank you for your letter of March 15, 1988, regarding the well site changes to the MacFarms of Hawaii drilling permits. We have modified our records to incorporate the changes as follows:

State Well No. 0952-01 (MacFarms #1): Tax Map Key changed to 8-9-11:11

State Well No. 0852-01 (MacFarms #2): Tax Map Key changed to 8-9-11:12

State Well No. 0852-02 (MacFarms #3): Tax Map Key changed to 8-9-11:12

There are no changes in the remaining two well permits. Please replace your existing well location map with the enclosed corrected map.

Concerning State Well No. 0751-01 (MacFarms #5), please send us a copy of the easement agreement with Farms of Kapua, Ltd. for our information and files.

Please notify us prior to start of drilling of each well.

Sincerely,

MANABU TAGOMORI
Deputy for Water Resource Management

ES:ko
Enc.
cc: USGS
Dept. of Health, Drinking Water Program
Ground Water Protection Program
Hawaii DWS
March 15, 1988

Department of Land &
Natural Resources
Attn: Mr. Edward Sakoda
P. O. Box 621
Honolulu, HI 96809

Dear Mr. Sakoda:

Re: MacFarms of Hawaii Drilling Permits

As I mentioned to you in a recent telephone conversation, we need to make some changes to our recently approved well drilling permits.

To aid my explanation of the problem, attached are two maps. Exhibit #1 shows the location of the approved sites and Exhibit #2 shows the new preferred sites.

Our most pressing problem exists with Well #5. This well site is actually located on TMK 8-9-11-1. We had quoted on our application form TMK 8-9-11-03. Please refer to the attached maps.

Also to be resolved with this issue is the fact that TMK 8-9-11-1 is owned by Farms of Kapua Ltd., with whom we have an easement agreement. Could you please advise what type of documentation we now need to support this change?

Could you please let me know as soon as possible where we stand with this issue.

Yours sincerely,

Hilary Brown
Orchard Manager

wb

attachments (2)
WELL DRILLING PERMIT
for
MacFarms of Hawaii Well No. 1
State Well No. 0952-01
Kapua, South Kona, Hawaii

TO: Puu Hinahina Water Company
   Star Route, Box 25
   Captain Cook, Hawaii 96704

In accordance with Chapter 166 of Title 13, "Rules for the Control of Ground Water Use in the State of Hawaii", your application to drill State Well No. 0952-01 for agricultural use at Tax Map Key: 8-9-11:10 is approved subject to the following conditions:

1. 100 feet of cement grout shall be used instead of the 10 feet indicated on the proposed section of well.

2. A Driller's Well Completion Report (enclosed) shall be submitted to the Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96809, within 60 days after completion of the well.

3. Water level elevation, salinity and pumping test data shall be submitted within 60 days after testing of the well.

4. Reports of pumpage shall be submitted monthly after the well is put into production.

5. An "as-built" drawing of the well and a map showing the exact location of the well shall be submitted upon completion of the well.

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

7. 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.

Date of Issuance

Enc. (Driller's Report form)
cc: USGS
   Department of Health,
   Drinking Water Program
   Ground Water Protection Program
   Hawaii Dept. of Water Supply
Fax

To: DLNR – Attention: Ryan Imada
From: Hilary Brown

Fax: (808) 587-0219
Phone: (808) 587-0225

Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Date: 7/19/00

Included along with this cover sheet is a copy of the correspondence forwarded to your office on May 24th 1989 and October 16th. As has been discussed in a number of telephone conversations only one well was drilled even though permits for five wells were approved by DLNR.

The well drilled was actually 0751-01 (#5). For reasons unknown to me the well became known as 0952-01 (#1).

Included in this fax you will find:-

- Chester Lao's "Evaluation of Testing of Macfarms Well #1"
- Copy of completed form 8810-1.
- Yield/draw-down data.
- Long term—72 hour test pump data.
- Chloride test results.
• Water analysis data.
• Design plans well #1 – as built.
• Copy of the letter from Manabu Tagomori April 6th 1988 indicating the change of well numbering.
• Copy of letter from Macfarms to Mr Tagomori indicating our intent to commence drilling Well #1.
• Copy of the well drilling contract.

Because of the ongoing drought and its negative effect on the productivity and viability of our orchard and business, we have no choice but to further develop underground water resources. To that end we are very concerned about delays in the well drilling permit process.

I will forward you a hard copy of this correspondence. In the meantime could you please let me know when we could expect to receive well drilling permits.

Sincerely,

Hilary Brown

Orchard Manager
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<th>DATE: 10/26</th>
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<td>Kunimura, I.</td>
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</table>

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

**FOR:**
- Approval
- Signature
- Information

---

**Susan from:**
- Send out 1st 2 pages. 2nd page 3rd & 4th pages are compilation of my data for Roy's reference. Subsequent pages are from MacFarms.
- Is well #1 actually well #3??
- MacFarms may have drilled another well #5 when we assumed they were drilling well #7.
Mr. Hilary Brown
MacFarms of Hawaii Inc.
89-406 Mamalahoa Highway
Captain Cook, HI 96704

Dear Mr. Brown:

MacFarms Well 1, Well No. 0952-01

Thank you for your letter dated October 16, 1998 to clarify issues with your well. Our records indicate that on June 15, 1989, Rick Vidgen of MacFarms informed Ed Sakoda of Commission staff via telephone that Wells 2 through 5 (2 = 0852-01, 3 = 0852-02, 4 = 0852-03, 5 = 0751-01) were no longer planned to be drilled. Nonetheless, applications for Wells 2 (renumbered 0950-01) and 3 (renumbered 1050-01) were resubmitted and Well Construction Permits were issued for those wells in August of 1993. To date, we have not received Well Completion Reports for any of these wells.

Please indicate which of these wells have been drilled. If Wells 4 and 5 were drilled, you must submit after-the-fact Well Construction Permit applications. Furthermore, if Wells 2 and 3 were completed after the expiration dates of the Well Construction Permits, after-the-fact Well Construction Permits must be submitted for these wells as well.

For Well 1 (Well No. 0952-01), which we understand to be drilled, as well as any other wells that were drilled, we require the following outstanding information:

1. Please complete the Well Completion Report (attached for your use).
2. Please submit a more legible copy of the Pump Test data.
3. Please submit a map showing the actual locations of all wells drilled.

If you have any questions, please contact Ryan Imata at 587-0255 or toll-free at 974-4000 (Hawaii), extension 70255.

Sincerely,

TIMOTHY E. JOHNS
Deputy Director

RI:ss
Attachment
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<tr>
<th>Date</th>
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<th>WCP applied</th>
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<th>WCR received</th>
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<td>Jan-88</td>
<td>Application received for 5 wells</td>
<td>All five (but can't find all applications - only found for well 1)</td>
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<tr>
<td>Mar-88</td>
<td>Permit issued for Well No 1 (0952-01)</td>
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<td>1</td>
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<td>Mar-88</td>
<td>Mac Farm requests change in well sites, but land that original no. 0751-01 (Well 5) does not belong to them</td>
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<td>Apr-88</td>
<td>DOWALD acknowledges location changes, new well nos issued (0852-01 -&gt; 0950-01 = Well 2) and (0852-02 -&gt; 1050-01 = Well 3), we request copy of easement agreement for well 5.</td>
<td></td>
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<td>May-89</td>
<td>MacFarms Sends in info on well 1 for registration program (6 items - not all that's required)</td>
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<tr>
<td>Jul-89</td>
<td>Memo from Ed saying that MacFarms no longer plans to drill wells 2 - 5</td>
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<td>Aug-92</td>
<td>Revocation of Permits for Wells 2, 3 and 4, and WCR requested</td>
<td>-2, -3, -4</td>
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<tr>
<td>Sep-92</td>
<td>MacFarms requests continuation of permits</td>
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<tr>
<td>Jan-93</td>
<td>cwrm reasserts revocation</td>
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<tr>
<td>Feb-93</td>
<td>MacFarms submits Well Con App for Wells 2 &amp; 3</td>
<td>2, 3</td>
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<td>Mar-93</td>
<td>cwrm sends back app for signatures</td>
<td></td>
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<td>May-93</td>
<td>cwrm acknowledges receipt of application for 2 &amp; 3</td>
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<td>Aug-93</td>
<td>Well Construction Permits issued for Wells 2 &amp; 3</td>
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<td>Aug-93</td>
<td>Signed WCP received for Well 3 (based on signed permit in file)</td>
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<tr>
<td>Jun-94</td>
<td>MacFarms requests status of Well Construction Permit for Well 2</td>
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<tr>
<td>Jul-94</td>
<td>cwrm informs MacFarms that well permits for 2 &amp; 3 issued</td>
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<tr>
<td>Jun-98</td>
<td>cwrm requests WUR and WCR for Well 1</td>
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<tr>
<td>Oct-98</td>
<td>MacFarms resubmits info from registration (May-89) and claims driller submitted drillers log (not attached), Tom Nance says that Well 1 is plotted 1.5 miles north of actual location, MacFarms claims to have sent letter to DOWALD in June 88 informing us that they're proceeding with Drilling Well 5 (which is attached to this letter but not in file)</td>
<td></td>
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</tbody>
</table>
October 16th 1998

Mr Neal Fujii,
Department of Land and Natural Resources,
Commission of Water Resource Management,
P.O. Box 621,
HONOLULU, HI. 96809

Subject:- Well Completion Report.

Dear Mr Fujii,

In a fax you sent me on June 17th 1998, you made mention that DLNR had not received a Well Completion Report for Well #1 (0952-01) which was completed in May 1989.

Recently, while I was reviewing old files I found a copy of a letter dated May 24th 1989. I have attached a copy of this letter which addressed the subject of registration of well #1. As you will note, accompanying the letter are the following attachments—form 8810, yield/draw down data, long term -72 hour test pump data, chloride analysis data and design plans well #1 "as built". The driller's log was unavailable at that time but was to be submitted to you by the driller as per our contract terms with Paul Frandsen. Since this letter was clearly addressed to your office we have assumed that your office received it.

While the matter of well registration is cause for concern, Tom Nance who we are currently employing as a consultant, has informed me that DLNR has the location of Well #1 (0952-01) some 1.5 miles to the north of its actual position. In referring to my files I have found a letter that I sent to Mr Tagomori on June 29th 1988 in which I clearly state that we are about to proceed with the drilling of well#5 —(see attached) which is well permit #0751-01.

To my knowledge we have not received a visit from personnel in the Water Resource Management department to inspect the well since its completion. With the unresolved issue of the well registration, the incorrect location of the well in your records and the continued use of an incorrect well permit number (well number), there appears to be a good reason for a meeting of the minds in the very near future.

Please call me when you receive this letter and attachments.

Sincerely,

Hilary Brown
Orchard Manager
May 24, 1989

Department of Land and Natural Resources
Division of Water Resource Management
P. O. Box 373
Honolulu, HI 96809

RE: Registration of Wells and Stream Diversion and Declaration of Water Use

Dear Sirs:

Please find the enclosed items:

1) Form 8810-1
2) Yield/Drawdown Data
3) Long Term - 72-hour Test Pump Data
4) Chloride Test Results
5) Water Analysis Data
6) Design Plans Well 1 "As Built"

The Drillers Log is unavailable, as are plans for well pump type, power, pump capacity, etc.

I hope you find this information useful. If you have any question, please feel free to contact me at (808) 328-2435. Thank you for your cooperation.

Respectfully,

Mark K. Crawford
Asst. Orchard Manager

Enclosures
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.: N/A
WELL NAME OR DESIGNATION: Well No. 1
SOURCE OR STATION NAME (For a battery of wells): Phase II - MacFarms Irrigation

A. WELL OPERATOR
Firm name: MacFarms Hawaii
Contact person: Mark K. Crawford
Address: Box 25, Star Route Captain Cook, HI
Zip: 96704 Phone: (808)328-2435

B. OWNER OF WELL SITE
Firm name: MacFarms Hawaii
Contact person: Mark K. Crawford
Address: Box 25, Star Route Captain Cook, HI
Zip: 96704 Phone: (808)328-2435

C. WELL LOCATION
Tax Map Key: B-9-13 Town, Place, District: Kapua, South Kona
Attach USGS "Quad" map (scale 1:24,000), tax map, or other map showing the well location. Map unavailable at this time.

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): 1143 ft. Reference point (used to measure depth to water):
Elevation: N/A ft.
Description:

Depth to water (below reference point): 1144 ft. Maximum recorded chloride: 700 ppm
Minimum recorded chloride: 85 ppm
Maximum chloride in 1987: N/A ppm

E. INSTALLED PUMP DATA - Not installed under design consideration
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: N/A

... (continued over)
F. DECLARATION OF WATER USE

NOTE: The purpose of the Declaration of Water Use is to obtain information necessary for the management of the State's water resources. The Declaration does not confer a legal right to water or its use.

Water use data are recorded:  □ Daily  □ Weekly  □ Monthly  □ Other (Describe):

Method of measurement:  □ Flow Meter  □ Orifice  □ Other (Describe):

Quantity of Use (Report metered or estimated monthly water use from the well described on the reverse side of this form, for the calendar years 1983 through 1987. For a battery of wells which are not individually metered, but which are connected to a single meter or other measuring device, report total use from the battery):

WATER USE, IN GALLONS x 1000

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Minimum day’s use: N/A gallons  Maximum day’s use: N/A gallons

Typical times of usage: ____________________________________________

Type of Use (Check all category boxes that apply and provide additional information as indicated):

☐ Municipal (including resorts, hotels, businesses)
☐ Domestic (systems serving 25 people or less)
☐ Irrigation
☐ Industrial
☐ Military
☐ Other

Additional Information

Number of service connections: ______________________________________

Acres Irrigated: 950

Crop(s):  □ Sugar  □ Pineapple  □ Other (specify): Macadamia

Non-Crop: □ Landscape  □ Golf Course  □ Other (specify):

Method: □ Drip  □ Furrow  □ Sprinkler

☐ Cooling  □ Manufacturing  □ Mill  □ Other (specify):

Specify (livestock, aquaculture, etc.): ______________________________________

I declare that the contents of the above Declaration of Water Use are, to the best of my knowledge and belief, true, correct, and complete.

Water User’s Signature: ________________________________ Date: 5/24/89

Printed Name: Mark K. Crawford

Firm or Title (Well Operator, etc.): MacFarms Hawaii
PLEASE NOTE AS BUILT SPECS

114-3
ELEV +220 FT. M.S.L.

104-
ELEV +200 M.S.L.

2A''
20'' DRILLED HOLE

50-
ELEV 5.0' M.S.L.

00-
ELEV 0.0 M.S.L.

-35.0' M.S.L.

PACAM ENGINEERING, INC.
HERMISTON, OREGON 97838

PUU HINAHINA WATER CO.
WELL NO. 1
May 18, 1989

Chloride Test Results

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Mark Crawford

wb
LABORATORY ANALYSIS REPORT (1)

TO: MACFARMS OF HAWAII
ATTN: MR. HILLARY BOWN
ADDRESS: STAR ROUTE 25
CAPTAIN COOK, HAWAII 96704
SAMPLES OF: Well Water
SAMPLED BY: Client
SAMPLING DATE: 05-10-89
RECEIPT DATE: 05-11-89

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[Signature]
**LABORATORY ANALYSIS REPORT (1)**

**TO:** MACFARMS OF HAWAII  
**ADDRESS:** STAR ROUTE 25  
**SAMPLES OF:** Well Water  
**SAMPLED BY:** Mark Crawford  
**DATE:** 05-16-89  
**RECEIPT DATE:** 05-16-89  

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GENERAL CONDITIONS AND SPECIFICATIONS

dated this ___ day of ____ , 1988

SECTION 1-1 - GENERAL

Section 1-1.1 Scope of Work.

The work to be done hereunder includes the furnishing of all labor, material, transportation; tools, supplies, plant, equipment and appurtenances, unless hereinafter specifically excepted, necessary for the complete and satisfactory construction, disinfection, and testing of the proposed water supply well described under Section 1-1.7 below.

Section 1-1.2 Permits, Certificates, Laws, and Ordinances.

The CONTRACTOR shall at his own expense, procure all permits, certificates, and licenses required of him by law for the execution of the work. CONTRACTOR shall comply with all federal, state or local laws, ordinances, or rules and regulations relating to the performance of the work.

Section 1-1.3 Location.

The well to be constructed hereunder is to be located on land owned by Lands of Kapaa situated makai of the Mamalahoa Highway in the Kapua district of the Island of Hawaii, as is generally described on the map marked as Exhibit "A" and attached to this document.

Section 1-1.4 Local Conditions.

A log of a well drilled and tested by the State of Hawaii (the Okoe Well) approximately 2 miles away is available. No other hydrogeologic information in the vicinity is known to exist. This information is provided to CONTRACTOR for informational purposes only and is in no way a representation by OWNER of the sub-surface conditions of the location where the subject work is to be performed. CONTRACTOR will undertake its own personal investigation to satisfy itself of all local conditions.

Section 1-1.5 Boundaries of Work.

The OWNER shall provide adequate land or rights-of-way for the well specified in this contract and make reasonable suitable provisions for ingress and egress, and the CONTRACTOR

"OWNER"

"CONTRACTOR"
shall not enter on or occupy with men, tools, equipment or materials, any ground outside the property of the OWNER without the written consent of the owner of such ground. Other contractors and employees or agents of the OWNER may for all necessary purposes enter upon the work and premises used by the CONTRACTOR, and the CONTRACTOR shall conduct his work so as not to impede unnecessarily any work being done by others on or adjacent to the site.

Section 1-1.6 Protection of the Site:

Excepting as otherwise provided herein, the CONTRACTOR shall protect all structures, trees and shrubbery during the progress of his work; shall remove from the site debris and unused materials; and shall, upon completion of the work, restore the site as nearly as possible to its original condition, including the replacement, at the CONTRACTOR'S sole expense, of any facility which has been damaged beyond restoration to its original condition, or destroyed. Water pumped from the well shall be conducted to a place where it will be possible to dispose of the water without damage to property or the creation of a nuisance.

Section 1-1.7 General Description of the Well:

The completed well is to consist of the following principal items:

1. A 16-inch diameter cased hole approximately 1,115 feet deep.

2. A 16-inch full flo louvered screen, if available, or a similar type screen which is approved in writing by ENGINEER approximately 40 feet long, capped at the bottom.

3. Cement grout or crushed rock in the annulus space between the 16-inch casing and the outer casing or hole.

4. A 5-hour pump test for yield and drawdown and long term 72-hour continuous uninterrupted pump test.

Section 1-1.8 Facilities or Material to be Furnished by OWNER.

The OWNER shall cause water to be available to the CONTRACTOR at the site of the work, without charge and in a quantity reasonably adequate to service CONTRACTOR's needs.

"OWNER"

"CONTRACTOR"
The water will be provided to CONTRACTOR by means of hydrant located in an area near the five (5) acre research test plot as is generally indicated on the map marked as Exhibit "A" and attached to this document.

Section 1-1.9 Competent Workman.

The CONTRACTOR shall employ only competent workmen for the execution of his work, and all such work shall be performed under the direct supervision of an experienced well driller satisfactory to the ENGINEER. Construction safety standards and use of proper protective gear shall be observed by the CONTRACTOR.

Section 1-1.10 Bonding Requirements.

The CONTRACTOR shall furnish performance and payment bonds each in the amount of $300,000.00 as security for the performance and payment of all CONTRACTOR'S obligations under the Contract Documents. The bonds shall be obtained by CONTRACTOR at a cost not to exceed 4% of the total contract price.

Section 1-1.11 Retainage.

Progress payments will be made as agreed to according to the Contract Documents but in each case of payment, OWNER will retain an amount equal to 10% of the amount owed to CONTRACTOR for work completed. The balance of the total contract price owed to CONTRACTOR which is retained by OWNER during the term of this contract will be paid to CONTRACTOR after the work has been completed in accordance with Section 1-1.12 below.

Section 1-1.12 Completion of Work.

Notwithstanding the definition of substantial completion as is set forth in Section 14.8 of the Standard General Conditions of the Construction Contract attached hereto, the work called for in this contract will be deemed completed upon the latter to occur of the following:

(a) Either upon the expiration of the lien period as defined in Section 507-43 of the Hawaii Revised Statutes or upon the submission of lien releases executed by all parties who may have lien rights for work performed and materials supplied in connection with the work required under these Contract Documents, whichever event occurs first; and

[Signatures: "OWNER" and "CONTRACTOR"]
(b) Upon OWNER's written acceptance of the work required under the Contract Documents including CONTRACTOR's completion of all corrective work that ENGINEER and/or OWNER require.

In the event that CONTRACTOR provides written documentation of lien releases upon completion of the work, CONTRACTOR will also execute and deliver to OWNER an agreement, in form and substance satisfactory to OWNER, which indemnifies OWNER from and against any and all claims or causes of action, from parties who allege interests or liens for work performed and/or material supplied in connection with the work.

Section 1-1.13 Lien-Free Construction.

CONTRACTOR is required to perform all work in strict accordance with the Contract Documents to insure that all construction will be free of any and all liens by all persons who have or may have lien rights for work performed and/or materials supplied in connection with the work required under these Contract Documents.

Section 1-1.14 Liquidated Damages for Delay in Completion.

OWNER and CONTRACTOR recognize that time is of the essence and therefore, OWNER and CONTRACTOR agree that as liquidated damages for delay, but not as a penalty, CONTRACTOR shall pay OWNER the sum of One Hundred Dollars ($100.00) for each and every day that expires after the date that construction is to be completed pursuant to the Contract Documents.

Section 1-1.15 Contractor's Liability Insurance.

Pursuant to Section 5.3 of the Standard General Conditions of the Construction Contract attached hereto, CONTRACTOR shall purchase and maintain such comprehensive general liability and other insurance as is appropriate for the work being performed and furnished under the CONTACT DOCUMENTS. CONTRACTOR shall obtain comprehensive general liability insurance in the total aggregate amount of $1,000,000.00 with OWNER listed on the insurance policy as an Additional Insured. All of the policies of insurance required to be purchased and maintained for the certificates or other evidence thereof, shall contain a provision or endorsement that the coverage afforded will not be cancelled, materially changed or renewal refused until at least 30 days' prior written notice has been given OWNER and ENGINEER by certified mail. CONTRACTOR shall furnish to OWNER and ENGINEER certificates of insurance evidencing the existence of all required insurance.
Section 1-1.16 Standard General Conditions of the Construction Contract.

The Standard General Conditions of the Construction Contract prepared by Engineer's Joint Contract Documents Committee are attached to these General Conditions and Specifications and are incorporated and made an intricate part of this document and the Contract Documents. In the event that any of the provisions contained in the General Conditions and Specifications and the Standard General Conditions of the Construction Contract are in conflict, the provisions contained in these General Conditions and Specifications shall control and will be binding upon the parties hereto.

SECTION 1-2 - CASINGS AND WELL SCREENS

Section 1-2.1 Casings.

Casings to be used hereunder as a part of the permanent well shall be of new steel and meet ASTM A-53, Grade B, .375 inch wall thickness, 16 inch O.D., coated inside and out, and bevel ended. Casings shall be provided with drive shoe of approved type. Casings shall have welded joints. CONTRACTOR shall submit a certificate from the manufacturer stating the specifications of the casing.

Section 1-2.2 Well Screens.

The screen to be furnished and installed hereunder shall be mild steel meeting ASTM A-53, Grade B, .375 inch wall thickness, 16 inch O.D. The screen shall be louvered type with the louvers facing down and punched on the full flo pattern or a similar type screen which is approved in writing by ENGINEER. Slot size shall be 1/4 inch. The open area shall be at least 102 square inches per lineal foot. Use of lead packers is not encouraged. The screen shall be welded to the plain casing. Minimum screen length shall be 20 feet. CONTRACTOR shall submit a manufacturers certificate on screen specifications.

The openings or slots shall be so designed as to prevent clogging and shall be free of jagged edges, irregularities, or anything that will accelerate or contribute to clogging or corrosion.

The screen shall have adequate strength to resist external forces applied to it after installation and to minimize the likelihood of damage during installation. The screen must have no change of alignment at any joint after installa-
tion. The CONTRACTOR shall submit for approval drawings and other information showing the design and method of construction of the screen.

SECTION 1-3 - DESCRIPTION OF WORK

The completed well to be constructed hereunder shall comprise the following sections:

A first section estimated to be 1,116 feet long, in rock extending from the surface to a point approximately 1,115 feet below the surface of the ground. The first section shall be drilled approximately 20 inches in diameter and shall be cased with 16 inch ID pipe which shall extend from a point 1 foot above the ground surface to approximately 35 feet above the bottom of the 20 inch hole.

A second section consisting of 30 feet of 16 inch nominal diameter well screen which shall extend to the bottom of the 20 inch hole.

The annulus space between the 20 inch hole and the 16 inch pipe shall be filled with cement grout from the surface to a point 100 feet below the surface. The annular between the 20 inch drilled hole and the 16 inch casing more than 100 feet below the surface shall be filled with No. 3 crushed basalt and approved by ENGINEER. The crushed basalt fill shall be carefully and slowly placed into the annulus to prevent bridging and creating large voids in the fill. Water may be used during placement to prevent bridging. Frequent sounding shall be made to insure uniform placement around the casing and to prevent bridging. The top of the 16 inch casing shall be closed with a blank flange. Water pumped from the well shall be conducted by ditch or pipe 50 feet downslope from the well.

SECTION 1-4 - TESTING FOR YIELD AND DRAWDOWN

Section 1-4.1 Time of Test.

After the well has been completely constructed and cleaned out and its depth accurately measured, the CONTRACTOR shall notify the ENGINEER to that effect and shall make the necessary arrangements for conducting a final pumping test. Besides this final test the ENGINEER may order the CONTRACTOR to make such additional pumping tests during and after construction as he deems necessary. All tests shall be run with similar equipment and in a like manner to that hereinafter described.
Section 1-4.2 Test Pump.

The CONTRACTOR shall furnish and install necessary pumping equipment capable of pumping to the required point of discharge a maximum of at least 1200 gpm with the pumping level 1,150 feet below ground but with satisfactory throttling devices, so that the discharge may be reduced to 200 gpm.

The pumping unit shall be complete with prime mover of ample power, and controls and appurtenances and shall be capable of being operated without interruption for a period of 96 hours.

Section 1-4.3 Auxiliary Equipment.

The CONTRACTOR shall furnish all necessary discharge piping for the pumping unit, which shall be of sufficient size and length to conduct the water being pumped a distance of 50 feet from the well. He shall also furnish, install and maintain a calibrated water meter of approved size and type for measuring the flow of water. To measure the elevation of the water level in the well, an air line complete with gate valve, hand pump, and check valve shall be provided. Unless otherwise permitted, the air line shall be securely fastened to the pumping unit and shall terminate approximately at the maximum desired pumping level stated in Section 1-4.2, but shall in no case be nearer than 2 feet to the end of the suction pipe. A calibrated pressure gage operating in the range of 0 to 25 psi shall be used for measuring drawdown during pumping.

Section 1-4.4 Duration of Yield-Drawdown and Long Term Tests.

Except as otherwise provided, the CONTRACTOR shall furnish all labor, motive power, lubricating oil and other necessary materials, equipment, labor, and supplies required and shall operate the pumping unit at such rates of discharge and for such periods of time as directed, excepting that the final test shall be run for a period of 72 hours. Accidental interruptions may, if so agreed upon between the CONTRACTOR and ENGINEER be compensated for by correspondingly extending the time of the completion of the test run. After the completion of the final test the CONTRACTOR shall remove by bailing, sand pumping, or other methods any sand, stones, or other foreign material that may have become deposited in the well. Time stated for the duration of the final test is a minimum only, and the ENGINEER reserves the right to require the CONTRACTOR to extend such period of test, or to make additional tests.
Section 1-4.5  Well Surging.

Before test pumping begins, the well shall be developed by surging. The well shall be purged clean of all cuttings and foreign matter until a sample meets the turbidity requirements of Section 1-9.3.

SECTION 1-5 - GROUTING AND SEALING

Section 1-5.1  Grouting Material.

The annular space between the inner casing and the outer casing or hole shall be filled with cement grout from the surface to a point 100 feet below the surface. Grout shall be proportioned of cement and the minimum quantity of water (not over 6 gallons per cubic foot of cement) required to give a mixture of such consistency that it can be forced through the grout pipes. The mixture, method of mixing, and consistency of grout shall be approved by the ENGINEER.

Section 1-5.2  Placement of Grout.

Before proceeding with the placing of the grout, the CONTRACTOR shall secure the ENGINEER'S approval of the method he proposes to use. No method will be approved that does not specify the forcing of grout from the bottom of the space to be grouted towards the surface. A suitable cement retainer, packer, or plug shall be provided at the bottom of the inner casing so that grout will not leak through into the bottom of the well. Prior to the continuous grouting, a preliminary plug of 5 bags of cement weighing 94 pounds each mixed with water to a consistency approved by ENGINEER shall be placed in the annulus and allowed to set for 24 hours before proceeding. The remaining grouting shall be done continuously and in such a manner as will insure the entire filling of the annular space in one operation. No drilling operations or other work in the well will be permitted within 72 hours after grouting of casings. If quick-setting cement is used, this period may be reduced to 24 hours.

Section 1-5.3  Grouting Liners.

Where required by the ENGINEER, liners shall be grouted. The method to be used shall be detailed by the CONTRACTOR for the approval of the ENGINEER.
SECTION 1-6 - TESTING FOR PLUMBNESS AND ALIGNMENT

Section 1-6.1 Requirement to Test.

All holes shall be constructed and all casings and liners set round, plumb, and true to line as defined herein. To demonstrate the compliance of this work with this requirement, the CONTRACTOR shall furnish all labor, tools, and equipment and shall make the tests described herein in the manner prescribed by, and to the satisfaction of, the ENGINEER. Tests for plumbness and alignment must be made after the complete construction of the well and before its acceptance. Additional tests, however, may be made by the CONTRACTOR during the performance of the work. No specific payments shall be made by the OWNER for making these tests.

Section 1-6.2 Description of Test.

Plumbness and alignment shall be tested by lowering into the well to the bottom of the cased hole a section of pipe 40 feet long or a dummy of the same length. The outer diameter of the plumb shall not be more than 1/2 inch smaller than the diameter of that part of the casing or hole being tested. If a dummy is used, it shall consist of a rigid spindle not less than 14 inches O.D. with a wall thickness of not less than .375 inch and three rings, each being 12 inches wide. The rings shall be truly cylindrical and shall be spaced one at each end of the dummy and one ring in the center thereof. The central member of the dummy shall be rigid so that it will maintain the alignment of the axes of the rings. OWNER, at its own expense, may exercise the right to use a video camera to further verify interior of casing and screen.

Section 1-6.3 Requirements for Plumbness and Alignment.

Should the plumb or dummy fail to move freely throughout the length of the casing or hole to the bottom, or should the well vary from the vertical in excess of two-thirds the inside diameter per any 100 feet of depth, the plumbness and alignment of the well shall be corrected by the CONTRACTOR at his own expense. Should the CONTRACTOR fail to correct such faulty alignment or plumbness, the ENGINEER may refuse to accept the well. The ENGINEER, with the prior written consent of OWNER, may waive the requirements of this paragraph for plumbness if in ENGINEER's judgment, (a) the CONTRACTOR has exercised all possible care in constructing the well and the defect is due to circumstances beyond his control; (b) the utility of the completed well will not be materially affected; and (c) the

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"OWNER"

"CONTRACTOR"
cost of necessary remedial measures will be excessive. In no event will the provisions of this paragraph with respect to alignment be waived.

SECTION 1-7 - DISINFECTION

Section 1-7.1 Time of Disinfection.

After the well has been completely constructed, it shall be thoroughly cleaned of all foreign substances, including rocks, timbers, rope, debris of any kind, cement, oil, grease, joint dope, and scum. The casing pipe shall be thoroughly swabbed, using alkalis if necessary, to remove oil, grease, or joint dope. The well shall then be disinfected with a chlorine solution.

Section 1-7.2 Chlorine Solution.

The chlorine solution used for disinfecting the well shall be of such volume and strength and shall be so applied that a concentration of at least 50 ppm of chlorine shall be obtained in all parts of the well. Chlorine solution shall be prepared and applied in accordance with the directions of, and to the satisfaction of, the ENGINEER, and shall remain in the well for a period of at least two hours.

Section 1-7.3 Requirements for Disinfection of Test Pump.

In the event that the test pump is installed after the well has been disinfected, all exterior parts of the test pump coming in contact with the water shall be washed with a one percent solution of chlorine bleach.

SECTION 1-8 - SAMPLES AND RECORDS

Section 1-8.1 Samples of Formations.

The CONTRACTOR shall keep an accurate record of the elevation to which the water level stabilizes as each aquifer is encountered and of the location of the top and bottom of each stratum penetrated, and shall save and deliver to the ENGINEER a sample taken from each 5 feet of drilling and at every change of formation.

Section 1-8.2 Record of Casing Pipe.

The CONTRACTOR shall keep an exact record of the order in which each piece of pipe is installed in the well, identifying each by number, size, and length.

"OWNER"

"CONTRACTOR"
Section 1-8.3 Record of Material Removed During Development.

The total number of cubic feet of material removed from the well as a result of developing the well shall be recorded by the CONTRACTOR.

Section 1-8.4 Liquidated Damages for Failure to Deliver Samples or Records.

Failure on the part of the CONTRACTOR to obtain, preserve and deliver such samples or records to the ENGINEER shall be considered as actual damage to the OWNER and shall authorize the OWNER to retain from moneys due or to become due under the contract the sum of $100.00 as liquidated damages for each sample that the CONTRACTOR shall fail to obtain, preserve, and deliver, or for each length of pipe not properly measured and recorded in the order in which it was placed in the well.

Section 1-8.5 Daily Reports.

The CONTRACTOR shall submit a daily report describing the nature of material encountered, the work done during each day, including such items of work accomplished as depth drilled, casing set, the water level in the well at the beginning and end of each shift, and such other pertinent data as he is requested to record by the ENGINEER.

SECTION 1-9 - PROTECTION OF QUALITY OF WATER

Section 1-9.1 Precautions to be Taken.

The CONTRACTOR shall take such precautions as are necessary or as may be required to permanently prevent contaminated water or water having undesirable physical or chemical characteristics from entering, through the opening made by the CONTRACTOR in drilling the well, the stratum from which the well is to draw its supply. He shall also take all necessary precautions during the construction period to prevent contaminated water, gasoline, or any other contaminant from entering the well, either through the opening or by seepage through the ground surface.

Only materials approved by ENGINEER shall be introduced into the well bore or used by the CONTRACTOR. No drilling mud shall be used below the water table.
Section 1-9.2 Corrective Work.

In the event that the well becomes contaminated or that water having undesirable physical or chemical characteristics enters the well because of the neglect of the CONTRACTOR, he shall, at his own expense, perform such work or supply such casings, seals, sterilizing agents or other material as may be necessary to eliminate the contamination or shut off the undesirable water.

Section 1-9.3 Freedom From Sand and Turbidity.

The CONTRACTOR shall exercise extreme care in the performance of his work in order to prevent the breakdown or caving in of strata overlying that from which the water is to be drawn. He shall develop, pump, or bail the well by such methods as may be approved by the ENGINEER, until the water pumped from the well shall be substantially free from sand and until the turbidity is less than 5 mg/l as determined by the appropriate method for determining silica as outlined in STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, or as measured by a centrifugal sand-separating meter, such as described in JOURN. AWWA, 46:123 (Feb. 1954) or equivalent.

SECTION 1-10 - TEMPORARY CAPPING

At all times during the progress of the work, the CONTRACTOR shall protect the well in such manner as to effectively prevent either tampering with the well, or the entrance of foreign matter into it. Upon completion of the well the CONTRACTOR shall provide and set a substantial screwed, flanged, or welded cap satisfactory to the ENGINEER.

SECTION 1-11 - ABANDONMENT OF WELL

In the event that the CONTRACTOR shall fail to sink the well to the depth specified or to such lesser depth as ordered by the ENGINEER, or should abandon the well because of loss of tools or for any other cause, he shall, if requested, and as directed by the ENGINEER, fill the abandoned hole with crushed rock inside the casing to within 25 feet of the surface and a 25 foot concrete plug to the surface. Salvaged material furnished by the CONTRACTOR shall remain his property.
SECTION 1-12 - MEASUREMENT AND COMPENSATION

Section 1-12.1 Setting Up and Removing Equipment.

Under this item the CONTRACTOR shall be paid the price bid in the proposal as full compensation for bringing his equipment to the job and setting up and removing same. Setting up shall include drilling a minimum of 10 feet.

Section 1-12.2 Drilling, Casing and Sealing 20-inch Hole.

There are included under this item the costs of the casing pipe and of all drive shoes, couplings, fittings, seals, and the like. Payment shall be based on the vertical distance measured between the limits specified for the cased hole.

Section 1-12.3 Grouting or Placing Crushed Basalt in Annular Space Between 20-inch Conductor Casing and 16-inch Casing.

Under this item the CONTRACTOR shall be paid the unit price per linear foot for the amount bid in the proposal for furnishing and placing grout in the annular space between the 16-inch casing and the 20-inch outer casing or hole. Measurement shall be made of the actual number of linear feet of grouting the annular space where and as directed.

Section 1-12.4 Testing for Yield-Drawdown and Long Term Drawdown.

Under this item the CONTRACTOR shall be paid the unit price bid in the proposal for making the required tests for yield and drawdown. Tests shall be made with equipment previously described herein and for such period as may be directed by the ENGINEER. Allowance shall be made up to a maximum of 48 hours for the actual time necessary to install and place the pump in operation, and an additional allowance shall be made up to a maximum of 48 hours for the time necessary for removing the test pump. Except for these two allowances, payment under this item shall only be made for the actual length of time the pump is in operation, and deductions shall be made for all breakdowns or stops or for such tests as are not in complete accordance with the specifications. No payment shall be made hereunder for tests made by the CONTRACTOR for his own information or for pumping to develop the well. If, for any reason, pumping equipment fails prior to the completion of the specified period of test, the CONTRACTOR shall not receive payment for the partial test, and shall not start a subsequent test until the water level has reached stability.
Section 1-12.5 Miscellaneous Work and Material.

Under this item the CONTRACTOR shall be paid the lump sum bid in the proposal as full compensation for special work, if any, itemized in the proposal.
ADDENDUM TO CONTRACT DOCUMENTS

This Addendum is hereby attached to and made a part of that certain Agreement ("Construction Contract") between MacFARMS OF HAWAII, INC., a Hawaii corporation ("OWNER") and PAUL FRANDSEN & ASSOCIATES ("CONTRACTOR") and all CONTRACT DOCUMENTS relating to and referred to in the Construction Contract. The defined terms in said CONTRACT DOCUMENTS shall have the same meaning when used in this Addendum. In return for the compensation and mutual covenants set forth below, the OWNER and CONTRACTOR hereby agree that CONTRACTOR will perform all work necessary to complete the job described in Section 2 below relating to the water well owned by the State of Hawaii and known as the Okoe Well.

1. STATE APPROVAL FOR WORK.

OWNER shall obtain from the State of Hawaii all permits, approvals, consents or authorizations necessary to enable CONTRACTOR to perform the work described in Section 2 below.

2. SCOPE OF WORK.

CONTRACTOR hereby agrees to furnish all the equipment and labor necessary to perform the following work:
2.1 Check Alignment of Okoe Well.

The CONTRACTOR shall check the plumbness and alignment of the Okoe Well using the method described in Section 1-6 of the GENERAL CONDITIONS AND SPECIFICATIONS. CONTRACTOR shall bear no responsibility for any misalignment discovered, other than that which may have resulted from CONTRACTOR'S negligent acts or omissions. CONTRACTOR shall leave the well in at least as good condition as it was at the beginning of the alignment test. At OWNER'S option, OWNER will have a representative present during the test.

2.2 Set Deep Well Turbine at Okoe Well.

The CONTRACTOR shall provide labor and equipment required to set a Layne deep well turbine pump in the Okoe Well. The pump consists of a bowl assembly, approximately 840 feet of 8-inch by 3-inch by one 15/16-inch column, tube and shaft, an airline, and a discharge head. The column, tube and shaft are in sections 20 feet long, and are joined by screwed couplers. One or more representatives of the pump manufacturer, Layne Pumps, Inc., will be present during the installation and will be responsible for preloading the line-shaft, adjusting bowl settings, and the initial pump start-up procedure.
3. CONTRACTOR RESPONSIBLE FOR DAMAGE.

CONTRACTOR shall be responsible for any damage done to the pump, column, tube, shaft, well, or motor which occurs while CONTRACTOR is performing the work described above.

4. COMPENSATION.

Notwithstanding the terms and conditions set forth in any of the other CONTRACT DOCUMENTS relating to contract payments from OWNER to CONTRACTOR, OWNER shall pay to CONTRACTOR the sum of $208.33 per hour for performing the work described in Section 2 above. Payment of the entire contract price for work described in Section 2 above relating to the Okoe Well will be due and payable to CONTRACTOR upon lien free completion of all work required under Section 2 above and acceptance of the work by ENGINEER and OWNER, including CONTRACTOR's completion of all corrective work that ENGINEER and/or OWNER might require.

5. TIME FOR COMPLETION.

CONTRACTOR shall commence work within ten (10) days of receipt of OWNER'S Notice to Proceed and shall complete all the work relating to the Okoe Well as described in Section 2 above within ___ days after the date that OWNER gives CONTRACTOR written Notice to Proceed.
6. **CONTRACT DOCUMENTS CONTROL.**

Except to the extent expressly set forth herein, the CONTRACT DOCUMENTS shall control in the event of any conflict between the terms of this Addendum and the CONTRACT DOCUMENTS.

MacFARMS OF HAWAII, INC.

By __________________________
Its __________________________
Date: May 24th 1988

"OWNER"

PAUL FRANDSEN & ASSOCIATES

By __________________________
Its __________________________
Date: May 28th 1988

"CONTRACTOR"
AGREEMENT

THIS AGREEMENT, made this 25th day of January, 1988, by and between MacFARMS OF HAWAII, INC., a Hawaii corporation (hereinafter and in all Contract Documents called "OWNER") and PAUL FRANDSEN AND ASSOCIATES, doing business as a Hawaiian partnership (hereinafter and in all Contract Documents called "CONTRACTOR").

WITNESSETH:

That for and in consideration of the payments and agreements herein after mentioned:

1. The CONTRACTOR will commence and complete the construction of Well No. 1 in strict accordance with the DRAWINGS prepared by PACAM ENGINEERING, INC. (hereinafter and in all Contract Documents called the "ENGINEER") numbered 1054-18 through 1054-19, dated February 29, 1988.

2. The CONTRACTOR will furnish all of the materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the PROJECT described herein.

3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within 10 calendar days after the date of the NOTICE TO PROCEED and will complete the same within 180 calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and to comply with all of the terms and conditions set forth in each of the CONTRACT DOCUMENTS.

5. The term "CONTRACT DOCUMENTS" shall mean and include the following:

   A. Advertisement for Bid
   B. Information for Bidders
   C. Bid
   D. Agreement
   E. General Conditions and Specifications and the Standard General Conditions of the Construction Contract attached thereto.
   F. Performance BOND
   G. Notice of Award
   H. Notice of Proceed

6. The OWNER will pay to the CONTRACTOR a Contract price not to exceed $300,000 in the manner and at such times as set forth in the CONTRACT DOCUMENTS. The contract price is based upon the following cost and fee schedule:
(1) Setting up: $30,000.00

(2) Drilling: $155.00 per lineal foot.

(3) Casing and sealing plain casing: $20 per lineal foot.

(4) Drilling and screening with 16 inch louvered casing: $50.00 per lineal foot.

(5) Grouting and placing crushed basalt: $31.93 per lineal foot.

(6) Test pumping (using contractor supplied pump): $208.33 per hour.

In the event that the depth of the well shall exceed 115 feet, the maximum contract price set forth above shall be subject to increase based upon the above cost and fee schedule and written approval by OWNER.

7. OWNER shall have the sole and absolute right at any time to assign and transfer, any and all rights and obligations under this Agreement to any subsidiary or affiliated company of OWNER, including but not limited to Puu Hinahina Water Company, Inc.

8. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the Standard General Conditions. Applications for Payment will be processed by ENGINEER as provided in the Standard General Conditions.

a. Progress Payments. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recom-
mended by ENGINEER, on or about the 30th day of each month during construction as provided below. All progress payments will be on the basis of the progress of the Work measured by the schedule of values established in paragraph 2.9 of the Standard General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements. The CONTRACTOR’S requests for progress payments shall be made in writing and submitted after the first business day of each month. The closing date for submittals for progress payments shall be the last business day of each month.

b. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.7 of the Standard General Conditions:

i) 80% of the value of the Work completed; and

ii) 80% of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to OWNER as provided in paragraph 14.2 of the Standard Conditions).
c. Upon Substantial Completion, in an amount sufficient to increase total payments to CONTRACTOR to 80% of the Contract Price, less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.7 of the General Conditions.

d. Final Payment. Upon final completion and acceptance of the Work in accordance with Section 1-1.12 of the General Conditions and paragraph 14.13 of the Standard General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER.

9. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized official, four (4) copies of this Agreement, each of which shall be deemed an original on the date first above written.

OWNER:
MacFARMS OF HAWAII, INC.

By: ____________________________

Name: R.l JIDGEN
(Please Type)

Title: GENERAL MANAGER
(SEAL)

ATTEST:

Name  HILARY BROWN  (Please Type)
Title:  ACCOUNT MANAGER

CONTRACTOR:
P. F. Frenandez and Ass.
By:  P. F. Frenandez - Brian Walsh
Name:  P. F. Frenandez  (Please Type)  BRIAN WALSH
Title:  Consultant

(SEAL)

ATTEST:

______________________________
Name  ______________________  (Please Type)
Title:  ________________________
Mr. Hilary Brown
Orchard Manager
MacFarms of Hawaii
Box 25 Star Route
Captain Cook, Hawaii 96704

Dear Mr. Brown:

Thank you for your letter of March 15, 1988, regarding the well site changes to the MacFarms of Hawaii drilling permits. We have modified our records to incorporate the changes as follows:

State Well No. 0952-01 (MacFarms #1): Tax Map Key changed to 8-9-11:11

State Well No. 0852-01 (MacFarms #2): Tax Map Key changed to 8-9-11:12

State Well No. 0852-02 (MacFarms #3): Tax Map Key changed to 8-9-11:12

There are no changes in the remaining two well permits. Please replace your existing well location map with the enclosed corrected map.

Concerning State Well No. 0751-01 (MacFarms #5), please send us a copy of the easement agreement with Farms of Kapua, Ltd. for our information and files.

Please notify us prior to start of drilling of each well.

Sincerely,

[Signature]

MANABU TAGOMORI
Deputy for Water Resource Management

ES:ko
Enc.
cc: USGS
Dept. of Health,
    Drinking Water Program
    Ground Water Protection Program
    Hawaii DWS
June 29, 1988

Dept. of Land &
Natural Resources
Div. of Water &
Land Management
P. O. Box 373
Honolulu, HI 96809

Attention: Mr. M. Tagomori

Dear Mr. Tagomori:

We wish to proceed with the drilling of Well #5
Permit #0751-01 (see attached map) within the next
10 days.

The drilling company who will carry out the work is
Paul Frandsen & Associates.

The easement agreement with Farms of Kapua, Ltd. is
completed and ready for signature. A copy of this
document will be forwarded within the next two weeks.

Sincerely,

H. Brown
Orchard Manager

attachment: map

cc: R. Vidgen
    S. D. Zuckerman
October 16th 1998

Mr Neal Fujii,
Department of Land and Natural Resources,
Commission of Water Resource Management,
P.O. Box 621,
HONOLULU, HI. 96809

Subject:-- Well Completion Report.

Dear Mr Fujii,

In a fax you sent me on June 17th 1998, you made mention that DLNR had not received a Well Completion Report for Well #1 (0952-01) which was completed in May 1989.

Recently, while I was reviewing old files I found a copy of a letter dated May 24th 1989. I have attached a copy of this letter which addressed the subject of registration of well #1. As you will note, accompanying the letter are the following attachments—form 8810, yield/draw down data, long term −72 hour test pump data, chloride analysis data and design plans well #1 "as built". The driller’s log was unavailable at that time but was to be submitted to you by the driller as per our contract terms with Paul Frandsen. Since this letter was clearly addressed to your office we have assumed that your office received it.

While the matter of well registration is cause for concern, Tom Nance who we are currently employing as a consultant, has informed me that DLNR has the location of Well #1 (0952-01) some 1.5 miles to the north of its actual position. In referring to my files I have found a letter that I sent to Mr Tagomori on June 29th 1988 in which I clearly state that we are about to proceed with the drilling of well#5 --(see attached) which is well permit #0751-01.

To my knowledge we have not received a visit from personnel in the Water Resource Management department to inspect the well since its completion. With the unresolved issue of the well registration, the incorrect location of the well in your records and the continued use of an incorrect well permit number (well number), there appears to be a good reason for a meeting of the minds in the very near future.

Please call me when you receive this letter and attachments.

Sincerely,

Hilary Brown
Orchard Manager
May 24, 1989

Department of Land and Natural Resources
Division of Water Resource Management
P. O. Box 373
Honolulu, HI 96809

RE: Registration of Wells and Stream Diversion and Declaration of Water Use

Dear Sirs:

Please find the enclosed items:

1) Form 8810-1
2) Yield/Drawdown Data
3) Long Term - 72-hour Test Pump Data
4) Chloride Test Results
5) Water Analysis Data
6) Design Plans Well 1 "As Built"

The Drillers Log is unavailable, as are plans for well pump type, power, pump capacity, etc.

I hope you find this information useful. If you have any question, please feel free to contact me at (808) 328-2435. Thank you for your cooperation.

Respectfully,

Mark K. Crawford
Asst. Orchard Manager

bb

Enclosures
June 29, 1988

Dept. of Land &
Natural Resources
Div. of Water &
Land Management
P. O. Box 373
Honolulu, HI 96809

Attention: Mr. M. Tagomori

Dear Mr. Tagomori:

We wish to proceed with the drilling of Well #5 Permit #0751-01 (see attached map) within the next 10 days.

The drilling company who will carry out the work is Paul Frandsen & Associates.

The easement agreement with Farms of Kapua, Ltd. is completed and ready for signature. A copy of this document will be forwarded within the next two weeks.

Sincerely,

H. Brown
Orchard Manager

attachment: map

cc: R. Vidgen
S. D. Zuckerman
Mr. Hilary Brown  
Orchard Manager  
MacFarms of Hawaii  
Box 25 Star Route  
Captain Cook, Hawaii 96704  

Dear Mr. Brown:

Thank you for your letter of March 15, 1988, regarding the well site changes to the MacFarms of Hawaii drilling permits. We have modified our records to incorporate the changes as follows:

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There are no changes in the remaining two well permits. Please replace your existing well location map with the enclosed corrected map.

Concerning State Well No. 0751-01 (MacFarms #5), please send us a copy of the easement agreement with Farms of Kapua, Ltd. for our information and files.

Please notify us prior to start of drilling of each well.

Sincerely,

MANABU TAGOMORI  
Deputy for Water Resource Management

ES:ko  
Enc.  
cc:  USGS  
Dept. of Health,  
Drinking Water Program  
Ground Water Protection Program  
Hawaii DWS
May 26, 1989

Mr. Mark Crawford
MacFarms of Hawaii Inc.
Box 25 Star Route
Captain Cook, Hawaii 96704

Dear Mark:

Subject: Evaluation of Testing of MacFarms Well No.1

Attached is my evaluation of the test pumping of MacFarms Well No. 1 and recommendations. Also attached is the well completion report that must be sent to DLNR as required by the well drilling permit which carries a 60 day time limit after completion of the well.

I have also attached 2 copies of the well registration form required by the Commission of Water Resource Management for all wells in Hawaii. I do not think it is necessary to prepare a form for the Okoe well since ownership is with the state. If you have not already filed for your well, the deadline is May 30, 1989. There is talk about extension to December 1989. Getting a postmark is probably the only critical element.

If you have any questions, please call or write me.

Sincerely,

Chester Lao
Hydrologist-Geologist
4774 Matsonia Drive
Honolulu, Hawaii 96816
(808-737-3930)
EVAULATION OF MACFARMS WELL NO. 1

SUMMARY AND CONCLUSIONS

Test pumping of MacFarms Well No. 1 demonstrates that a source of water suitable for orchard irrigation is available to augment the Okoe well leased from the state. Results of the testing conclusively indicate that the installed pumping capacity must be less than 800 gallons per minute with the expectation that reduction to half this rate might be required should unacceptable increases of salinity develop in response to longer term pumping at this rate. Sizing of well pumps, booster pumps, water mains, reservoirs, and an irrigation schedule adapted to a 24 hour operation may be required to optimize use of the well. If longer irrigation schedules are not possible, then more wells should be seriously considered in order to bring more acreage under irrigation.

Quality control of salinity by not oversizing the pump is absolutely necessary or the entire investment of well and irrigation system could be jeopardized. The inappropriate use of too brackish water will aggravated by deep infiltration beyond the root zone and become recharge that will increase the salinity of the aquifer.

WELL CONSTRUCTION

Although the time required to complete well drilling substantially exceeded the contract time of one year, the well meets the specifications agreed to by MacFarms and the constructor. In retrospect, certain contract weaknesses became apparent in the conduct of the well survey for plumbness. Proper equipment should be clearly stated in the contract to eliminate loopholes for interpretation to the contrary. More stringent local standards should be used to insure the best product. Without resorting to a resurvey, the alignment test showed the well to be capable of accepting a pump without binding. Although the equipment used for plumbness showed the well met specifications, the tolerance of the equipment was excessive to give accurate results according to local standards.

In order to avoid the cinder problem of the Okoe well, the end of the screen was cemented opposite a dense bed of basalt to prevent cinders from falling down the annulus and being sucked up by the pump. This method of construction also usually emphasizes radial flow to the well if the dense bed of lava is reasonably thick and extensive without a
great amount of cooling cracks. That a strong radial flow was not apparent is shown by the sensitivity of quality to pumping rates.

TEST PUMPING

Although drawdown is higher in the MacFarms Well No. 1, the greater proportion of dense lava in the saturated portion of this well than in the Okoe well causes greater friction losses at the well face. With an installed pump rated at 800 gpm, drawdown will be less than 3 feet. The actual range of rates during the testing ranged between 550 gpm and approximately 1500 gpm. The drawdowns ranged between 2.3 and 13.9 feet. Although proper equipment was lacking for accurate measurement of drawdown, the testing results indicate that a 13 stage pump will not break suction even at 1400 gpm.

Having the ability through the specifications to accelerate quality changes by maximum rates of 1400 gpm proved its value by showing the direct relationship of chloride concentration to rate and to sustained time. Although there was some doubt that the equipment could last the 72 hour test without interruption, the sustained test was successful.

The quantity of water pumped during the yield-drawdown test was 129,000 gallons over a period of 4 1/2 hours. Over 5 1/2 million gallons were pumped over the 72 hour test.

WATER QUALITY

When water quality determines whether a water source is usable or not, then judicious extraction of the water is mandatory, especially where the background quality approaches 1000 ppm chloride. Unfortunately, the hoped for operational experience from the Okoe was not forthcoming due to the plentiful rainfall since a pump was installed in the well. Although a rise of chloride levels were apparently noted during the operation, needed documentation is unavailable. Because MacFarms Well No. 1 shows some of the same characteristics and despite its better beginning quality, it would be prudent to be conservative and not oversize the pump. The following discussion details the reasons for this cautious approach.

As shown in attached Table 1, water quality results during the yield-drawdown test are mixed. While the increase of salinity with increased rates of pumping may be commonly expected, the reverse unexpectedly occurs at the rates over 1000 gpm. For example, chlorides begin at 715 ppm at the
pumping rate of 600 gpm, decrease to 700 ppm at 750 gpm, increase to 780 gpm at 990 gpm, decrease to 730 ppm at 1230 gpm, and finally decreases to the 715 ppm at 1475 gpm. These results are inconclusive, are probably caused by aquifer adjustments to pumping, and of a short term nature. At this time there may be a shallow layer of return irrigation water from the Okoe overlying the main body of better quality water that is in turn underlain by lesser quality water easily drawn into the pump at excessive pumping rates.

Data from the sustained 72 hour test pumping is more reliable. Better quality of 707 ppm chlorides at the beginning of the test may indicate that the shallow layer was depleted from the previous pumping. At the end of 24 hours, 36 hours, and 72 hours the chloride levels increased to 782 ppm, 827 ppm, and 857 ppm, respectively. These changes represent changes of 75 ppm, 45 ppm, and 30 ppm on successive 24 hour periods. A linear regression analysis of the paired data yields a correlation coefficient of 0.981 and estimates that 1000 ppm chloride will be reached in 150 days at the sustained pumping rate of 1200 gpm plus. Despite the very favorable correlation coefficient, the data pairs are too few to place much reliance on the prediction. A log-log plot of the data shows that 1000 ppm would be reached in 60 days. I feel there are adjustments still occurring that make predictions risky, especially when the final sample taken at the end of the test showed 20 ppm less chlorides than a sample taken only minutes before. An undeniable conclusion is that chlorides increase with time. Theory and practice demonstrate that excessive rates caused localized stress that results in upconing of salt water into a pumping well.

The partial analyses of the Okoe well and MacFarms Well No. 1 indicate very similar water despite the latter well being somewhat further inland. The one ion that is noticeably out of proportion is calcium which is approximately 3 times more in the MacFarms well than in the state well. There is a typographic error in the value for hardness in the Okoe well and the correct value should be 340 ppm rather than 1340 ppm in the copy forwarded to me for appraisal. Unless there is a very large amount of unaccountable ions in the MacFarms well, there also appears to be an imbalance between TDS, which is measured, with simple summing of parts. The TDS should be closer to matching for the two wells. The chloride hardness ratio of the MacFarms shows by the higher calcium content a lesser influence of sea water type salts than does the Okoe well.

Verification by two certified laboratories of chloride values of the same sample taken during the yield drawdown test was not possible despite use of the samples reported to be the same value by the MacFarms analyst to be a single
value of 1136 ppm and by an independent certified lab to be 780 ppm chloride. The values determined by MacFarms compared to the Brewer values show a discrepancy for sample no. 5 taken next to last. The MacFarms analysis shows a higher chloride content at the higher rate of 1230 gpm than does the Brewer analysis. Unfortunately, there is no additional data such as specific conductance to indicate which is the true value. Until the MacFarms standard solution can be calibrated, it should not be used; even conversion factor from based the agreed upon value for a single sample by two laboratories cannot be applied because the results are too scattered to be reliable. There should not be too much concern over these discrepancies because the short term nature of the testing clearly indicates adjustments are still occurring in the aquifer.

RECOMMENDATIONS

A large investment such as MacFarms Well No. 1 requires use of the maximum capabilities as much as possible in order to justify an investment in its construction. On this basis, the desire to install a large pump of more than 1000 gpm is understandable. The nature of the aquifer, a thin fresh water lens supported by only a meager underflow, simply will not tolerate abuse with overly large pumps.

A pump size of 800 gpm to match the Okoe Well and the design of the irrigation mains, distribution piping, boosters, and reservoirs is recommended. On a long term basis this capacity is likely to be excessive and is made on the basis that reductions will be made to control salinity and with the knowledge that a reduction to half of the rated capacity can be made without injury to the pump although efficiency will decrease somewhat. For shorter irrigation seasons, the rise of salinity may not reach excessive levels, and the extra capacity may be beneficial to shortened irrigation scheduling.

A round-the-clock use of the well preserves water quality by avoiding the surging that accompanies on-off cycling. Paying small premiums for shift work will pay off in better quality. Automation with computer control of the irrigation system is logical extension of such a plan.

A too large installed pump capacity may prove a hindrance because it cannot be used at all because of excessive salinity. If insufficient water is available from the two wells and improved irrigation scheduling, then another well of 800 gpm capacity is recommended, keeping in mind that the third well of 800 gpm may be beyond the sustainable pumpage from the aquifer beneath the lands owned
by MacFarms. If all wells are downsized to 350 gpm to 400 gpm, more wells can be accommodated to pump the same amount of water of the best quality available compared to other schemes of fewer but higher capacity pumping installations.

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<th>PPM CHLORIDE CONCENTRATION</th>
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** Analysis by Brewer
** Independent Lab
*** MacFarm

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Analysis by Brewer
Independent Lab
MacFarm
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.: N/A ISLAND: Hawaii
WELL NAME OR DESIGNATION: Well No. 1 SOURCE OR STATION NAME (For a battery of wells): Phase II - MacFarms Irrigation

A. WELL OPERATOR
Firm name: MacFarms Hawaii
Contact person: Mark K. Crawford
Address: Box 25, Star Route
Captain Cook, HI
Zip: 96704 Phone: (808)328-2435

B. OWNER OF WELL SITE
Firm name: MacFarms Hawaii
Contact person: Mark K. Crawford
Address: Box 25, Star Route
Captain Cook, HI
Zip: 96704 Phone: (808)328-2435

C. WELL LOCATION
Tax Map Key: 8-9-13 Town, Place, District: Kapua, South Kona

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): 1143 ft.
Reference point (Used to measure depth to water):
Elevation: N/A ft.
Description: __________________________

Depth to water (below reference point): 1144 ft.
Maximum recorded chloride: 700 ppm
Minimum recorded chloride: 857 ppm
Maximum chloride in 1987: N/A ppm

Year drilled or constructed: May 88 - Apr 89
Well contractor: Frandsen & Sons
Casing diameter: 16 0D in.
Solid casing depth (below ground): 1148 ft.
Perforated casing depth (below ground): 1148-1148.5 ft.
Total depth of well: __________________________ ft.
Minimum chloride in 1987: N/A ppm

E. INSTALLED PUMP DATA - Not installed under design consideration
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: N/A

... (continued over)

For Official Use Only:
Date received: __________________________ Date accepted: __________________________
Field checked by: __________________________ Date: __________________________
Comments: __________________________ Latitude: __________________________
Longitude: __________________________ State Well No.: __________________________

References: Hawaii Revised Statutes, Chapter 174C;
Hawaii Administrative Rules, Chapters 13-167 to 13-171.
F. DECLARATION OF WATER USE

NOTE: The purpose of the Declaration of Water Use is to obtain information necessary for the management of the State's water resources. The Declaration does not confer a legal right to water or its use.

Water use data are recorded: Daily Weekly Monthly Other (Describe): _______________________________________________________________________

Method of measurement: Flow Meter Orifice Other (Describe): _______________________________________________________________________

Quantity of Use (Report metered or estimated monthly water use from the well described on the reverse side of this form, for the calendar years 1983 through 1987. For a battery of wells which are not individually metered, but which are connected to a single meter or other measuring device, report total use from the battery):

**WATER USE, IN GALLONS x 1000**

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<td></td>
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</tr>
<tr>
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<tr>
<td>ANNUAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimum day’s use: N/A gallons Maximum day’s use: N/A gallons

Typical times of usage: ___________________________

Type of Use (check all category boxes that apply and provide additional information as indicated):

- □ Municipal (including resorts, hotels, businesses)
- □ Domestic (systems serving 25 people or less)
- □ Irrigation
- □ Industrial
- □ Military
- □ Other

Additional Information

Number of service connections: ___________________________

Acres Irrigated: 950

Crop(s): Sugar

Non-Crop: Landscape Golf Course

Method: Drip Furrow Sprinkler

Specify (livestock, aquaculture, etc.): ___________________________

I declare that the contents of the above Declaration of Water Use are, to the best of my knowledge and belief, true, correct, and complete.

Water User's Signature: ___________________________

Printed Name: Mark K. Crawford

Firm or Title (Well Operator, etc.): MacFarms Hawaii

Date: 5/24/89
May 18, 1989

Chloride Test Results

<table>
<thead>
<tr>
<th>Sample</th>
<th>GPM</th>
<th>PPM Chlorides</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Hour Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>600</td>
<td>715</td>
</tr>
<tr>
<td>2</td>
<td>750</td>
<td>700</td>
</tr>
<tr>
<td>3</td>
<td>990</td>
<td>735</td>
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<tr>
<td>4</td>
<td>1230</td>
<td>730</td>
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<tr>
<td>5</td>
<td>1475</td>
<td>715</td>
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<tr>
<td>72-Hour Test</td>
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<td></td>
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<tr>
<td>7</td>
<td>1200</td>
<td>707</td>
</tr>
<tr>
<td>8</td>
<td>1340</td>
<td>782</td>
</tr>
<tr>
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<td>10</td>
<td>1320</td>
<td>857</td>
</tr>
<tr>
<td>11</td>
<td>990</td>
<td>837</td>
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Mark Crawford

wb
<table>
<thead>
<tr>
<th>SAMPLE TYPE</th>
<th>SAMPLE DESCRIPTION</th>
<th>UNITS</th>
<th>CHLORIDES (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># 1</td>
<td>1200</td>
<td>715</td>
</tr>
<tr>
<td></td>
<td># 2</td>
<td>1320</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td># 3</td>
<td>1429</td>
<td>735</td>
</tr>
<tr>
<td></td>
<td># 5</td>
<td>1550</td>
<td>715</td>
</tr>
<tr>
<td></td>
<td># 6</td>
<td>1620</td>
<td>725</td>
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**Laboratory Analysis Report (1)**

**To:** MACFARMS OF HAWAII  
**Attention:** MR. HILLARY BROWN  
**Address:** STAR ROUTE 25  
**P.O. Box A 63547**  
**Phone:**  
CAPTAIN COOK, HAWAII 96704

**Samples of:** Well Water  
**Sampled By:** Mark Crawford  
**Sampling Date:** as noted  
**Time:** as noted  
**Receipt Date:** 05-16-89  
**Time:** 1123

**Date Sample Analyzed:**  
<table>
<thead>
<tr>
<th></th>
<th>05/16-17/89</th>
<th>05/16-17/89</th>
<th>05/16-17/89</th>
<th>05/16-17/89</th>
<th>05/16-18/89</th>
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</table>

**Time Sample Analyzed:**

**Sample Type:**

**Sample Description:**

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<th>05/09/89</th>
<th>05/10/89</th>
<th>05/11/89</th>
<th>05/12/89</th>
<th>05/13/89</th>
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</thead>
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**Units:**

<table>
<thead>
<tr>
<th></th>
<th>mg/L</th>
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<th></th>
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<th></th>
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**Chlorides:**

<table>
<thead>
<tr>
<th></th>
<th>mg/L</th>
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**Calcium:**

<table>
<thead>
<tr>
<th></th>
<th>mg/L</th>
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**Magnesium:**

<table>
<thead>
<tr>
<th></th>
<th>mg/L</th>
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**Potassium:**

<table>
<thead>
<tr>
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<th>mg/L</th>
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</table>

**Sodium:**

<table>
<thead>
<tr>
<th></th>
<th>mg/L</th>
<th></th>
<th></th>
<th></th>
<th></th>
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**Sulfate:**

<table>
<thead>
<tr>
<th></th>
<th>mg/L</th>
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**Fluoride:**

<table>
<thead>
<tr>
<th></th>
<th>mg/L</th>
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<th></th>
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</table>

**Nitrogen:**

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<tr>
<th></th>
<th>mg/L</th>
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**Total Dissolved Solids:**

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<th>mg/L</th>
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Signed: [Signature]

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**Date Sample Analyzed:** 05/16-17/89  
**Time Sample Analyzed:** as noted  
**Sample Type:** 

**Sample Description:**

<table>
<thead>
<tr>
<th>Sample Description</th>
<th>Units</th>
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<th>05/10/89</th>
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**Units:**

<table>
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<tr>
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**Chlorides:**

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**Calcium:**

<table>
<thead>
<tr>
<th></th>
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**Magnesium:**

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<tr>
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</table>

**Potassium:**

<table>
<thead>
<tr>
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**Sodium:**

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**Sulfate:**

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<tr>
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**Fluoride:**

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**Nitrogen:**

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<th></th>
</tr>
</thead>
</table>

**Total Dissolved Solids:**

<table>
<thead>
<tr>
<th></th>
<th>mg/L</th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>


Signed: [Signature]
DEPARTMENT OF LAND & NATURAL RESOURCES
DIVISION OF WATER AND LAND DEVELOPMENT

DRILLER'S REPORT

DESCRIPTION

Date of report: May 31, 1989
Person filing report: MacFarms Hawaii Inc.

A. OWNER: MacFarms Hawaii
NAME: MacFarms Well No. 1
ISLAND: Hawaii

B. GENERAL LOCATION: South Kona

C. DRILLING COMPANY: Frandsen and Sons

D. TYPE OF RIG: Cable Tool

DRILLING COMPLETED: Driller Frandsen

E. ELEVATION, msl: Top of drilling platform

Height of drilling platform above ground surface

F. HOLE SIZE:

inch dia. to ft. below drilling platform.

inch dia. to ft. below drilling platform.

G. CASING INSTALLED:

in. I.D. x 3/8 in. wall solid section to ft. below drilling platform.

in. I.D. x 5/16 in. wall perforated section to ft. below drilling platform.

Type of perforation: Louvered

H. ANNULUS: Grouted

Gravel packed

I. PERMANENT PUMP INSTALLATION:

- Pump type, make, serial no. Capacity g.p.m.
- Motor type, H.P., voltage, r.p.m.
- Depth of pump intake setting ft. below
- Depth of bottom of airline ft. below
- Which elevation is ft.

HYDROLOGY

J. INITIAL WATER LEVEL

K. INITIAL CHLORIDE

L. PUMPING TESTS:

Reference point (R.P.) used: which elevation is ft.

Start water level ft. below R. P. Start water level ft. below R. P.

End water level ft. below R. P. End water level ft. below R. P.

Depth of well ft. below R. P. Depth of well ft. below R. P.

Subsurface Formation

M. DRILLER'S LOG:

- Depth, ft. Rock Description & Remarks
- Water Level

- Depth, ft. Rock Description & Remarks
- Water Level

N. REMARKS:

INSTRUCTIONS: Send three(3) copies to: Manager-Chief Engineer, Division of Water and Land Development, P. O. Box 373, Honolulu, Hawaii 96809.


FOR DRILLER'S USE

Job Name: 
Job No.: 

FOR OFFICIAL USE

Latitude: 
Longitude: 
Well No.:
<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
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<tbody>
<tr>
<td>0 - 5 feet</td>
<td>gray aa</td>
</tr>
<tr>
<td>-10</td>
<td>gray aa</td>
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<tr>
<td>-15</td>
<td>gray aa, red fragments</td>
</tr>
<tr>
<td>-20</td>
<td>gray aa, fine cuttings</td>
</tr>
<tr>
<td>-25</td>
<td>same as above</td>
</tr>
<tr>
<td>-30</td>
<td>same as above</td>
</tr>
<tr>
<td>-35</td>
<td>same as above</td>
</tr>
<tr>
<td>-40</td>
<td>gray pahoehoe, white coatings</td>
</tr>
<tr>
<td>-45</td>
<td>gray aa</td>
</tr>
<tr>
<td>-50</td>
<td>gray aa</td>
</tr>
<tr>
<td>-55</td>
<td>cement</td>
</tr>
<tr>
<td>-60</td>
<td>cement</td>
</tr>
<tr>
<td>-65</td>
<td>cement</td>
</tr>
<tr>
<td>-70</td>
<td>cement and clayey cuttings</td>
</tr>
<tr>
<td>-75</td>
<td>gray and black cinders, clay</td>
</tr>
<tr>
<td>-80</td>
<td>gray and black cinders, clay</td>
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<td>Description</td>
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<tr>
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<tr>
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<td>aa, red cinders, clay</td>
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<tr>
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<tr>
<td>-155</td>
<td>aa</td>
</tr>
<tr>
<td>-160</td>
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</tr>
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<tr>
<td>-230</td>
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<td>-235</td>
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</table>
-250 pahoehoe
-255 red pahoehoe
-260 red cinders
-265 red cinders
-270 cinders, clinkers
-275 fine clinkers
-280 clinkers and aa
-285 same as above
-290 aa, clinkers
-295 aa, cinders
-300 same, finer
-305 same, coarser
-310 same, finer
-315 clinkers, cinders
-320 red clay, cinders
-325 sandy clay
-330 aa
-335 same
-340 same
-345 cinders
-350 pahoehoe
-355 same, reddish
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-365 aa
-370 same
-375 same
-380 same
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<td>dense pahoehoe</td>
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<td>-505</td>
<td>same</td>
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<tr>
<td>-510</td>
<td>pahoehoe, some cinders</td>
</tr>
<tr>
<td>-515</td>
<td>same</td>
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-520  same
-525  same
-530  same
-535  same
-540  same
-545  same
-550  same
-555  same
-560  same
-565  same
-570  same, sand size
-575  same
-580  same, coarser
-585  same
-590  same
-595  same
-600  same, coarser
-605  same
-610  same
-615  same
-620  same
-625  pahoehoe, dense
-630  same as above, olivine
-635  pahoehoe, one-third reddish
-640  pahoehoe, bits of red
-645  pahoehoe, one-third reddish
-650  pahoehoe, dense, olivine
pahoehoe, dense, one-fourth red
same as above, bits of red,
same
same, olivine
same, half red, olivine
same, less red, olivine
same, half red, olivine
pahoehoe, brown and gray
same as above, olivine
pahoehoe, dense, gray and brown
same
same, reddish-orange
same, red
same, finer, abundant olivine
same, gray, abundant olivine
same
pahoehoe, gray-green, 80% oliv.
red cinders, abundant olivine
cinders and pahoehoe
pahoehoe, gray and red, olivine
pahoehoe, gray and red fragment
same
pahoehoe, gray
pahoehoe, gray and red, olivine
same, abundant olivine
same, less olivine
same, olivine and augite
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<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
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<tr>
<td>-795</td>
<td>pahoehoe, vesicular, olivine</td>
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<tr>
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<td>-805</td>
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<tr>
<td>-810</td>
<td>same</td>
</tr>
<tr>
<td>-815</td>
<td>pahoehoe, dense, gray</td>
</tr>
<tr>
<td>-820</td>
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</tr>
<tr>
<td>-825</td>
<td>same</td>
</tr>
<tr>
<td>-835</td>
<td>same</td>
</tr>
<tr>
<td>-840</td>
<td>clinkers, red-brown</td>
</tr>
<tr>
<td>-845</td>
<td>aa, dense</td>
</tr>
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<td>aa, ground up clinkers</td>
</tr>
<tr>
<td>-855</td>
<td>pahoehoe, coated vesicles</td>
</tr>
<tr>
<td>-860</td>
<td>same, brown and gray</td>
</tr>
<tr>
<td>-865</td>
<td>clinkers, red and brown, oliv,</td>
</tr>
<tr>
<td>-870</td>
<td>clinkers, red and brown</td>
</tr>
<tr>
<td>-875</td>
<td>same, olivine and augite</td>
</tr>
<tr>
<td>-880</td>
<td>same, few cinders</td>
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-930  clinkers and aa
-935  aa and clinkers
-940  pahoehoe, olivine
-945  same, brown coatings, olivine
-950  same, brown coatings
-955  same as above, olivine
-960  pahoehoe
-965  same, denser
-970  same, vesicular
-975  pahoehoe
-980  same, denser
-985  same
-990  same, dense and vesicular
-995  same
-1000  same, coatings on vesicles, ol.
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-1010  pahoehoe, red coated vesicles
-1015  same, olivine
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-1075  same as above, red coatings
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-1090  same, denser, some red
-1095  same
-1100  cinders, red-black, much oliv.
-1105  cinders, dark
-1110  same, much olivine
-1115  pahoehoe, dense, much olivine
-1120  same as above
-1125  aa, dense, mixed with clinkers
-1130  aa, dense, coated fractures
-1135  aa, dense, with clinkers
-1140  pahoehoe, black, red bits
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-1155  same as above
-1160  fine cuttings
-1165  dense pahoehoe, fine cuttings
-1170  same as above
-1172  same as above
-790
GENERAL CONDITIONS AND SPECIFICATIONS

dated this ___ day of _____, 1988

SECTION 1-1 - GENERAL

Section 1-1.1 Scope of Work.

The work to be done hereunder includes the furnishing of all labor, material, transportation, tools, supplies, plant, equipment and appurtenances, unless hereinafter specifically excepted, necessary for the complete and satisfactory construction, disinfection, and testing of the proposed water supply well described under Section 1-1.7 below.

Section 1-1.2 Permits, Certificates, Laws, and Ordinances.

The CONTRACTOR shall at his own expense, procure all permits, certificates, and licenses required of him by law for the execution of the work. CONTRACTOR shall comply with all federal, state or local laws, ordinances, or rules and regulations relating to the performance of the work.

Section 1-1.3 Location.

The well to be constructed hereunder is to be located on land owned by Lands of Kapaa situated makai of the Malahoa Highway in the Kapua district of the Island of Hawaii, as is generally described on the map marked as Exhibit "A" and attached to this document.

Section 1-1.4 Local Conditions.

A log of a well drilled and tested by the State of Hawaii (the Okoe Well) approximately 2 miles away is available. No other hydrogeologic information in the vicinity is known to exist. This information is provided to CONTRACTOR for informational purposes only and is in no way a representation by OWNER of the sub-surface conditions of the location where the subject work is to be performed. CONTRACTOR will undertake its own personal investigation to satisfy itself of all local conditions.

Section 1-1.5 Boundaries of Work.

The OWNER shall provide adequate land or rights-of-way for the well specified in this contract and make reasonable suitable provisions for ingress and egress, and the CONTRACTOR
shall not enter on or occupy with men, tools, equipment or materials, any ground outside the property of the OWNER without the written consent of the owner of such ground. Other contractors and employees or agents of the OWNER may for all necessary purposes enter upon the work and premises used by the CONTRACTOR, and the CONTRACTOR shall conduct his work so as not to impede unnecessarily any work being done by others on or adjacent to the site.

Section 1-1.6 Protection of the Site.

Excepting as otherwise provided herein, the CONTRACTOR shall protect all structures, trees and shrubbery during the progress of his work; shall remove from the site debris and unused materials; and shall, upon completion of the work, restore the site as nearly as possible to its original condition, including the replacement, at the CONTRACTOR'S sole expense, of any facility which has been damaged beyond restoration to its original condition, or destroyed. Water pumped from the well shall be conducted to a place where it will be possible to dispose of the water without damage to property or the creation of a nuisance.

Section 1-1.7 General Description of the Well.

The completed well is to consist of the following principal items:

1. A 16-inch diameter cased hole approximately 1,115 feet deep.

2. A 16-inch full flo louvered screen, if available, or a similar type screen which is approved in writing by ENGINEER approximately 40 feet long, capped at the bottom.

3. Cement grout or crushed rock in the annulus space between the 16-inch casing and the outer casing or hole.

4. A 5-hour pump test for yield and drawdown and long term 72-hour continuous uninterrupted pump test.

Section 1-1.8 Facilities or Material to be Furnished by OWNER.

The OWNER shall cause water to be available to the CONTRACTOR at the site of the work, without charge and in a quantity reasonably adequate to service CONTRACTOR's needs.
The water will be provided to CONTRACTOR by means of hydrant located in an area near the five (5) acre research test plot as is generally indicated on the map marked as Exhibit "A" and attached to this document.

Section 1-1.9 Competent Workman.

The CONTRACTOR shall employ only competent workmen for the execution of his work, and all such work shall be performed under the direct supervision of an experienced well driller satisfactory to the ENGINEER. Construction safety standards and use of proper protective gear shall be observed by the CONTRACTOR.

Section 1-1.10 Bonding Requirements.

The CONTRACTOR shall furnish performance and payment bonds each in the amount of $300,000.00 as security for the performance and payment of all CONTRACTOR'S obligations under the Contract Documents. The bonds shall be obtained by CONTRACTOR at a cost not to exceed 4% of the total contract price.

Section 1-1.11 Retainage.

Progress payments will be made as agreed to according to the Contract Documents but in each case of payment, OWNER will retain an amount equal to 10% of the amount owed to CONTRACTOR for work completed. The balance of the total contract price owed to CONTRACTOR which is retained by OWNER during the term of this contract will be paid to CONTRACTOR after the work has been completed in accordance with Section 1-1.12 below.

Section 1-1.12 Completion of Work.

Notwithstanding the definition of substantial completion as is set forth in Section 14.8 of the Standard General Conditions of the Construction Contract attached hereto, the work called for in this contract will be deemed completed upon the latter to occur of the following:

(a) Either upon the expiration of the lien period as defined in Section 507-43 of the Hawaii Revised Statutes or upon the submission of lien releases executed by all parties who may have lien rights for work performed and materials supplied in connection with the work required under these Contract Documents, whichever event occurs first; and

[Signatures]
(b) Upon OWNER's written acceptance of the work required under the Contract Documents including CONTRACTOR's completion of all corrective work that ENGINEER and/or OWNER require.

In the event that CONTRACTOR provides written documentation of lien releases upon completion of the work, CONTRACTOR will also execute and deliver to OWNER an agreement, in form and substance satisfactory to OWNER, which indemnifies OWNER from and against any and all claims or causes of action, from parties who allege interests or liens, for work performed and/or material supplied in connection with the work.

Section 1-1.13 Lien-Free Construction.

CONTRACTOR is required to perform all work in strict accordance with the Contract Documents to insure that all construction will be free of any and all liens by all persons who have or may have lien rights for work performed and/or materials supplied in connection with the work required under these Contract Documents.

Section 1-1.14 Liquidated Damages for Delay in Completion.

OWNER and CONTRACTOR recognize that time is of the essence and therefore, OWNER and CONTRACTOR agree that as liquidated damages for delay, but not as a penalty, CONTRACTOR shall pay OWNER the sum of One Hundred Dollars ($100.00) for each and every day that expires after the date that construction is to be completed pursuant to the Contract Documents.

Section 1-1.15 Contractor's Liability Insurance.

Pursuant to Section 5.3 of the Standard General Conditions of the Construction Contract attached hereto, CONTRACTOR shall purchase and maintain such comprehensive general liability and other insurance as is appropriate for the work being performed and furnished under the CONTRACT DOCUMENTS. CONTRACTOR shall obtain comprehensive general liability insurance in the total aggregate amount of $1,000,000.00 with OWNER listed on the insurance policy as an Additional Insured. All of the policies of insurance required to be purchased and maintained for the certificates or other evidence thereof, shall contain a provision or endorsement that the coverage afforded will not be cancelled, materially changed or renewal refused until at least 30 days' prior written notice has been given OWNER and ENGINEER by certified mail. CONTRACTOR shall furnish to OWNER and ENGINEER certificates of insurance evidencing the existence of all required insurance.

"OWNER"

"CONTRACTOR"
Section 1-1.16 Standard General Conditions of the Construction Contract

The Standard General Conditions of the Construction Contract prepared by Engineer's Joint Contract Documents Committee are attached to these General Conditions and Specifications and are incorporated and made an intricate part of this document and the Contract Documents. In the event that any of the provisions contained in the General Conditions and Specifications and the Standard General Conditions of the Construction Contract are in conflict, the provisions contained in these General Conditions and Specifications shall control and will be binding upon the parties hereto.

SECTION 1-2 - CASINGS AND WELL SCREENS

Section 1-2.1 Casings.

Casings to be used hereunder as a part of the permanent well shall be of new steel and meet ASTM A-53, Grade B, .375 inch wall thickness, 16 inch O.D., coated inside and out, and bevel ended. Casings shall be provided with drive shoe of approved type. Casings shall have welded joints. CONTRACTOR shall submit a certificate from the manufacturer stating the specifications of the casing.

Section 1-2.2 Well Screens.

The screen to be furnished and installed hereunder shall be mild steel meeting ASTM A-53, Grade B, .375 inch wall thickness, 16 inch O.D. The screen shall be louvered type with the louver facing down and punched on the full flo pattern or a similar type screen which is approved in writing by ENGINEER. Slot size shall be 1/4 inch. The open area shall be at least 102 square inches per lineal foot. Use of lead packers is not encouraged. The screen shall be welded to the plain casing. Minimum screen length shall be 20 feet. CONTRACTOR shall submit a manufacturer's certificate on screen specifications.

The openings or slots shall be so designed as to prevent clogging and shall be free of jagged edges, irregularities, or anything that will accelerate or contribute to clogging or corrosion.

The screen shall have adequate strength to resist external forces applied to it after installation and to minimize the likelihood of damage during installation. The screen must have no change of alignment at any joint after installa-
tion. The CONTRACTOR shall submit for approval drawings and other information showing the design and method of construction of the screen.

SECTION 1-3 - DESCRIPTION OF WORK

The completed well to be constructed hereunder shall comprise the following sections:

A first section estimated to be 1,116 feet long, in rock extending from the surface to a point approximately 1,115 feet below the surface of the ground. The first section shall be drilled approximately 20 inches in diameter and shall be cased with 16 inch ID pipe which shall extend from a point 1 foot above the ground surface to approximately 35 feet above the bottom of the 20 inch hole.

A second section consisting of 30 feet of 16 inch nominal diameter well screen which shall extend to the bottom of the 20 inch hole.

The annulus space between the 20 inch hole and the 16 inch pipe shall be filled with cement grout from the surface to a point 100 feet below the surface. The annular between the 20 inch drilled hole and the 16 inch casing more than 100 feet below the surface shall be filled with No. 3 crushed basalt and approved by ENGINEER. The crushed basalt fill shall be carefully and slowly placed into the annulus to prevent bridging and creating large voids in the fill. Water may be used during placement to prevent bridging. Frequent sounding shall be made to insure uniform placement around the casing and to prevent bridging. The top of the 16 inch casing shall be closed with a blank flange. Water pumped from the well shall be conducted by ditch or pipe 50 feet downslope from the well.

SECTION 1-4 - TESTING FOR YIELD AND DRAWDOWN

Section 1-4.1 Time of Test.

After the well has been completely constructed and cleaned out and its depth accurately measured, the CONTRACTOR shall notify the ENGINEER to that effect and shall make the necessary arrangements for conducting a final pumping test. Besides this final test the ENGINEER may order the CONTRACTOR to make such additional pumping tests during and after construction as he deems necessary. All tests shall be run with similar equipment and in a like manner to that hereinafter described.
Section 1-4.2 Test Pump.

The CONTRACTOR shall furnish and install necessary pumping equipment capable of pumping to the required point of discharge a maximum of at least 1200 gpm with the pumping level 1,150 feet below ground but with satisfactory throttling devices, so that the discharge may be reduced to 200 gpm.

The pumping unit shall be complete with prime mover of ample power, and controls and appurtenances and shall be capable of being operated without interruption for a period of 96 hours.

Section 1-4.3 Auxiliary Equipment.

The CONTRACTOR shall furnish all necessary discharge piping for the pumping unit, which shall be of sufficient size and length to conduct the water being pumped a distance of 50 feet from the well. He shall also furnish, install and maintain a calibrated water meter of approved size and type for measuring the flow of water. To measure the elevation of the water level in the well, an air line complete with gate valve, hand pump, and check valve shall be provided. Unless otherwise permitted, the air line shall be securely fastened to the pumping unit and shall terminate approximately at the maximum desired pumping level stated in Section 1-4.2, but shall in no case be nearer than 2 feet to the end of the suction pipe. A calibrated pressure gage operating in the range of 0 to 25 psi shall be used for measuring drawdown during pumping.

Section 1-4.4 Duration of Yield-Drawdown and Long Term Tests.

Except as otherwise provided, the CONTRACTOR shall furnish all labor, motive power, lubricating oil and other necessary materials, equipment, labor, and supplies required and shall operate the pumping unit at such rates of discharge and for such periods of time as directed, excepting that the final test shall be run for a period of 72 hours. Accidental interruptions may, if so agreed upon between the CONTRACTOR and ENGINEER be compensated for by correspondingly extending the time of the completion of the test run. After the completion of the final test the CONTRACTOR shall remove by bailing, sand pumping, or other methods any sand, stones, or other foreign material that may have become deposited in the well. Time stated for the duration of the final test is a minimum only, and the ENGINEER reserves the right to require the CONTRACTOR to extend such period of test, or to make additional tests.

[Signature]
Section 1-4.5 Well Surging.

Before test pumping begins, the well shall be developed by surging. The well shall be purged clean of all cuttings and foreign matter until a sample meets the turbidity requirements of Section 1-9.3.

SECTION 1-5 - GROUTING AND SEALING

Section 1-5.1 Grouting Material.

The annular space between the inner casing and the outer casing or hole shall be filled with cement grout from the surface to a point 100 feet below the surface. Grout shall be proportioned of cement and the minimum quantity of water (not over 6 gallons per cubic foot of cement) required to give a mixture of such consistency that it can be forced through the grout pipes. The mixture, method of mixing, and consistency of grout shall be approved by the ENGINEER.

Section 1-5.2 Placement of Grout.

Before proceeding with the placing of the grout, the CONTRACTOR shall secure the ENGINEER'S approval of the method he proposes to use. No method will be approved that does not specify the forcing of grout from the bottom of the space to be grouted towards the surface. A suitable cement retainer, packer, or plug shall be provided at the bottom of the inner casing so that grout will not leak through into the bottom of the well. Prior to the continuous grouting, a preliminary plug of 5 bags of cement weighing 94 pounds each mixed with water to a consistency approved by ENGINEER shall be placed in the annulus and allowed to set for 24 hours before proceeding. The remaining grouting shall be done continuously and in such a manner as will insure the entire filling of the annular space in one operation. No drilling operations or other work in the well will be permitted within 72 hours after grouting of casings. If quick-setting cement is used, this period may be reduced to 24 hours.

Section 1-5.3 Grouting Liners.

Where required by the ENGINEER, liners shall be grouted. The method to be used shall be detailed by the CONTRACTOR for the approval of the ENGINEER.
SECTION 1-6 - TESTING FOR PLUMBNESS AND ALIGNMENT

Section 1-6.1 Requirement to Test.

All holes shall be constructed and all casings and liners set round, plumb, and true to line as defined herein. To demonstrate the compliance of this work with this requirement, the CONTRACTOR shall furnish all labor, tools, and equipment and shall make the tests described herein in the manner prescribed by, and to the satisfaction of, the ENGINEER. Tests for plumbness and alignment must be made after the complete construction of the well and before its acceptance. Additional tests, however, may be made by the CONTRACTOR during the performance of the work. No specific payments shall be made by the OWNER for making these tests.

Section 1-6.2 Description of Test.

Plumbness and alignment shall be tested by lowering into the well to the bottom of the cased hole a section of pipe 40 feet long or a dummy of the same length. The outer diameter of the plumb shall not be more than 1/2 inch smaller than the diameter of that part of the casing or hole being tested. If a dummy is used, it shall consist of a rigid spindle not less than 14 inches O.D. with a wall thickness of not less than .375 inch and three rings, each being 12 inches wide. The rings shall be truly cylindrical and shall be spaced one at each end of the dummy and one ring in the center thereof. The central member of the dummy shall be rigid so that it will maintain the alignment of the axes of the rings. OWNER, at its own expense, may exercise the right to use a video camera to further verify interior of casing and screen.

Section 1-6.3 Requirements for Plumbness and Alignment.

Should the plumb or dummy fail to move freely throughout the length of the casing or hole to the bottom, or should the well vary from the vertical in excess of two-thirds the inside diameter per any 100 feet of depth, the plumbness and alignment of the well shall be corrected by the CONTRACTOR at his own expense. Should the CONTRACTOR fail to correct such faulty alignment or plumbness, the ENGINEER may refuse to accept the well. The ENGINEER, with the prior written consent of OWNER, may waive the requirements of this paragraph for plumbness if in ENGINEER's judgment, (a) the CONTRACTOR has exercised all possible care in constructing the well and the defect is due to circumstances beyond his control; (b) the utility of the completed well will not be materially affected; and (c) the

"OWNER"

"CONTRACTOR"
cost of necessary remedial measures will be excessive. In no event will the provisions of this paragraph with respect to alignment be waived.

SECTION 1-7 - DISINFECTION

Section 1-7.1 Time of Disinfection.

After the well has been completely constructed, it shall be thoroughly cleaned of all foreign substances, including rocks, timbers, rope, debris of any kind, cement, oil, grease, joint dope, and scum. The casing pipe shall be thoroughly swabbed, using alkalis if necessary, to remove oil, grease, or joint dope. The well shall then be disinfected with a chlorine solution.

Section 1-7.2 Chlorine Solution.

The chlorine solution used for disinfecting the well shall be of such volume and strength and shall be so applied that a concentration of at least 50 ppm of chlorine shall be obtained in all parts of the well. Chlorine solution shall be prepared and applied in accordance with the directions of, and to the satisfaction of, the ENGINEER, and shall remain in the well for a period of at least two hours.

Section 1-7.3 Requirements for Disinfection of Test Pump.

In the event that the test pump is installed after the well has been disinfected, all exterior parts of the test pump coming in contact with the water shall be washed with a one percent solution of chlorine bleach.

SECTION 1-8 - SAMPLES AND RECORDS

Section 1-8.1 Samples of Formations.

The CONTRACTOR shall keep an accurate record of the elevation to which the water level stabilizes as each aquifer is encountered and of the location of the top and bottom of each stratum penetrated, and shall save and deliver to the ENGINEER a sample taken from each 5 feet of drilling and at every change of formation.

Section 1-8.2 Record of Casing Pipe.

The CONTRACTOR shall keep an exact record of the order in which each piece of pipe is installed in the well, identifying each by number, size, and length.

[Signatures]

"OWNER"

"CONTRACTOR"
Section 1-8.3 Record of Material Removed During Development.

The total number of cubic feet of material removed from the well as a result of developing the well shall be recorded by the CONTRACTOR.

Section 1-8.4 Liquidated Damages for Failure to Deliver Samples or Records.

Failure on the part of the CONTRACTOR to obtain, preserve and deliver such samples or records to the ENGINEER shall be considered as actual damage to the OWNER and shall authorize the OWNER to retain from moneys due or to become due under the contract the sum of $100.00 as liquidated damages for each sample that the CONTRACTOR shall fail to obtain, preserve, and deliver, or for each length of pipe not properly measured and recorded in the order in which it was placed in the well.

Section 1-8.5 Daily Reports.

The CONTRACTOR shall submit a daily report describing the nature of material encountered, the work done during each day, including such items of work accomplished as depth drilled, casing set, the water level in the well at the beginning and end of each shift, and such other pertinent data as he is requested to record by the ENGINEER.

SECTION 1-9 - PROTECTION OF QUALITY OF WATER

Section 1-9.1 Precautions to be Taken.

The CONTRACTOR shall take such precautions as are necessary or as may be required to permanently prevent contaminated water or water having undesirable physical or chemical characteristics from entering, through the opening made by the CONTRACTOR in drilling the well, the stratum from which the well is to draw its supply. He shall also take all necessary precautions during the construction period to prevent contaminated water, gasoline, or any other contaminant from entering the well, either through the opening or by seepage through the ground surface.

Only materials approved by ENGINEER shall be introduced into the well bore or used by the CONTRACTOR. No drilling mud shall be used below the water table.

\[ "OWNER" \]

\[ "CONTRACTOR" \]
Section 1-9.2 Corrective Work.

In the event that the well becomes contaminated or that water having undesirable physical or chemical characteristics enters the well because of the neglect of the CONTRACTOR, he shall, at his own expense, perform such work or supply such casings, seals, sterilizing agents or other material as may be necessary to eliminate the contamination or shut off the undesirable water.

Section 1-9.3 Freedom From Sand and Turbidity.

The CONTRACTOR shall exercise extreme care in the performance of his work in order to prevent the breakdown or caving in of strata overlying that from which the water is to be drawn. He shall develop, pump, or bail the well by such methods as may be approved by the ENGINEER, until the water pumped from the well shall be substantially free from sand and until the turbidity is less than 5 mg/l as determined by the appropriate method for determining silica as outlined in STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, or as measured by a centrifugal sand-separating motor, such as described in JOURN. AWWA, 46:123 (Feb. 1954) or equivalent.

SECTION 1-10 - TEMPORARY CAPPING

At all times during the progress of the work, the CONTRACTOR shall protect the well in such manner as to effectively prevent either tampering with the well, or the entrance of foreign matter into it. Upon completion of the well the CONTRACTOR shall provide and set a substantial screwed, flanged, or welded cap satisfactory to the ENGINEER.

SECTION 1-11 - ABANDONMENT OF WELL

In the event that the CONTRACTOR shall fail to sink the well to the depth specified or to such lesser depth as ordered by the ENGINEER, or should abandon the well because of loss of tools or for any other cause, he shall, if requested, and as directed by the ENGINEER, fill the abandoned hole with crushed rock inside the casing to within 25 feet of the surface and a 25 foot concrete plug to the surface. Salvaged material furnished by the CONTRACTOR shall remain his property.
SECTION 1-12 - MEASUREMENT AND COMPENSATION

Section 1-12.1 Setting Up and Removing Equipment.

Under this item the CONTRACTOR shall be paid the price bid in the proposal as full compensation for bringing his equipment to the job and setting up and removing same. Setting up shall include drilling a minimum of 10 feet.

Section 1-12.2 Drilling, Casing and Sealing 20-inch Hole.

There are included under this item the costs of the casing pipe and of all drive shoes, couplings, fittings, seals, and the like. Payment shall be based on the vertical distance measured between the limits specified for the cased hole.

Section 1-12.3 Grouting or Placing Crushed Basalt in Annular Space Between 20-inch Conductor Casing and 16-inch Casing.

Under this item the CONTRACTOR shall be paid the unit price per linear foot for the amount bid in the proposal for furnishing and placing grout in the annular space between the 16-inch casing and the 20-inch outer casing or hole. Measurement shall be made of the actual number of linear feet of grouting the annular space where and as directed.

Section 1-12.4 Testing for Yield-Drawdown and Long Term Drawdown.

Under this item the CONTRACTOR shall be paid the unit price bid in the proposal for making the required tests for yield and drawdown. Tests shall be made with equipment previously described herein and for such period as may be directed by the ENGINEER. Allowance shall be made up to a maximum of 48 hours for the actual time necessary to install and place the pump in operation, and an additional allowance shall be made up to a maximum of 48 hours for the time necessary for removing the test pump. Except for these two allowances, payment under this item shall only be made for the actual length of time the pump is in operation, and deductions shall be made for all breakdowns or stops or for such tests as are not in complete accordance with the specifications. No payment shall be made hereunder for tests made by the CONTRACTOR for his own information or for pumping to develop the well. If, for any reason, pumping equipment fails prior to the completion of the specified period of test, the CONTRACTOR shall not receive payment for the partial test, and shall not start a subsequent test until the water level has reached stability.

"OWNER"

"CONTRACTOR"
Section 1-12.5 Miscellaneous Work and Material.

Under this item the CONTRACTOR shall be paid the lump sum bid in the proposal as full compensation for special work, if any, itemized in the proposal.
ADDENDUM TO CONTRACT DOCUMENTS

This Addendum is hereby attached to and made a part of that certain Agreement ("Construction Contract") between MacFARMS OF HAWAII, INC., a Hawaii corporation ("OWNER") and PAUL FRANDSEN & ASSOCIATES ("CONTRACTOR") and all CONTRACT DOCUMENTS relating to and referred to in the Construction Contract. The defined terms in said CONTRACT DOCUMENTS shall have the same meaning when used in this Addendum. In return for the compensation and mutual covenants set forth below, the OWNER and CONTRACTOR hereby agree that CONTRACTOR will perform all work necessary to complete the job described in Section 2 below relating to the water well owned by the State of Hawaii and known as the Okoe Well.

1. STATE APPROVAL FOR WORK.

OWNER shall obtain from the State of Hawaii all permits, approvals, consents or authorizations necessary to enable CONTRACTOR to perform the work described in Section 2 below.

2. SCOPE OF WORK.

CONTRACTOR hereby agrees to furnish all the equipment and labor necessary to perform the following work:
2.1 Check Alignment of Okoe Well.

The CONTRACTOR shall check the plumbness and alignment of the Okoe Well using the method described in Section 1-6 of the GENERAL CONDITIONS AND SPECIFICATIONS. CONTRACTOR shall bear no responsibility for any misalignment discovered, other than that which may have resulted from CONTRACTOR'S negligent acts or omissions. CONTRACTOR shall leave the well in at least as good condition as it was at the beginning of the alignment test. At OWNER'S option, OWNER will have a representative present during the test.

2.2 Set Deep Well Turbine at Okoe Well.

The CONTRACTOR shall provide labor and equipment required to set a Layne deep well turbine pump in the Okoe Well. The pump consists of a bowl assembly, approximately 840 feet of 8-inch by 3-inch by one 15/16-inch column, tube and shaft, an airline, and a discharge head. The column, tube and shaft are in sections 20 feet long, and are joined by screwed couplers. One or more representatives of the pump manufacturer, Layne Pumps, Inc., will be present during the installation and will be responsible for preloading the line-shaft, adjusting bowl settings, and the initial pump start-up procedure.
3. **CONTRACTOR RESPONSIBLE FOR DAMAGE.**

CONTRACTOR shall be responsible for any damage done to the pump, column, tube, shaft, well, or motor which occurs while CONTRACTOR is performing the work described above.

4. **COMPENSATION.**

Notwithstanding the terms and conditions set forth in any of the other CONTRACT DOCUMENTS relating to contract payments from OWNER to CONTRACTOR, OWNER shall pay to CONTRACTOR the sum of $208.33 per hour for performing the work described in Section 2 above. Payment of the entire contract price for work described in Section 2 above relating to the Okoe Well will be due and payable to CONTRACTOR upon lien free completion of all work required under Section 2 above and acceptance of the work by ENGINEER and OWNER, including CONTRACTOR's completion of all corrective work that ENGINEER and/or OWNER might require.

5. **TIME FOR COMPLETION.**

CONTRACTOR shall commence work within ten (10) days of receipt of OWNER'S Notice to Proceed and shall complete all the work relating to the Okoe Well as described in Section 2 above within 15 days after the date that OWNER gives CONTRACTOR written Notice to Proceed.
6. CONTRACT DOCUMENTS CONTROL.

Except to the extent expressly set forth herein, the CONTRACT DOCUMENTS shall control in the event of any conflict between the terms of this Addendum and the CONTRACT DOCUMENTS.

MacFARMS OF HAWAII, INC.

By

Date: May 23rd 1988

"OWNER"

PAUL FRANDSEN & ASSOCIATES

By

Date: May 28th 1988

"CONTRACTOR"
AGREEMENT

THIS AGREEMENT, made this 29th day of May, 1988, by and between MacFARMS OF HAWAII, INC., a Hawaii corporation (hereinafter and in all Contract Documents called "OWNER") and PAUL FRANDSEN AND ASSOCIATES, doing business as a HAWAIIAN partnership (hereinafter and in all Contract Documents called "CONTRACTOR").

WITNESSETH:

That for and in consideration of the payments and agreements herein after mentioned:

1. The CONTRACTOR will commence and complete the construction of Well No. 1 in strict accordance with the DRAWINGS prepared by PACAM ENGINEERING, INC. (hereinafter and in all Contract Documents called the "ENGINEER") numbered 1054-18 through 1054-19, dated February 29, 1988.

2. The CONTRACTOR will furnish all of the materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the PROJECT described herein.

3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within 10 calendar days after the date of the NOTICE TO PROCEED and will complete the same within 180 calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and to comply with all of the terms and conditions set forth in each of the CONTRACT DOCUMENTS.

5. The term "CONTRACT DOCUMENTS" shall mean and include the following:
   A. Advertisement for Bid
   B. Information for Bidders
   C. Bid
   D. Agreement
   E. General Conditions and Specifications and the Standard General Conditions of the Construction Contract attached thereto.
   F. Performance BOND
   G. Notice of Award
   H. Notice of Proceed

6. The OWNER will pay to the CONTRACTOR a Contract price not to exceed $300,000.00 in the manner and at such times as set forth in the CONTRACT DOCUMENTS. The contract price is based upon the following cost and fee schedule:
(1) Setting up: $30,000.00
(2) Drilling: $155.00 per lineal foot.
(3) Casing and sealing plain casing: $20 per lineal foot
(4) Drilling and screening with 16 inch louvered casing:
  $50.00 per lineal foot.
(5) Grouting and placing crushed basalt: $31.93 per lineal foot.
(6) Test pumping (using contractor supplied pump): $208.33 per hour.

In the event that the depth of the well shall exceed 115 feet, the maximum contract price set forth above shall be subject to increase based upon the above cost and fee schedule and written approval by OWNER.

7. OWNER shall have the sole and absolute right at any time to assign and transfer, any and all rights and obligations under this Agreement to any subsidiary or affiliated company of OWNER, including but not limited to Puu Hinahina Water Company, Inc.

8. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the Standard General Conditions. Applications for Payment will be processed by ENGINEER as provided in the Standard General Conditions.

   a. Progress Payments. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recom-
mended by ENGINEER, on or about the 30th day of each month during construction as provided below. All progress payments will be on the basis of the progress of the Work measured by the schedule of values established in paragraph 2.9 of the Standard General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements. The CONTRACTOR'S requests for progress payments shall be made in writing and submitted after the first business day of each month. The closing date for submittals for progress payments shall be the last business day of each month.

b. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.7 of the Standard General Conditions:

i) 80% of the value of the Work completed; and

ii) 80% of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to OWNER as provided in paragraph 14.2 of the Standard Conditions).
c. Upon Substantial Completion, in an amount sufficient to increase total payments to CONTRACTOR to 80% of the Contract Price, less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.7 of the General Conditions.

d. Final Payment. Upon final completion and acceptance of the Work in accordance with Section 1-1.12 of the General Conditions and paragraph 14.13 of the Standard General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER.

9. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized official, four (4) copies of this Agreement, each of which shall be deemed an original on the date first above written.

OWNER:

MacFARMS OF HAWAII, INC.

By: [Signature]

Name: [Name]

(Please Type)

Title: [Title]
ATTEST:

Name HILTON ROLLIN
(Please Type)
Title: OCCUPY MANAGER

CONTRACTOR:
Paul Frandson and Ass.
By: Paul Frandson - Brian Titley
Name: Paul Frandson
(Please Type) BRAD Titley
Title: Consultant

ATTEST:

Name __________________________
(Please Type)
Title: __________________________
April 5, 1988: Supersedes map issued on March 3, 1988

MacFarms Wells

0952-01 (#1)
0852-01 (#2)
0852-02 (#3)
0852-03 (#4)
0751-01 (#5)
FACSIMILE MESSAGE

Date/Time: April 28, 1988

To: Sydney Fuke
    FAX No. 969-1531

From: Hilary Brown

Subject: Well Locations

The attached two pages for your information.
Mr. Brown:

As discussed in our June 17, 1998 telephone conversation, you are required to submit monthly water use reports to our office. The last report that was sent to us is attached.

Also, we have not received a Well Completion Report for Well #1 (0952-01). A copy of your well permit is attached for your reference.

We will be mailing you a letter detailing these matters in the near future. Call me if you have any questions.

Aloha,

Neal Fujii
Mr. Mark K. Crawford  
Assistant Orchard Manager  
MacFarms of Hawaii, Inc.  
Box 25 Star Route  
Captain Cook, HI 96704  

Dear Mr. Crawford:

Revocation of Well Permits

Your permits for the construction and testing of MacFarms Wells 0852-01, 0951-01, and 1050-01 have been revoked because they were not constructed within the two-year period from the date of issuance. However, you may reapply for the permits at any time. Please be aware that all permits have conditions which require that construction should start within six months from the date of issuance and that the well must be completed within two years from the date of issuance. We have enclosed permit application forms for your use.

Call the Regulation Branch at 587-0225 if you have any questions.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

ES:ko
Enc.
September 1, 1992

Rae M. Loui
Deputy Director
Department of Land and Natural Resources
Commission on Water Resource Management
P. O. Box 621
Honolulu, HI  96809

Dear Mr. Loui,

We have discussed the issue concerning the revocation of well permits 0951-01, 0852-01 and 1050-01 and would ask the Commission to continue the permits as allowed by the rules.

We are currently considering irrigation of our orchards that are situated above the Belt Highway. In addition to an irrigation project, we are also discussing the benefits of mixing better quality water with our current brackish wells. As you may be aware, the macadamia industry continues to be effected by the difficult economic climate and this accounts for the primary delay with the irrigation work.

We would like your office to advise us on what procedure we need to follow to insure that the above well permits will not be revoked.

We look forward to your favorable reply.

Sincerely,

Mark K. Crawford
Assistant Orchard Manager

MC:mkh

cc: H. Brown
    C. Young
    R. Vidgen
Certified Mail

TO: MacFarms of Hawaii
Star Route Box 25
Captain Cook, Hawaii 96704

REVOCATION OF WELL CONSTRUCTION PERMITS
Previously issued in 1989 and 1990 for
MacFarms Wells 2, 3, and 4
(Well Nos. 0951-01, 0852-01, and 1050-01)
Kapua, South Kona, Hawaii

On August 24, 1989, the Commission on Water Resource Management issued you permits to construct and test Well Nos. 0951-01 and 0852-01. On October 2, 1990, the Commission issued you a permit to construct and test Well No. 1050-01. Each of these permits required that work be started within six months and be completed within two years from the date of issuance.

We have been informed by Mark Crawford of MacFarms that, as of this date, none of these wells have been constructed or are under construction. Accordingly, we conclude that these wells were not and will not be constructed within the allowable period and that the permits should be revoked. You are hereby notified in accordance with H.A.R. §13-168-12(k) that the permits to construct the above-mentioned wells shall be revoked within 60 days of the date of this letter unless you can show good cause that they should not be revoked.

On a related matter, we request that you complete the enclosed Well Completion Report for the existing MacFarms Well 1 (Well No. 0952-01) and return the form together with an as-built drawing and location map for the well to our office for processing. Thank you for your time and cooperation.

Sincerely,

RAE M. LOUI
Deputy Director

BR:ky
Enc.
FROM: J/i.d

SURVEY BRANCH
Division of Water Resource Management

DATE: 6/15/89

FILE IN: _______ _

TO: INITIAL: PLEASE: REMARKS:

D. LUM See Me I spoke with Rick Vidgen of MacFarms

E. Sakoda Call (phone). They have drilled MacFarms No. 1 with

D. Nakano Review & Comment marginal results (8700 ppm Cl) so

P. Haraguchi Take Action they revised their plans. They no

R. Jinnai Investigate & Report longer plan to drill wells 2 thru 5

M. Ohye Draft Reply as originally proposed. Their application

----------- Type Draft (revd 6/19/89) do not adequately show the

----------- Type Final cc: _ location of the 2 new proposed wells

----------- Acknowledge Receipt

----------- Xerox copies

----------- File

----------- Mail

FOR YOUR

D. Hamada Approval

K. Oshiro Signature

M. Tagomori Information

G. Matsumoto Information

G. Akita Information

L. Chang Information

S. Kokubun Information

----------- D. Hamada _ File

----------- G. Akita _ Approval

----------- K. Oshiro _ (revd 6/19/89)

----------- L. Chang _ (revd 6/19/89)

----------- S. Kokubun _ (revd 6/19/89)

----------- Type Draft

----------- Type Final cc:

----------- Xerox copies

----------- File

----------- Mail

----------- Acknowledge Receipt

----------- Review & Comment

----------- Investigate & Report

----------- Take Action

----------- Call (phone)

----------- See Me

----------- FILE IN:

REV. 4/88

OLD NO. < WELL NO. 2 (0951-01) NEW NO. #2 (0950-01)

WELL NO. 3 (0852-01) 

" " " #3 (1050-01)
April 6, 1988

Mr. Hilary Brown
Orchard Manager
MacFarms of Hawaii
Box 25 Star Route
Captain Cook, Hawaii 96704

Dear Mr. Brown:

Thank you for your letter of March 15, 1988, regarding the well site changes to the MacFarms of Hawaii drilling permits. We have modified our records to incorporate the changes as follows:

State Well No. 0852-01 (MacFarms #1): Tax Map Key changed to 8-9-11:11

State Well No. 0852-01 (MacFarms #2): Tax Map Key changed to 8-9-11:12

State Well No. 0852-02 (MacFarms #3): Tax Map Key changed to 8-9-11:12

There are no changes in the remaining two well permits. Please replace your existing well location map with the enclosed corrected map.

Concerning State Well No. 0751-01 (MacFarms #5), please send us a copy of the easement agreement with Farms of Kapua, Ltd. for our information and files.

Please notify us prior to start of drilling of each well.

Sincerely,

[Signature]

HANABU TAGONOPI
Deputy for Water Resource Management

ES:ko
Enc.
ce: USGS
Dept. of Health,
Drinking Water Program
Ground Water Protection Program
Hawaii DWS
<table>
<thead>
<tr>
<th>TO:</th>
<th>INITIAL:</th>
<th>FROM:</th>
<th>DATE:</th>
<th>PLEASE:</th>
<th>REMARKS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. TAGOMORI</td>
<td>-</td>
<td></td>
<td></td>
<td>See Me</td>
<td></td>
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<tr>
<td>G. Matsumoto</td>
<td>-</td>
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<td>Take Action By</td>
<td>Do not sit on file if</td>
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<tr>
<td>L. Chang</td>
<td>-</td>
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<td>Route to Your Branch</td>
<td>in 1st 1st</td>
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<tr>
<td>G. Akita</td>
<td>-</td>
<td></td>
<td></td>
<td>Review &amp; Comment</td>
<td>U.S. Interest to be</td>
</tr>
</tbody>
</table>
| D. Lum      | -        |       |      | Draft Reply By | involved in no.
| S. Miyamoto | -        |       |      | Acknowledge Receipt | by quick answer. |
| S. Samuels  | -        |       |      | Xerox copies | John Rep. if review |
| P. Haraguchi| -        |       |      | Return    | of reply will take time |
| N. Imada    | -        |       |      | File     |          |
| P. Matsuo   | -        |       |      | Mail     |          |
| N. Kaneshiro| -        |       |      | For Information |          |
| R. Suzuki   | -        |       |      |          |          |
| S. Kokubun  | -        |       |      |          |          |
| D. Hamada   | -        |       |      |          |          |
| L. Nanbu    | -        |       |      |          |          |
| F. Ching    | -        |       |      |          |          |
March 15, 1988

Department of Land &
Natural Resources
Attn: Mr. Edward Sakoda
P. O. Box 621
Honolulu, HI 96809

Dear Mr. Sakoda:

Re: MacFarms of Hawaii Drilling Permits

As I mentioned to you in a recent telephone conversation, we need to make some changes to our recently approved well drilling permits.

To aid my explanation of the problem, attached are two maps. Exhibit #1 shows the location of the approved sites and Exhibit #2 shows the new preferred sites.

Our most pressing problem exists with Well #5. This well site is actually located on TMK 8-9-11-1. We had quoted on our application form TMK 8-9-11-03. Please refer to the attached maps.

Also to be resolved with this issue is the fact that TMK 8-9-11-1 is owned by Farms of Kapua Ltd. with whom we have an easement agreement. Could you please advise what type of documentation we now need to support this change?

Could you please let me know as soon as possible where we stand with this issue.

Yours sincerely,

Hilary Brown
Orchard Manager

wb

attachments (2)
TO: Puu Hinahina Water Company  
Star Route, Box 25  
Captain Cook, Hawaii 96704

In accordance with Chapter 166 of Title 13, "Rules for the Control of Ground Water Use in the State of Hawaii", your application to drill State Well No. 0952-01 for agricultural use at Tax Map Key: 8-9-11:11 is approved subject to the following conditions:

1. 100 feet of cement grout shall be used instead of the 10 feet indicated on the proposed section of well.

2. A Driller's Well Completion Report (enclosed) shall be submitted to the Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96809, within 60 days after completion of the well.

3. Water level elevation, salinity and pumping test data shall be submitted within 60 days after testing of the well.

4. Reports of pumpage shall be submitted monthly after the well is put into production.

5. An "as-built" drawing of the well and a map showing the exact location of the well shall be submitted upon completion of the well.

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

7. 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.

MAR 3 1988  
WILLIAM W. PATY  
Chairperson of the Board

Date of Issuance

Enc. (Driller's Report form)  
cc: USGS  
Department of Health,  
Drinking Water Program  
Ground Water Protection Program  
Hawaii Dept. of Water Supply
January 28, 1988

State of Hawaii
Department of Land and Natural Resources
Division of Water and Land Development
P. O. Box 621
Honolulu, Hawaii 96809

ATTN: Mr. Dan Lum

Dear Sirs:

RE: Well Drilling Permits (5)
Puu Hinahina Water Company
South Kona, Hawaii

Following up on our meeting yesterday, please find attached applications for five (5) well drilling permits on lands identified by TMK: 8-9-11: 3, 9, 11, and 12. These parcels are all situated on properties owned by Mac Farms of Hawaii, Inc., in South Kona, Hawaii.

These wells are part of the applicant's overall program to provide irrigated water to its macadamia nut orchards. Such a program would assist tremendously in the long term viability of this important agricultural industry.

Inasmuch as the applicant wishes to have this irrigation system in operation by March of this year, your early review and action of these applications would be most appreciated.

Thank you very much for your interest and time yesterday. We look forward to hearing from your office at your earliest practicable opportunity.

Should you have any questions or need additional information on this matter, please feel free to contact me.

Sincerely,

SIDNEY M. FUKE
Planning Consultant

encl
cc Mr. Rick Vidgen
Dear Applicant:

This is a Department of Land and Natural Resources Master Application Form. It is part of the Department's effort to streamline the permit process.

This form is to be used if you desire to apply for one or more of the major land or water permits which are administered by this department. They are as follows:

<table>
<thead>
<tr>
<th>TYPE</th>
<th>PERMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Use of State Lands, Including Submerged State Lands for Any Purpose, and</td>
</tr>
<tr>
<td>B.</td>
<td>Conservation District Use Application for Either Private or Public Lands</td>
</tr>
<tr>
<td>C.</td>
<td>A Permit to Withdraw Water for a Beneficial Use, Within any Designated Ground Water Control Area</td>
</tr>
<tr>
<td>D.</td>
<td>A Permit to Supply Water for a Beneficial Use Within any Designated Ground Water Control Area</td>
</tr>
<tr>
<td>E.</td>
<td>A Well Drilling or Modification Permit Anywhere Within the State</td>
</tr>
</tbody>
</table>

INSTRUCTIONS

All Applicants Are Required To Fill Out Page 1.
Applicants for Type A Permit Must Fill Out Page 1-2.
Applicants for Type B Permit Must Fill Out Page 1-4.
Applicants for Type C or D Permit Must Fill Out Page 1, 2, 5.
Applicants for Type E Permit Must Fill Out Pages 1, 2, 6, 7.

Please follow the instructions on the respective pages. Should you desire to apply for more than one permit at the same time, please fill out the required pages, and indicate to us so that we may process them.
STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
P. O. BOX 621  
HONOLULU, HAWAII 96809  

DEPARTMENT MASTER APPLICATION FORM  

(Print or Type)  

I. LANDOWNER/WATER SOURCE OWNER  
(If State land, to be filled in by Government Agency in control of property)  
Name MACFARMS OF HAWAII  
Address STAR RT., BOX 25  
CAPTAIN COOK, HAWAII  
96704  
Telephone No. 808-328-2435  
SIGNATURE  
Date JANUARY, 1988  

II. APPLICANT (Water Use, omit if applicant is landowner)  
Name PUU HINAHINA WATER COMPANY  
Address STAR ROUTE, BOX 25  
CAPTAIN COOK, HAWAII 96704  
Telephone No. 808-328-2435  
Interest in Property OWNER  
(Indicate interest in property; submit written evidence of this interest)  
SIGNATURE  
Date  

*If for a Corporation, Partnership, Agency or Organization, must be signed by an authorized officer.  

III. TYPE OF PERMIT(S) APPLYING FOR  
( ) A. State Lands  
( ) B. Conservation District Use  
( ) C. Withdraw Water From A Ground Water Control Area  
( ) D. Supply Water From A Ground Water Control Area  
( ) E. Well Drilling/Modification  

IV. WELL OR LAND PARCEL LOCATION REQUESTED  
District SOUTH KONA  
Island HAWAII  
County HAWAII  
Tax Map Key 8-9-11-11  
Area of Parcel 228.225  
(indicate in acres or sq. ft.)  
Term (if lease) N/A  

- 1 -
V. Environmental Requirements

Pursuant to Chapter 343, Hawaii Revised Statutes, and in accordance with Title 11; Chapter 200, Environmental Impact Statement Rules for applicant actions, an Environmental assessment of the proposed use must be attached. The Environmental assessment shall include, but not be limited to the following:

1. Identification of applicant;
2. Identification of approving agency;
3. Identification of agencies consulted in making assessment;
4. General description of the action's technical, economic, social, and environmental characteristics;
5. Summary description of the affected environment, including suitable and adequate location and site maps;
6. Identification and summary of major impacts and alternatives considered, if any;
7. Proposed mitigation measures, if any;
8. Determination;
January 14, 1988

DRAFT

ENVIRONMENTAL ASSESSMENT

MacFarms of Hawaii
Well Drilling Permits
Well No. MacFarms 1

(1) IDENTIFICATION OF APPLICANT:

MacFarms of Hawaii, Inc.
Attention: Hilary Brown
Star Route, Box 25
Captain Cook, Hawaii 96704

Telephone: (808) 328-2435

(2) IDENTIFICATION OF APPROVING AGENCY:

State of Hawaii
Department of Land and Natural Resources
P. O. Box 621
Honolulu, HI 96809

(3) IDENTIFICATION OF AGENCIES CONSULTED IN MAKING ASSESSMENT:

None

(4) GENERAL DESCRIPTION OF THE PROPOSAL'S TECHNICAL, ECONOMIC, SOCIAL AND ENVIRONMENTAL CHARACTERISTICS:

4.1. Technical. The project involves drilling a well, installing a pump and motor, and using the water from the well to irrigate macadamia nut trees and/or other crops. The bore size of the well will be approximately 18 inches in diameter. The hole will be cased with a 12 to 14 inch steel casing. A wedge-wire intake screen will be provided.
4.2. **Economic.** The benefits of increased production in the existing macadamia nut orchards as a result of irrigation and the addition of new orchards made feasible by irrigation will be significant. With the increase in production will come the need for more pickers, increased processing requirements, and increased transportation requirements.

4.3. **Social.** Increased employment opportunities in the South Kona District have been a goal of the State of Hawaii for many years. This project will provide such opportunities.

4.4. **Environmental.** No adverse environmental impacts are discernible. The site is within an existing orchard. It is within lands owned by MacFarms of Hawaii, and is well away from any tourist destination. The soil is of recent volcanic origin, and is thus not subject to erosion along roadbeds or access lanes. There will be no effect on native flora or fauna in the region.

(5) **DESCRIPTION OF THE AFFECTED ENVIRONMENT:**

The site is within an existing macadamia tree orchard, parts of which has been abandoned because rainfall in the area is inadequate to support economic macadamia nut production.

(6) **IDENTIFICATION OF MAJOR IMPACTS AND ALTERNATIVES CONSIDERED:**

No adverse impacts of the project were determined, thus no alternatives were investigated.

(7) **PROPOSED MITIGATION MEASURES:**

None.

(8) **DETERMINATION:**
APPLICATION FOR (check one)

**WELL DRILLING PERMIT**  **WELL MODIFICATION PERMIT**

Instructions: Send completed application and attachments to the Department of Land and Natural Resources, P.O. Box 621, Honolulu, Hawaii 96809.

Reference: Chapter 166, Department of Land and Natural Resources.

Is the well located in a Designated Ground Water Control Area? ___ Yes    ___ No

If "yes", application must be accompanied by a Water Use and/or Water Supply Permit and a non-refundable filing fee of $100 payable to the Department of Land and Natural Resources. However, if application is for minor modification of well, filing fee may be waived. If "no", no filing fee is required. Filing fee is waived for federal, state, and county government agencies.

1. WELL NAME AND/OR LOCATION: MACFARMS OF HAWAII WELL #1. Attach a plot plan showing well location referenced to established property boundaries.

2. PROPOSED DRILLING COMPANY: UNDETERMINED

3. PROPOSED WORK: **XX** Drill new well  ____ Deepen  ____ Redrill  ____ Alter  ____ Seal  ____ Abandon  ____ Install new pump  ____ Replace pump  ____ Modify pump

Fill in the diagram and briefly describe the proposed work (use back of form if necessary).

PROPOSED SECTION OF WELL

Elevation at top of casing 1121 ft., msl.

Ground Elev.  1120 ft., msl

Cement
Grout 10 ft.

Hole
Dia. 24 in.

Total
Depth 1170 ft.

Rock
Packing 0 ft.

Solid casing:
Material: STEEL
Length 116
Diameter 18
Wall thickness 0.330

Casing: **Perforated**
Material: SS
Length 20
Diameter 12
Wall thickness
Openings 86 sq.in./L

Open Hole:
Length 35
Diameter 18

*Approximate elev. at filing. Final elev. (msl) by a surveyor licensed by the State must be submitted at start of construction.*
4. PROPOSED USE:  __Municipal  __Military  __Agricultural  __Industrial
   __Domestic  __Disposal  __Other (specify) ___________

5. PROPOSED AMOUNT OF WITHDRAWAL: Check most appropriate box and fill in amount.


6. PROPOSED PUMP OR FLOW CAPACITY  __1100____ Gallons per minute
NOTE: PUMP PAD 8'0"x8'0"x1'-0"
REINFORCED CONC. SLAB
S.f = 2000 PSI @ 28 DAYS

DEEP WELL TURBINE
1100 GPM @ 1150 TDH

EXISTING GROUND LEVEL ELEVATION 1120'

18" COLUMN PIPE

NOTE: ALL DIMENSIONS ARE APPROXIMATE