# CHECKLIST

<table>
<thead>
<tr>
<th>Modification</th>
<th>__Well Construction Permit</th>
<th>__Pump Installation Permit</th>
<th>__Water Use Permit Required Also</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Well Name &amp; Number</th>
<th>Olona Flame Tunnel (4211-01)</th>
<th>Island: Hawaii</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Hawaii Dept. of Water Supply</th>
<th>Landowner</th>
<th>TMK:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date application received</th>
<th>9/22/94</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date acknowledged receipt/request more info</th>
<th>OCT 19 1994</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date filing fee deposited</th>
<th>Not Applicable</th>
</tr>
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<table>
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<tr>
<th>Application sent to following:</th>
<th>Date sent</th>
<th>Comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept. of Health - Safe Drinking Water Branch</td>
<td>OCT 19 1994</td>
<td></td>
</tr>
<tr>
<td>Office of Hawaiian Affairs - Wastewater Branch</td>
<td>OCT 19 1994</td>
<td></td>
</tr>
<tr>
<td>Dept. of Hawaiian Home Lands</td>
<td>OCT 19 1994</td>
<td></td>
</tr>
<tr>
<td>State Historic Preservation Div.</td>
<td>OCT 19 1994</td>
<td></td>
</tr>
<tr>
<td>Sierra Club Legal Defense Fund</td>
<td>OCT 19 1994</td>
<td></td>
</tr>
<tr>
<td>Honolulu Board of Water Supply</td>
<td></td>
<td></td>
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<tr>
<td>Maui Dept. of Water Supply</td>
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<tr>
<td>Kauai Dept. of Water Supply</td>
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<tr>
<td>Hawaii Dept. of Public Works</td>
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<tr>
<td>Koolauloa NB #28 (Oahu)</td>
<td></td>
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<tr>
<td>Additional List (Molokai)</td>
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<td>Erie Hirano/ Lyann Hisun</td>
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<tr>
<td>DIV. OF AQUATIC RES.</td>
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</table>

| Date agenda due | | |
|-----------------|----------------|

| Date submittal due | | |
|-------------------|----------------|

| Date submittal sent to applicant | | |
|----------------------------------|----------------|

| Date application approved OR disapproved | | |
|----------------------------------------|----------------|

| Date applicant notified of decision | | |
|-------------------------------------|----------------|

<table>
<thead>
<tr>
<th>Remarks:</th>
<th>Include Exhibits 8, 9, 8/10 plus (blue) in application package</th>
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</table>

<table>
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<tr>
<th>Map, Log</th>
<th>Log in Logbook (Manual)</th>
<th>Log in Computer (Well Permits)</th>
</tr>
</thead>
</table>

"Susan 
in 8/1994"
WELL MODIFICATION PERMIT

for

Olaa Flume Tunnel
(Well No. 4211-01)
Olaa, South Hilo, Hawaii

TO: Hawaii Department of Water Supply
25 Aupuni Street
Hilo, HI 96720

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to modify Olaa Flume Tunnel (Well No. 4211-01), is approved subject to the following conditions:

1. The Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified in writing before any work authorized by this permit commences.

2. The permit shall be for modification and testing of the well.

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

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

5. The permit application and staff submittal approved by the Commission at its meeting on November 16, 1994 shall be incorporated by reference.

6. This permit may be revoked if work is not started within six months of the dates of issuance or if work is suspended or abandoned for six months. The work proposed in this permit application shall be completed within two years from the date of permit approval.
7. An approved flowmeter must be installed to measure withdrawals, and a monthly record of withdrawals must be kept and reported to the Commission on a monthly basis in accordance with the Commission's September 16, 1992 action on reporting requirements.

KEITH W. AHUE, Chairperson
Commission on Water Resource Management

DEC 1 1994
Date of Issuance

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ___________________________ Date: ________________

Printed Name: __________________________________________________________

Firm or Title: ____________________________________________________________

Please sign and return one copy of this permit to the Commission and retain a copy for your record.

cc: USGS
Department of Health
Safe Drinking Water Branch
Wastewater Branch
Ground Water Protection Program
Ms. Donna Fay K. Kiyosaki  
Chief Engineer  
Department of Public Works  
County of Hawaii  
25 Aupuni Street  
Hilo, Hawaii 96720

Dear Ms. Kiyosaki:

Well Construction and Pump Installation Permit Applications

Please review the following permit applications pursuant to your area of concern and submit your comments to us by Nov 21, 1994.

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<td>4211-01</td>
<td>Well Modification</td>
</tr>
</tbody>
</table>

Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

Response:

- We have no objections
- Not subject to our regulatory authority and permit
- Comments attached
- Additional information requested
- Extended review period requested

Contact Person: Ed Yohida  
Signed: Ed Yohida  
Phone: 808-832-27  
Date: 1/15/94
Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

November 16, 1994

Gentlemen:

Hawaii Department of Water Supply
Application for a Well Modification Permit
Olaa Flume Tunnel (Well No. 4211-01)
Olaa, South Hilo, Hawaii

Applicant: Hawaii Department of Water Supply
25 Aupuni Street
Hilo, HI 96720

Landowner: Hawaii Conference Foundation
15 Craigside Place
Honolulu, HI 96817

Action Requested: Permission to construct/install a concrete bulkhead at the Olaa Spring source for municipal use. Existing use is 2 to 3 million gallons per day.

Well Location/Tax Map Key: The spring is located at Olaa, Hawaii at Tax Map Key: 2-5-01: 13 (see attached map).

Project Description: The proposed project is located at the upper portions of the existing Olaa Flume water system located approximately 2.5 miles west of Hilo. The Flume Tunnel itself is located near the source of the water system, Olaa Spring. The Hawaii DWS proposes to modify the existing water system to comply with the Surface Water Treatment (SWTR) amendment of the EPA's Safe Drinking Water Act and Chapter 20, Hawaii Revised Statutes (HRS), relating to potable water. These changes require that groundwater sources be void of surface influence to avoid stringent filtration requirements. The amount of flow will not significantly change.

The project area is within the Protective "P" subzone of the Conservation District at an elevation of approximately 1,980 feet. On July 22, 1994, the Board of Land and Natural Resources approved a CDUA (Conservation District Use Application) for the project. Condition 2 of the CDUA required the applicant, the Hawaii DWS, to obtain a determination from the Commission as to whether a well modification permit was required for the project. Staff has determined that a permit is required for the work.

Agency Review: The application has been sent to the Hawaii County Department of Public Works, the State Historic Preservation Division, Office of Hawaiian Affairs, and Division of Aquatic Resources (DAR), and to the State Departments of Health and Hawaiian Home Lands for review. There have been no objections to the project.

Analysis: The tunnel develops fresh water. The closest existing well is the Hawaii Department of Water Supply's partially completed Piihonua Well 3 (Well No. 4208-01) located about 3 miles to the southeast. No adverse effects are expected.

Water Availability: The tunnel is located in the Northeast Mauna Loa Sector, Hilo Aquifer System of Hawaii. Sustainable yields for the Hilo System and the Northeast Mauna Loa Sector are estimated at 347 mgd and 740 mgd respectively. Existing use from the Sector is about 50 mgd. Water needs from the Northeast Mauna Loa Sector are estimated to be 59 mgd by the year 2010.

RECOMMENDATION:

That the Commission approve the issuance of a well modification permit for Olaa Flume Tunnel, subject to the following conditions:
WELL MODIFICATION PERMIT CONDITIONS

1. The Commission shall be notified before work commences.

2. The permit shall be for modification and testing of the well.

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

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

5. The well modification permit application and staff submittal approved by the Commission at its November 16, 1994 meeting are incorporated into the permit by reference.

6. The well modification permit may be revoked if work is not started within six (6) months after the date of issuance or if work is suspended or abandoned for six months. The work proposed in the permit application shall be completed within two years from the date of permit approval.

Respectfully submitted,

RAE M. LOUI
Deputy Director

Attach.

APPROVED FOR SUBMITTAL:

KEITH W. AHUE, Chairperson
TO: Dr. Don Hibbard, Director
    Historic Preservation Program
          Mr. Henry M. Sakuda, Administrator
          Division of Aquatic Resources
FROM: Rae M. Loui, Deputy Director
      Commission on Water Resource Management
SUBJECT: Well Construction and Pump Installation Permit Applications

Please review the following permit applications pursuant to your area of concern and submit your comments to us by November 4, 1994.

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Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Response:

⊲ We have no objections
⊲ Not subject to our regulatory authority and permit
⊲ Comments attached
⊲ Additional information requested
⊲ Extended review period requested

Contact Person: ________________________
Signed: ____________________________
Phone: _____________________________
Date: 10/28/94
Mr. Thomas Arizumi, Chief  
Environmental Management Division  
State Department of Health  
919 Ala Moana Blvd., 3rd Floor  
Honolulu, Hawaii 96814

Attn: Mr. William Wong

Dear Mr. Arizumi:

Well Construction and Pump Installation Permit Applications

Please review the following permit applications pursuant to your area of concern and submit your comments to us by November 21, 1994.

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Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Sincerely,

RAE M. LOUI  
Deputy Director

Response:  
- We have no objections
- Not subject to our regulatory authority and permit
- Comments attached
- Additional information requested
- Extended review period requested

Contact Person: Bill Wong  
Phone: 586-4258  
Date: 11/3/94
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Well Construction and Pump Installation Permit Applications:
Kaupulehu Potable 1 & 2 and Olaa Flume Tunnel

Since both permit applications are for routine maintenance and modifications of existing wells we believe that both of these projects will have "no effect" on significant historic sites.

PM: jk
Mr. Thomas Arizumi, Chief  
Environmental Management Division  
State Department of Health  
919 Ala Moana Blvd., 3rd Floor  
Honolulu, Hawaii 96814  

Attn: Mr. Dennis Tulang  

Dear Mr. Arizumi:

Well Construction and Pump Installation Permit Applications

Please review the following permit applications pursuant to your area of concern and submit your comments to us by **NOV 21 1994**.

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Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Sincerely,

RAE M. LOUI  
Deputy Director

Response:

- ☑ We have no objections
- () Not subject to our regulatory authority and permit
- () Comments attached
- () Additional information requested
- () Extended review period requested

Contact Person: lori kajiwara  
Signed: lori kajiwara  
Phone: 586-4530  
Date: 10-24-94
Mr. Dennis Lee  
Department of Water Supply  
County of Hawaii  
25 Aupuni Street  
Hilo, Hawaii 96720

Dear Mr. Lee:

We have received your application for a well modification permit for Olaa Flume Tunnel (Well No. 4211-01) at Olaa, South Hilo, Hawaii, (TMK: 2-5-01:Por. 13). We are reviewing the application for completeness.

Should you have any questions, please call the Commission on Water Resource Management staff at 587-0225.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

ES:ss
Mr. Thomas Arizumi, Chief  
Environmental Management Division  
State Department of Health  
919 Ala Moana Blvd., 3rd Floor  
Honolulu, Hawaii 96814  

Attn: Mr. William Wong  

Dear Mr. Arizumi:  

Well Construction and Pump Installation Permit Applications  

Please review the following permit applications pursuant to your area of concern and submit your comments to us by November 21, 1994.

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Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Sincerely,  

RAE M. LOUI  
Deputy Director  

Response:  

( ) We have no objections  
( ) Not subject to our regulatory authority and permit  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested  

Contact Person: ___________________________  Phone: ___________________________  
Signed: ___________________________  Date: ___________________________
Mr. Thomas Arizumi, Chief  
Environmental Management Division  
State Department of Health  
919 Ala Moana Blvd., 3rd Floor  
Honolulu, Hawaii 96814  

Attn: Mr. Dennis Tulang  

Dear Mr. Arizumi:

Well Construction and Pump Installation Permit Applications

Please review the following permit applications pursuant to your area of concern and submit your comments to us by _____ NOV 21 1994_____.

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Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Sincerely,

RAE M. LOUI
Deputy Director

Response:

( ) We have no objections
( ) Not subject to our regulatory authority and permit
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact Person: ____________________________ Phone: __________________
Signed: ____________________________ Date: __________________
TO:       Honorable Hoaliku L. Drake, Director
          Department of Hawaiian Home Lands
          Mr. Clayton H.W. Hee, Chairman and Trustee At Large
          Office of Hawaiian Affairs

FROM:     Keith W. Ahue, Chairperson
          Commission on Water Resource Management

SUBJECT:  Well Construction and Pump Installation Permit Applications

Please review the following permit applications pursuant to your area of concern and
submit your comments to us by ____________________________.

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Should you have any questions, please contact the Commission on Water Resource
Management staff at 587-0225.

Enc.

Response:

() We have no objections
() Not subject to our regulatory authority and permit
() Comments attached
() Additional information requested
() Extended review period requested

Contact Person: ____________________________ Phone: ______________
Signed: ____________________________ Date: ______________
TO: Dr. Don Hibbard, Director
   Historic Preservation Program

   Mr. Henry M. Sakuda, Administrator
   Division of Aquatic Resources

FROM: Rae M. Loui, Deputy Director
   Commission on Water Resource Management

SUBJECT: Well Construction and Pump Installation Permit Applications

Please review the following permit applications pursuant to your area of concern and submit your comments to us by NOV - 4 1994.

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ES:ss
Enc.

Response:

( ) We have no objections
( ) Not subject to our regulatory authority and permit
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact Person: ___________________________ Phone: ____________

Signed: ___________________________ Date: ____________________
Ms. Marjorie Ziegler
Sierra Club Legal Defense Fund, Inc.
223 South King Street, Suite 400
Honolulu, Hawaii 96813

Dear Ms. Ziegler:

Well Construction and Pump Installation Permit Applications

Please review the following permit applications pursuant to your area of concern and submit your comments to us by November 21, 1994.

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Sincerely,

RAE M. LOUI
Deputy Director

ES:ss
Enc.

Response:

( ) We have no objections
( ) Not subject to our regulatory authority and permit
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact Person: ____________________________ Phone: ____________________________
Signed: ____________________________ Date: ____________________________
Ms. Donna Fay K. Kiyosaki  
Chief Engineer  
Department of Public Works  
County of Hawaii  
25 Aupuni Street  
Hilo, Hawaii 96720

Dear Ms. Kiyosaki:

Well Construction and Pump Installation Permit Applications

Please review the following permit applications pursuant to your area of concern and submit your comments to us by November 21, 1994.

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Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Sincerely,

RAE M. LOUI  
Deputy Director

Response:  
( ) We have no objections  
( ) Not subject to our regulatory authority and permit  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested

Contact Person: __________________________ Phone: __________________________

Signed: __________________________ Date: __________________________
MEMORANDUM

TO: DOWALD, CWRM, DOFAW, HPD
FROM: Roger C. Evans, Administrator
       Office of Conservation and Environmental Affairs

SUBJECT: PLAN REVIEW

As a follow-up to an approved amendment to a Conservation District Use Permit (CDUP) for the Ola'a Flume Tunnel Improvement Project at Kaumana, South Hilo, Hawaii, TMK: 2-5-01: por. 13 (LOT 5-A), we would appreciate your review and comment on the attached construction plans for this project.

PLEASE RETURN ALL CONSTRUCTION DOCUMENTS TO OCEA!

Should you have any questions, please contact Steve Tagawa at 587-0385. If no response is received by the suspense date, we will assume there are no comments or concerns.

Attachment(s)

DIVISION'S COMMENTS:

The project requires a well modification permit from the Commission on Water Resource Management.

By: Edwin J. Sabado
Date: 10/18/94
September 19, 1994

Mr. Keith W. Ahue, Chairperson
State of Hawaii
Board of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

FILE NO. HA-2/94/-577A
DOCUMENT NO. 4737
CDUA FOR OLA'A FLUME TUNNEL IMPROVEMENT PROJECT
KAUMANA, SOUTH HILO, HAWAII
TAX MAP KEY 2-5-01:POR. 13 (LOT 5-A)

The Department is submitting four (4) copies of the construction plans and specifications for approval as specified as conditions of the above subject.

Please review and make comments as necessary. The Department will be submitting the Title Sheet of the construction plans for your approval signature.

William L. Sweeke, P.E.
Manager

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

Dear Mr. Sewake:

Subject: Conservation District Use Application for the Ola'a Flume Tunnel Improvement Project, Kaumana, South Hilo, Hawaii, TMK: 2-5-01: por. 13 (Lot 5-A)

We are pleased to inform you that your application to amend Conservation District Use Permit HA-577 for the further improvement of the subject water system was approved by the Board of Land and Natural Resources at its meeting of July 22, 1994. This approval is subject to the following conditions which either incorporates or modifies the Board's original six (6) conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments, and applicable parts of Section 13-2-21, Administrative Rules, as amended;

2. The applicant shall obtain a determination from the Commission on Water Resource Management (CWRM) as to the applicability of Section 13-168-12, Hawaii Administrative Rules;

3. Before proceeding with any work authorized by the Board, the applicant shall submit four (4) copies of the construction plans and specifications to the Chairperson or an authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three (3) of the copies will be returned to the applicant. Plan approval by the Chairperson does not infer approval required of other agencies. Compliance with Condition 1 remains the responsibility of the applicant;
4. The applicant shall notify the Division of Forestry and Wildlife upon the commencement and at the completion of all work in the Forest Reserve;

5. All exposed and disturbed ground shall be revegetated within thirty (30) days unless otherwise provided for in a plan on file with and approved by the Chairperson, or authorized representative;

6. The applicant shall comply with all applicable Department of Health Administrative Rules;

7. The applicant or its contractor shall take every precaution to prevent fire;

8. All debris and rubbish from the work activity shall be removed to approved sanitary disposal sites;

9. Prior to the start of construction, the applicant shall photo-document the tunnel, and any original drawings of the tunnel shall be submitted to the State Historic Preservation Division. Compliance with this documentation condition shall be determined by the Historic Preservation Division;

10. Should historic remains such as artifacts, shell or charcoal deposits, burials, pavings, or walls be found during construction, the applicant shall stop work in the immediate area and contact the State Historic Preservation Division immediately at 547-0057;

11. Any work or construction to be done on the land shall be initiated within one (1) year of the approval of such use, and all work and construction must be completed within three (3) years of the approval of such use;

12. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit or relating to or connected with the granting of this permit;
13. Failure to comply with any of these conditions shall render this Conservation District Land Use Permit (CDUP) null and void;

14. Other terms and conditions as prescribed by the Chairperson.

Please acknowledge receipt of this permit, with the above noted conditions, in the space provided below. Please sign two copies. Retain one and return the other within thirty (30) days.

Should you have any questions on any of these conditions, please feel free to contact our Office of Conservation and Environmental Affairs staff at 587-0377.

Very truly yours,

KEITH W. AHUE

Receipt acknowledged

Applicant's Signature

Date August 29, 1994

cc: Hawaii Conference Foundation
    Hawaii Board Member
    Hawaii Land Agent
    Hawaii Planning Dept.
    DOH/OHA/OSP/DOT
September 16, 1994

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

APPLICATION FOR PERMIT
OLAA FLUME TUNNEL IMPROVEMENT

The Department proposes to improve Olaa Flume Tunnel to minimize bacteriological contamination. Enclosed you will find construction plans for this project.

Under the Conservation District Use Application (CDUA) for Olaa Flume Tunnel Improvement Project, File No. HA-2/94/-577A, Doc No. 4737, the Department is directed to obtain a determination from the Commission on Water Resource Management as to the applicability of a permit application. Even though the Department disagrees with this condition of the CDUA, we have enclosed a partially filled application. A lot of information requested on this application does not apply to this project.

The Department awaits your determination.

H. William Seawake, P.E.
Manager

DL

Encs.
APPLICATION FOR PERMIT

☐ Well Construction or ☐ Pump Installation

Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 631, Honolulu, Hawaii 96810. Application must be accompanied by a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at 808-586-0225.

1. APPLICANT: (may be a, b, or c, but all must be filled in)
   (a) WELL OWNER
   Firm/Name: Hawaii Dept. of Water Supply
   Contact Person: Dennis Lee
   Address: 25 Aupuni Street
   Hilo, HI 96720
   (b) LANDOWNER
   Firm/Name: __________
   Contact Person: __________
   Address: __________
   (c) CONTRACTOR
   Firm/Name: __________
   Ph: __________
   Contractor’s C-57 License No.: __________
   __________

2. WELL LOCATION/NAME: Olaa Flume Spring, South Hilo Island: Hawaii
   Address: __________
   Tax Map Key: 2-5-01: Por 13
   (Attach a USGS map, scale 1" = 2000', and a property tax map showing well location referenced to established property boundaries.)

3. (a) PROPOSED WORK:
   Drill New Well
   Spring
   * After Location
   Modify Existing Well
   Redrill
   Install New Pump
   Replace Pump
   Modify Pump
   * Be sure to complete and submit well abandonment report upon completion of work.
   (b) WELL TYPE:
   Dug
   Bored
   Driven
   Drilled
   Radial
   Is this well part of a battery of wells? Yes
   No
   (Briefly describe and fill in the diagram on the back of this form.)

4. PROPOSED PUMP INFORMATION:
   Rated Pump Capacity: __________ gallons per minute
   Pump Type:
   Deep Well Turbine
   Submersible
   Centrifugal
   Rotary
   Rotary-Displacement
   Rotary-Gear
   Propeller
   Reciprocating
   Impulse
   Motor:
   Diesel
   Gas
   Electric, rated horsepower of __________

5. PROPOSED USE:
   Municipal (including hotels, stores, etc.)
   Domestic (individual, noncommercial water sys.)
   Irrigation (crop)
   Other (explain)
   Industrial
   Other (explain)
   State Land Use District:
   Urban
   Agriculture
   Rural
   Conservation
   County Zoning (describe)
   (If more space is needed, continue below remarks, explanations.)

6. (a) PROPOSED AMOUNT OF WITHDRAWAL: 2 to 3 million gallons per day
   (b) METHOD OF FLOW MEASUREMENT:
   Flow-meter
   Open-pipe
   Orifice Plate
   Weir

7. PENDING ACTIONS:
   CDUA
   SMA
   EIS
   EA
   NONE
   Other (explain)

8. REMARKS, EXPLANATIONS:
   CDUA completed; project is to modify existing spring source to minimize contamination. The amount of flow will not significantly change.
   (If more space is needed, continue on back)

NOTE: Signing below indicates that the applicant understands that, if the permit requested is granted by the Commission on Water Resource Management, the proposed work is to be completed within two (2) years of the approval date. In addition, the contractor shall submit to the Commission a well completion report, well abandonment report, or both, within 30 days after a completion date of the permitted work. The applicant also understands that monthly water use data shall be submitted to the Commission. The applicant further understands that approval of the proposed permit shall constitute a determination of correlative water rights and shall not guarantee the pump capacity or future use up to the permitted pump capacity.

Well Owner ________________________________
Signature ________________________________
Date ________________________________

Landowner ________________________________
Signature ________________________________
Date ________________________________

Contractor ________________________________
Signature ________________________________
Date ________________________________

For Official Use Only:
Date Received ________________________________
Date Accepted ________________________________
Field Checked By ________________________________
Date ________________________________
Latitude: __________
Longitude: __________
Aquifer System Name: __________
State Well No.: __________

6/24/92 WCR Fc.
9. PROPOSED WELL SECTION

- Elevation at top of casing: ___ ft., msl.
- Ground Elevation: ___ ft., msl*
- Cement Grout: ___ ft.
- Rock Packing: ___ ft.
- Hole Diameter: ___ in.
- Total Depth: ___ ft.

- Solid Casing:
  - Material: 
  - Length: ___ ft.
  - Diameter: ___ in.
  - Wall thickness: ___ in.
- Casing: □ Perforated □ Screen
  - Material: 
  - Length: ___ ft.
  - Diameter: ___ in.
  - Wall thickness: ___ in.
  - Openings: ___ sq. in./L.F.
- Open Hole:
  - Length: ___
  - Diameter: ___ in.

*Approximate elevation at time of filing application. Ground elevation above mean sea level (msl) by a surveyor licensed by the State must be submitted at start of construction. Final elevations of well components shall be submitted in the well completion/well abandonment reports.
Mr. William Sewake, Manager
Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Sewake:

Subject: Conservation District Use Application for the Ola'a Flame Tunnel Improvement Project, Kamama, South Hilo, Hawaii, TMK: 2-5-01: por. 13 (Lot 5-A)

We are pleased to inform you that your application to amend Conservation District Use Permit HA-577 for the further improvement of the subject water system was approved by the Board of Land and Natural Resources at its meeting of July 22, 1994. This approval is subject to the following conditions which either incorporates or modifies the Board's original six conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments, and applicable parts of Section 13-2-21, Administrative Rules, as amended;

2. The applicant shall obtain a determination from the Commission on Water Resource Management (CWRM) as to the applicability of Section 13-168-12, Hawaii Administrative Rules;

3. Before proceeding with any work authorized by the Board, the applicant shall submit four (4) copies of the construction plans and specifications to the Chairperson or an authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three (3) of the copies will be returned to the applicant. Plan approval by the Chairperson does not infer approval required of other agencies. Compliance with Condition 1 remains the responsibility of the applicant;
4. The applicant shall notify the Division of Forestry and Wildlife upon the commencement and at the completion of all work in the Forest Reserve;

5. All exposed and disturbed ground shall be revegetated within thirty (30) days unless otherwise provided for in a plan on file with and approved by the Chairperson, or authorized representative;

6. The applicant shall comply with all applicable Department of Health Administrative Rules;

7. The applicant or its contractor shall take every precaution to prevent fire;

8. All debris and rubbish from the work activity shall be removed to approved sanitary disposal sites;

9. Prior to the start of construction, the applicant shall photo-document the tunnel, and any original drawings of the tunnel shall be submitted to the State Historic Preservation Division. Compliance with this documentation condition shall be determined by the Historic Preservation Division;

10. Should historic remains such as artifacts, shell or charcoal deposits, burials, pavings, or walls be found during construction, the applicant shall stop work in the immediate area and contact the State Historic Preservation Division immediately at 547-0057;

11. Any work or construction to be done on the land shall be initiated within one (1) year of the approval of such use, and all work and construction must be completed within three (3) years of the approval of such use;

12. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit or relating to or connected with the granting of this permit;
13. Failure to comply with any of these conditions shall render this Conservation District Land Use Permit (CDUP) null and void;

14. Other terms and conditions as prescribed by the Chairperson.

Please acknowledge receipt of this permit, with the above noted conditions, in the space provided below. Please sign two copies. Retain one and return the other within thirty (30) days.

Should you have any questions on any of these conditions, please feel free to contact our Office of Conservation and Environmental Affairs staff at 587-0377.

Very truly yours,

KEITH W. AHUE

Receipt acknowledged

Applicant's Signature

Date August 24, 1994

cc: Hawaii Conference Foundation
    Hawaii Board Member
    Hawaii Land Agent
    Hawaii Planning Dept.
    DOH/ORA/OSP/DOT
July 22, 1994

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

REGARDING: Conservation District Use Application for the Ola‘a Flume Tunnel Improvement Project
Kaumana, South Hilo, Hawaii

APPLICANT: Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

LANDOWNER: Hawaii Conference Foundation
15 Craigside Place
Honolulu, Hawaii 96817

LOCATION/TMK: Kaumana, South Hilo, Hawaii
2-5-01: por. 13 (Lot 5-A)

AREA OF PARCEL/USE
692.04 Acres
10.877 Acres

SUBZONE: Protective "P"

DESCRIPTION OF AREA/CURRENT USE:

The proposed project is located at the upper portions of the existing Ola‘a Flume water system located approximately 2.5 miles west of Hilo Town (see Exhibit 1). The Flume Tunnel itself is located near the source of the water system, the Ola‘a Spring. The project area is within the Protective "P" subzone of the Conservation District at an elevation of approximately 1980 feet (Exhibit 2).
History

The Ola'a Flume Tunnel was dug around the turn of the century, between 1900-1920, into a 1855 lava flow of Mauna Loa. This tunnel was part of the flume system that transported sugar cane for the Ola'a Sugar Mill. The entire flume system was abandoned in 1956 when the Ola’a Mill shifted from hand cutting of cane to mechanical harvesting.

CDUP Background

On October 11, 1974, the Board Land and Natural Resources (Board) approved Conservation District Use Permit (CDUP) HA-577 by the Division of Water and Land Development, Department of Land and Natural Resources, for the renovation and improvement of this water system for conversion to domestic water use (Exhibits 3-4). At that time, this water system had an estimated yield of approximately 6-7 million gallons per day (mgd), and was planned to supplement the water supply to the upper Hilo area (Kaumana).

CDUP HA-577 authorized tunnel renovations and the construction of an intake structure at the lower termini of the tunnel (Exhibit 5), as well as the construction of approximately 3,500 feet of water supply lines and an access road (Exhibit 6). In 1974, the project was located within the Restricted Watershed "RW" subzone pursuant to Regulation No. 4. The original project was located on land owned by the Hawaii Conference of the United Church of Christ and the Mauna Kea Sugar Company, Inc. (Exhibit 7). The balance of that water system renovations were at lower elevations located within the Agricultural District.

PROPOSED USE:

The County of Hawaii, Department of Water Supply proposes to make further improvements to the existing water system to comply with the Surface Water Treatment (SWTR) amendment of the EPA’s Safe Drinking Water Act and Chapter 20, Hawaii Revised Statutes (HRS), relating to potable water. These changes require that groundwater sources be void of surface influence to avoid stringent filtration and disinfection requirements. This rule and the Groundwater Under the Influence (GWI) of surface water requirements were to be implemented and operational by July 1, 1993.
The proposed improvements consist of the construction/installation of:

* A concrete bulkhead at the spring source;
* Approximately 450 linear feet of pipeline within the tunnel;
* A 10-foot wide gravel service road along the tunnel alignment;
* A 20' x 40' materials storage site near the spring source.

(see Exhibits 8-10)

SUMMARY OF COMMENTS:

The application was referred to the following agencies for review and comment: the State Department of Health, Department of Transportation, Office of Hawaiian Affairs, Office of State Planning, Office of Environmental Quality Control; the State Department of Land and Natural Resources Divisions of Aquatic Resources, Forestry and Wildlife, Conservation and Resources Enforcement, State Parks, Land Management, Water and Land Development, Historic Preservation, and the Commission on Water Resource Management; the County of Hawaii Departments of Planning, Public Works, Parks and Recreation.

The State Department of Land and Natural Resources’ Divisions of Water and Land Development, State Parks, State Department of Transportation, Office of Hawaiian Affairs, County of Hawaii Department of Public Works have no comments or objections to the proposed project.

DEPARTMENT OF HEALTH

We have the following comments:

1. We have no objections to the proposed tunnel improvements. According to the Environmental Assessment (EA), the purpose of this project is to seal the spring to minimize contamination due to surface water runoff. Improvements such as these are necessary in helping to maintain a safe drinking water source and are to be encouraged.
2. We would like to add to the discussion of regulatory compliance on page 14 of the EA by noting that the Ola’a Flume was voluntarily removed from service prior to the Surface Water Treatment Rule compliance deadline of June 30, 1993. Thus, the source must either be modified to eliminate the surface influence or have an acceptable filtration and disinfection system in operation prior to being used again as a source of potable water.

3. While the proposed renovation is needed, the Department of Water Supply must be cautioned that these improvements will not guarantee full compliance with existing and future drinking water regulations. For instance, it is still possible that the Ola’a Flume will be found to be a ground water source under the direct influence of surface water, despite the good intent of this project. All such ground water sources will be regulated like surface water sources, requiring proper filtration and disinfection.

DEPARTMENT OF LAND AND NATURAL RESOURCES

Commission on Water Resource Management

It appears that the proposed bulkhead and pipeline improvements will require a well construction permit pursuant to Section 13-168-12, Hawaii Administrative Rules.

Historic Preservation Division

There is a high probability that no archaeological sites will be affected by the proposed construction. The installation of the pipeline and bulkhead will affect an historic tunnel and we request that prior to the installation, the tunnel should be photo-documented and any original drawings of the tunnel be submitted to our office. Photographs shall be 8"x 10" fiber based paper prints from 4" x 5" fine grained negatives. Both negative and prints shall be processed with archival quality control methods.

Division of Aquatic Resources

The location of the project and slope of the land offers no threat to surface water resources. Because the water source would be used only during emergencies, it should not significantly change flow patterns in the Wailuku River. We have no objections from the aquatic biological resource standpoint.
Board of Land and Natural Resources

Division of Forestry and Wildlife

We have no objections to, and support the Department of Water Supply's proposed improvements project.

It should be noted that not only is the proposed use a conditional use within the Protective "P" subzone of the Conservation District, but that the subject area was designated as such in recognition of the water resources within the area. We concur with the Negative Declaration.

COUNTY OF HAWAII

Planning Department

Please be informed that subject property is situated outside the Special Management Area (SMA) boundaries. Therefore, the proposal is not subject to Chapter 205A, HRS, relating to Coastal Zone Management nor the Planning Commission Rule 9, Special Management Area Rules and Regulations.

PUBLIC HEARING SUMMARY:

On May 12, 1994, a public hearing on this application was held at the Royal Waikaloan Hotel Ballroom, Waikoloa, Hawaii, before the Board. In attendance for the applicant was Mr. Dennis Lee, Project Manager, Department of Water Supply. Mr. Manabu Tagomori, Manager and Chief Engineer of the Division of Water and Land Development, Department of Land and Natural Resources testified in support of the project.

ANALYSIS:

Following review and acceptance for processing, the applicant by letter dated March 17, 1994, was notified that:

1. The proposed use is a conditional use within the Protective "P" subzone of the Conservation District according to Administrative Rules, Title 13, Chapter 2, as amended;

2. A public hearing pursuant to Section 183-41, Hawaii Revised Statutes (HRS), as amended, will be required in that the propose use is in the Protective subzone and;
3. In conformance with Title 11, Natural Resources Chapter 200, Hawaii Administrative Rules, and Act 241, Session Laws of Hawaii (SLH), 1992, a negative declaration is anticipated based on the draft environmental assessment (DEA) for the proposed action.

Notice of the availability of the DEA was first published in the Office of Environmental Quality Control (OEQC) Bulletin on April 8, 1994.

On July 7, 1994, a negative declaration was made for the subject project. This determination will be published in the OEQC Bulletin Notification on July 23, 1994.

The objective of the Protective subzone is to protect valuable resources in such designated areas as restricted watersheds; marine, plant or wildlife sanctuaries; significant historic, archaeological, geological, and volcanological features and sites; and other designated unique areas.

Section 13-2-21(b)(1) relating to standards requires all applications be reviewed in such a manner that the objective of the subzone is given primary consideration.

The proposed project is necessary to further improve an existing water system previously modified via Board approved CDUP. If the requested improvements are not instituted, the Olaa Flume system could not be utilized as a potable water source without the addition of costly filtration and disinfection systems.

As a watershed area, there is some concern over the clearing and construction of a 10-foot wide (430 feet long) gravel access road over the existing foot trail that runs along the tunnel alignment. Care should be exercised by the applicant to minimize any erosion or loss of ground cover in this watershed area.

Inasmuch as the Protective "P" subzone of the Conservation District encompass "Lands and waters necessary for the protecting watersheds, water sources, and water supplies;..." and the proposed project is anticipated to preserve the Department of Water Supply's ability to utilize this water source, the propose project appears to be non-violative of the goals and objectives of the Conservation District.
Therefore, Staff recommends approval of this amendment to CDUP HA-577, subject to the following conditions which either incorporate or modify the Board's original conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments, and applicable parts of Section 13-2-21, Administrative Rules, as amended;

2. The applicant shall obtain a determination from the Commission on Water Resource Management (CWRM) as to the applicability of Section 13-168-12, Hawaii Administrative Rules;

3. Before proceeding with any work authorized by the Board, the applicant shall submit four (4) copies of the construction plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three (3) of the copies will be returned to the applicant. Plan approval by the Chairperson does not infer approval required of other agencies. Compliance with Condition No. 1 remains the responsibility of the applicant;

4. The applicant shall notify the Division of Forestry and Wildlife upon the commencement and at the completion of all work in the Forest Reserve;

5. All exposed and disturbed ground shall be revegetated within thirty (30) days unless otherwise provided for in a plan on file with and approved by the Chairperson, or authorized representative;

6. The applicant shall comply with all applicable Department of Health Administrative Rules;

7. The applicant or its contractor, shall take every precaution to prevent fire;

8. All debris and rubbish from the work activity shall be removed to approved sanitary disposal sites;

9. Prior to the start of construction, the applicant shall photo-document the tunnel and any original drawings of the tunnel shall be submitted to the State Historic Preservation Division. Compliance with this documentation condition shall be determined by the Historic Preservation Division;
10. Should historic remains such as artifacts, shell or charcoal deposits, burials, pavings, or walls be found during construction, the applicant shall stop work in the immediate area and contact the State Historic Preservation Division immediately at 547-0047;

11. Any work or construction to be done on the land shall be initiated within one (1) year of the approval of such use, and all work and construction must be completed within three (3) years of the approval of such use;

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

13. Failure to comply with any of these conditions shall render this Conservation District Use Permit (CDUP) null and void;

14. Other terms and conditions as prescribed by the Chairperson.

Respectfully submitted,

STEVEN H. TAGAWA,
Staff Planner

Attachments

Approved for Submittal:

KEITH W. AHUE, Chairperson
BOARD OF LAND AND NATURAL RESOURCES
MEMORANDUM

To: Division of Water and Land Development

From: Sunao Kido, Chairman
Board of Land and Natural Resources

Subject: Board Action, Conservation District Use Application for Water System at Kaumana, Hawaii

The Board of Land and Natural Resources, at its meeting of October 11, 1974, approved your application subject to the conditions listed in the attached Board Submittal, Item H-4.

Your follow-up action on this application will be appreciated.

BOARD OF LAND AND NATURAL RESOURCES

SUNAO KIDO
Chairman and Member

Encl.

cc: County Planning Dept.
County Water Dept.
DOH, OEQC, LUC
Land Agent
Land Board Member

bcc: Divisions
Field Office(Dist. Forester w/encl.)

ksl
October 11, 1974

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Conservation District Use Application for Water System at Kaumana, Hawaii

APPLICANT:
DLNR Division of Water and Land Development
Owner ___ Lessee ___ Other ___ X ___

USE REQUESTED:
Pipeline, Access Road, Intake

LOCATION:
Olaa Spring Tax Map Key: 2-5-01; RW Subzone

DESCRIPTION OF AREA:
The subject area is approximately 6,000 feet due north of the Saddle Road at the 1950 foot elevation located within the Hilo Forest Reserve in the land of Punahoa 2, South Hilo. The pipeline and access road will traverse through ohia and hapuu forest following approximately along the alignment of the abandoned Olaa Flume. The terrain consists of fresh pahoehoe flow lavas with numerous lava openings and a few brown ash-covered areas which are wet and sometimes marshy. The source area is surrounded by growth of ohia and hapuu trees. The ohia and hapuu is sparse, generally scrubby and of poor form. Other vegetation includes scattered small koa, uluhi, uki, lycopodium, pilo, kolea, grasses, etc.

The Olaa Flume tunnel source develops a subterranean perched ground water spring approximately 500 feet from the outer portal. The average discharge is roughly estimated to be about 6 to 7 mgd (million gallons per day). The minimum discharge is not known but is conservatively estimated at half a million gallons a day.
The parcels of land over which the supply line will traverse are owned by the Hawaii Conference of the United Church of Christ and Mauna Kea Sugar Company, Inc. A right-of-entry for surveying purposes has been obtained from Mauna Kea Sugar Company, and the Hawaii Conference of the United Church of Christ.

DESCRIPTION OF USE:

The present water source for Kaumana in the upper area of Hilo is Lyman Spring located approximately 5,000 feet makai of the Olaa Flume Spring Source at elevation 1,630 feet. During dry periods, the supply from Lyman Spring becomes very low and can barely meet the demand of the service area.

The Olaa Flume Spring Source, which was formerly used by the plantation to convey sugar cane, is presently unused and can be redeveloped to serve the upper Hilo (Kaumana) area. The elevation is between 1900 and 2000 feet.

The improvements necessary to redevelop the source consists of the rehabilitation and reconstruction of the tunnel and intake structure, and the construction of a supply line, a tank and an access road. Only the tunnel and intake structure works and approximately 3,500 feet of supply line and access road will be constructed within the conservation district. The tank and the balance of the supply line will be on land zoned for agriculture.

The supply line and access road will generally follow the existing flume alignment. Trees and brushes will be cut and cleared along the path of the pipeline and access road through the forested area. Clearing and grubbing along the access road and at the intake site will be kept to the required minimum.

Survey work will commence in September, 1974, and construction will commence in June, 1975. The approximate time of completion will be June, 1976.

COMMENTS RECEIVED:

The Department of Health has no objections provided the applicant comply with all applicable Public Health Regulations.

The County Planning Department writes that approval of the application should be made after the minimum discharge is determined. It explains that "This scheme appears to be environmentally sound, however, the entire proposal is dependent upon the availability of water during minimum discharge."

ANALYSIS:

The applicant has submitted a subsequent report by a staff hydrologist which recommends that:
1. The Olaa tunnel flow be conservatively estimated at 0.5 mgd (in the absence of adequate records and in view of rapid changes in flow to climatic conditions);

2. Gaging, sampling (for turbidity), and inspection (for flow loss) activities be established for the site.

3. After low flow records are established, analyze the low-flow reliability of the source.

Reports indicate the proposed project will not have adverse effects on the environment.

RECOMMENDATION:

It is recommended that this application be approved subject to the following conditions:

1. The applicant shall submit a minimum of three copies of plans for earthwork, construction, and landscaping to the Chairman for review and approval prior to the start of work activity.

2. The applicant shall notify the Forestry Division upon the commencement and at the completion of all work in the Forest Reserve.

3. All debris and rubbish from the work activity shall be removed to approved sanitary disposal sites.

4. The applicant shall comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments.

5. Time Limit of Permit. Upon approval of this application, the applicant will have a period not to exceed one year from the date of approval in which to start this project.

6. The applicant's contractor shall take every precaution to prevent fire.

Respectfully submitted,

GORDON SOH, Program Planning Coordinator

RECOMMENDED FOR APPROVAL:

SUNAO KIDO, Chairman
Original Project Area within the Conservation District

LOCATION MAP

SOURCE: Original Construction Plans
Approved January 28, 1976

CDUA: HA-577A
County of Hawaii, Department of Water Supply
Protective Subzone    TMK: 2-5-01: 13
EXHIBIT 6
Figure 11 Vegetation and Footpath Map
**CONCRETE BULKHEAD SECTION**

**MID-DISTANCE TUNNEL SECTION**

**TUNNEL SECTIONS**
FINAL ENVIRONMENTAL ASSESSMENT

OLAA FLUME TUNNEL IMPROVEMENT

DEPARTMENT OF WATER SUPPLY
COUNTY OF HAWAII
JUNE 1994
SUPPLEMENTAL INFORMATION REGARDING ROADWAY AND STORAGE AREA

To minimize physical disturbance of the area, only small equipment will be used to construct the gravel access road and storage area. As stated, the access road will follow an existing cleared footpath.

The vegetation to be cleared predominantly includes false staghorn fern. Some waiwi and ohia may be cleared. Cleared vegetation will be disposed at the County's Hilo Landfill.
ADDENDUM

Comments and Responses.
COMMENTS FROM CONCERNED AGENCIES AND RESPECTIVE RESPONSES BY
THE DEPARTMENT OF WATER SUPPLY

   Comment Date: March 22, 1994
   DWS Response: None Required.

2. County of Hawaii Department of Public Works - by Galen Kuba, Acting Division Chief.
   Comment Date: March 28, 1994
   DWS Response: None Required.

3. County of Hawaii Planning Department - by Virginia Goldstein, Planning Director.
   Comment Date: March 31, 1994
   DWS Response: None Required.

   Comment Date: April 13, 1994
   DWS Response: The Olaa Flume source was never taken out of service as incorrectly stated on Comment #2 of the DOH's memorandum. The proposed improvements are an alternative to replacing the source with a deepwell source or providing a filtration system. The Department understands that the source, with the proposed improvements, will be subject to the DOH's review and determination as to its compliance with current and future drinking water regulations.

5. State of Hawaii Department of Land and Natural Resources, Historic Preservation Division - by Don Hibbard, Administrator.
   Comment Date: April 28, 1994
   DWS Response: As requested, the Department will provide photographs and drawings of the tunnel prior to construction.

   Comment Date: May 17, 1994
   DWS Response: The Department will comply with Section 13-168-12, Hawaii Administrative Rules as necessary. Contact with CWRM will be maintained.
Mr. H. William Sewake, Manager
Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, HI 96720

re: Conservation District Use Application Olaa Flume Tunnel Improvement

Dear Mr. Sewake:

Many thanks for your letter of April 12, 1994 that indicated that the Department of Land and Natural Resources (DLNR) has received and accepted your application on the above subject.

You note that the DLNR requires an official letter by our organization concurring with this project.

Please consider this an official concurrence letter. Many thanks for all your help.

Sincerely,

James A. Richards
Executive Secretary

JAR:slc
March 22, 1994

Mr. Keith H. Ahue, Chairperson
Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai'i 96809

Re: CDOA, County of Hawai'i, Department of Water Supply, HA-2/4/94-577A
Construction of the Olaa Flume Tunnel Improvements,
Kaumana, South Hilo, Hawai'i TMK:2-5-01:13 (lot 5-A)

Dear Mr. Ahue:

Thank you for the opportunity to review the above-referenced Conservation District Use Application. We have no concerns with this project.

If you have any questions please contact Lynn J. Lee, in our Land and Natural Resources Division at 594-1938.

Me ka 'ola'io

Dante K. Carpenter
Administrator
March 28, 1994

MR KEITH W AHUE
DEPARTMENT OF LAND AND NATURAL RESOURCES
P O BOX 621
HONOLULU HI 96809

SUBJECT: CONSERVATION DISTRICT USE APPLICATION
FOR CONSTRUCTION OF OLAA FLUME TUNNEL IMPROVEMENTS
Application No.: HA-2/4/94-577A
Location: Kaumana, South Hilo, Hawaii
TMK: 3rd Div./2-5-01: 13, Lot 5-A

We have reviewed the subject application and have no comments.

GALEN M. KUBA, Acting Division Chief
Engineering Division

STT:byf
cc: Planning Department
March 31, 1994

Mr. Keith W. Ahue, Chairperson
Board of Land and Natural Resources
P. O. Box 621
Honolulu, HI 96809

Dear Mr. Ahue:

CDUA File #HA-2/4/94-577A
Proposed Construction of Olaa Flume Tunnel Improvements
Tax Map Key: 2-5-1: 13; Kaumana, South Hilo, Hawaii

This is to acknowledge receipt of your March 17, 1994 letter, regarding the above-subject project. Please be informed that the subject property is situated outside the Special Management Area (SMA) boundaries. Therefore, the proposal is not subject to Chapter 205A, HRS, relating to Coastal Zone Management nor the Planning Commission Rule 9, Special Management Area Rules and Regulations.

Should you have any questions, please feel free to contact Alice Kawaha of our office.

Sincerely,

VIRGINIA GOLDSTEIN
Planning Director

xc: Mr. William Sewake, Department of Water Supply
To: The Honorable Keith W. Ahue, Chairperson  
Department of Land & Natural Resources  

From: John C. Lewin, M.D.  
Director of Health  

Subject: Conservation District Use Application  

Applicant: County of Hawaii, Department of Water Supply  
File No.: HA-2/4/94 - 577A  
Request: Construction of the Olaa Flume Tunnel Improvements  
Location: Kaumana, South Hilo, Hawaii  
TMK: 2-5-01: 13  

Thank you for allowing us to review and comment on the subject project. We have the following comments to offer:

1. We have no objections to the proposed tunnel improvements. According to the Environmental Assessment (EA), the purpose of this project is to seal the spring to minimize contamination due to surface water runoff. Improvements such as these are necessary in helping to maintain a safe drinking water source and are to be encouraged.

2. We would like to add to the discussion of regulatory compliance on page 14 of the Environmental Assessment by noting that the Olaa Flume was voluntarily removed from service prior to the Surface Water Treatment Rule compliance deadline of June 30, 1993. Thus, the source must either be modified to eliminate the surface influence or have an acceptable filtration and disinfection system in operation prior to being used again as a source of potable water.

3. While the proposed renovation is needed, the Department of Water Supply must be cautioned that these improvements will not guarantee full compliance with existing and future drinking water regulations. For instance, it is still possible that the Olaa Flume will be found to be a groundwater source under the direct influence of surface water, despite the good intent of this project. All such groundwater sources will be regulated like surface water sources, requiring proper filtration and disinfection.

If you should have any questions on this matter, please contact Mr. William Wong, Chief, Safe Drinking Water Branch at 586-4258.

c: Safe Drinking Water Branch  
Hawaii District Health Office
MEMORANDUM

To: Roger C. Evans, Administrator
   Office of Conservation and Environmental Affairs

From: Don Hibbard, Administrator
   Historic Preservation Division

Subject: Construction of the Olaa Flume Tunnel Improvements
   TMK 2-5-01:13 (lot 5-A), South Hilo, Hawaii

Thank you for your memo dated March 17, 1994 regarding the Construction of the Olaa Flume Improvements. There is high probability that no archaeological sites will be affected by the proposed construction. The installation of the pipeline and bulkhead will affect an historic tunnel and we request that prior to the installation, the tunnel should be photo-documented and any original drawings of the tunnel be submitted to our office. Photographs shall be 8" X 10" fiber based paper prints from 4" X 5" fine grained negatives. Both negatives and prints shall be processed with archival quality control methods.

Thank you for the opportunity to comment.

CO:ab
MEMORANDUM

TO: Mr. Roger C. Evans, Administrator
   Office of Conservation and Environmental Affairs

FROM: Rae M. Lout, Deputy Director
       Commission on Water Resource Management

SUBJECT: Comments to CDUA, Construction of the Olau Flume Tunnel Improvements
       (FILE. NO. HA-24-94-577A)

It appears that the proposed bulkhead and pipeline improvements will require a well
construction permit pursuant to Section 13-168-12, Hawaii Administrative Rules.

For more information regarding well construction permit requirements, the applicant
should call Ed Sakoda at 587-0225.

We appreciate the opportunity to review and comment on this CDUA.

DH:ko
ENVIRONMENTAL ASSESSMENT FOR
OLAA FLUME TUNNEL IMPROVEMENT

PROJECT: OLAA FLUME TUNNEL IMPROVEMENT
ENGINEERING WORK ORDER 91-094

LOCATION: KAUMANA, SOUTH HILO
ISLAND OF HAWAI'I
TAX MAP KEY 2-5-01:13

PROPOSING AGENCY: DEPARTMENT OF WATER SUPPLY
COUNTY OF HAWAI'I

APPROVING AGENCY: DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE OF HAWAI'I
Notice of Determination: Negative Declaration

For: Olaa Flume Tunnel Improvement

By: Department of Water Supply
    County of Hawaii

The proposed action will have no significant effect on the environment and, therefore, does not require the preparation of an Environmental Impact Statement. This Notice of Determination and Environmental Assessment are being filed as a Negative Declaration.
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I. INTRODUCTION

Project Description

The Department of Water Supply, County of Hawaii, proposes to construct a spring collection enclosure (concrete bulkhead) and adjoining 18-inch pipeline in the existing tunnel structure. The construction of a service road running parallel to the existing tunnel alignment is also proposed along with a temporary materials storage area (see Figure 1, Olaa Flume Tunnel Improvement).

The purpose of the project is three fold:

A) To sanitize the collection of spring water in the tunnel. There exists portholes in the tunnel that contributes to the contamination of the spring water.

B) To maximize the collection of spring water in the tunnel. Rock fractures in the tunnel system contributes to water loss during the transport of the spring water from the spring origin to the existing 18-inch supply pipeline.

C) To provide for a drinking water source which would be operational during power outages.

Project History

The Olaa Flume Spring Source, as described by William J. Hull, Appraisal of Olaa Flume Spring Source, November 1975, was created by the 1855 lava flow from Mauna Loa volcano. The tunnel was dug into this lava flow about 1900 and additional tunneling was completed in 1920. This source was abandoned in 1956 by Olaa Mill because economics forced a change from handcutting sugar cane to mechanical harvesting.

The Olaa Flume Spring Source, which was originally used to transport sugar via a flume system, was converted to a drinking water source in 1976.

A Conservation District Use Application was submitted in July 1974, for surveying, constructing pipeline, access road, and intake structure for the Olaa Flume Spring Source. This conversion project included the rehabilitation and reconstruction of the tunnel and intake structure and the construction of 3,500 linear feet of supply line and access road within the conservation district. The tank and the balance of the supply line was constructed on agriculture-zoned land.

The Surface Water Treatment (SWTR) an amendment of the Federal EPA's Safe Drinking water Act and Chapter 20, Rules Relating to Potable (State of Hawaii Revised Statutes), requires groundwater sources to be void of surface water.
OLAA Flume Tunnel Improvement

OLAA FLUME SPRING SOURCE

PROPOSED GRAVEL ROAD (10' WIDE)

EXISTING ROAD AND PIPELINE

TUNNEL ENTRANCE
BEGIN PROPOSED PIPELINE

OLAA FLUME TUNNEL IMPROVEMENT

PROPOSED STORAGE SITE 20'x40'

TUNNEL WATER FALLS
PROPOSED CONCRETE CAP END OF PROPOSED PIPELINE

FIGURE ONE
influence to avoid stringent filtration and disinfection requirements. This Rule and groundwater under the influence of surface water (GWI) requirements must be implemented and operational before July 1, 1993.

Present Project

The Olaa Flume Tunnel Improvement project will eliminate spring water contamination by surface water and maximize source water collection.

Due to the stringent SWTR requirements, the Department of Water Supply (DWS) may be compelled to abandon this source. The SWTR compliance actions requires extremely large expenditures. This project will allow DWS to save this source using minimum expenditure. Development of a replacement source for Olaa Flume Spring is cost prohibitive. Details of the economic impact are presented in the following sections.

II. DESCRIPTION OF PROPOSED ACTION

Project Area

The proposed project site is located on the eastern slope of Mauna Kea Mountain about 2.5 miles west of Hilo Town, Tax Map Key 2-5-01:31, Lot 5-A, Olaa Flume Spring Source (see Figure 2, Location Plan). The project is situated around elevation 1980-feet and the surrounding area has 6% to 20% slopes as indicated on Figure 3, U.S.G.S. Map, Piilhonua Quadrangle.

The project site is within the State Conservation District lands designated as subzone Protective (P) (see Figure 4, Conservation Zone Map). The area is within the Hilo Closed Watershed designation with restricted access. Since the surrounding areas of the project site are private lands, hunting is not allowed to the general public.

Project Description

The project consist of construction a concrete bulkhead at the spring location, installation of about 450 linear feet of pipeline in the tunnel from the concrete bulkhead to the existing 18-inch pipeline at the end of the tunnel, construction of about 430 linear feet of 10-foot wide gravel service road, and construction of a materials storage site about 20 feet wide and 40 feet long (see Figure 5, Olaa Flume Tunnel Improvement).

Concrete Bulkhead & Adjoining Pipeline

The construction of the concrete bulkhead is intended to completely seal the spring and eliminate contamination from the existing porthole and surface water intrusion (see Figure 6, Tunnel Sections and Figures 7 and 8, Tunnel Photos).
EXISTING ROAD AND PIPELINE

BEGIN GRAVEL ROAD
STA. 0+00

TUNNEL ENTRANCE
BEGIN PROPOSED PIPELINE

PI. NO. 1
STA. 0+50

OLAA FLUME
SPRING SOURCE

PI. NO. 2
STA. 1+40

PROPOSED GRAVEL ROAD (10' WIDE)

PI. NO. 3
STA. 2+20

PROPOSED STORAGE SITE 20'x40'

END OF GRAVEL ROAD
STA. 4+30

PI. NO. 4
STA. 3+25

END OF TUNNEL NO 1
35' FROM PI. NO 4

PI. NO. 5 - STA. 3+55

TUNNEL WATER FALLS

PROPOSED CONCRETE CAP
END OF PROPOSED PIPELINE

OLAA FLUME TUNNEL IMPROVEMENT

TMR 2-5-61:13

170°46' 30" - 5500.00

FIGURE FIVE
EXISTING TUNNEL

NEW CONCRETE BULKHEAD

NEW 18° PIPELINE

SCREEN

EXISTING SPRING

12'

CONCRETE BULKHEAD SECTION

EXISTING TUNNEL

10'

10'

PIPELINE ANCHOR STRAP

NEW 18° PIPELINE

MID-DISTANCE TUNNEL SECTION

TUNNEL SECTIONS

FIGURE SIX
VIEW OF SPRING
AT THE TUNNEL
END. ABOUT
6 MILLION GALLONS
OF SPRING WATER
COMES FROM THIS
SOURCE.

VIEW OF THE LOCATION
WHERE THE CONCRETE
BULKHEAD WILL BE
CONSTRUCTED. THIS
COLLECTION ENCLOSURE
STRUCTURE IS LOCATED
ABOUT 12-FEET FROM
THE SPRING.

TUNNEL PHOTOS
VIEW OF POThOLE NEAR THE SPRING THAT CONTRIBUTES TO BACTERIOLOGICAL CONTAMINATION OF THE SPRING WATER.

VIEW OF THE TUNNEL WHERE THE 18" TRANSMISSION WILL BE PLACED. THE PIPELINE AND BULKHEAD WILL AVOID WATER LOSS DUE TO FRACTURES IN THE TUNNEL SYSTEM.
The adjoining 18-inch transmission line is about 450 linear feet and will be anchored in the existing tunnel. The transmission line will be connected to the existing 18-inch supply line located at the entrance of the tunnel.

**Gravel Service Road & Materials Storage Site**

The purpose of the gravel service road is to provide access to the portholes to perform routine maintenance and emergency repair of the Olaa Flume Spring System (see Figure 5, Olaa Flume Tunnel Improvement). The gravel service road will be constructed first to facilitate the pipeline installation and spring containment construction. The alignment of the service road coincides with some of the existing foot trails to the portholes of the tunnel.

The purpose of the materials storage site is to facilitate the equipment and materials for this project. The storage site is temporary and will be used only during the construction period. The rehabilitation of the materials storage site will begin after all the materials are installed and will include revegetation using the type of native plants found in that vicinity.

**III. SOCIAL AND ECONOMIC CHARACTERISTICS**

**Population**

The Hawaii County population as of April 1, 1990 was 120,317 people. Of that population, Hilo represents 37% of the Island's total. From the period of April 1, 1970 to April 1, 1990, Hilo's population percentage change has decreased from 24.7% during 1970 to 1980 to 5.6% from 1980 to 1986 (see Table 1, Resident Populations of Hawaii County).

**Water Consumption**

Water consumption for Hilo is not proportionately related to population increases during the period of 1970 to 1986. Hilo's population percentage change during 1970 to 1980 was 24.7%. The water consumption percentage change for the same period was 36.8%. Hilo's population percentage change during 1980 to 1990 was 5.6%. Water consumption percentage change during the same period was 17.8%. Water consumption increases were greater than population increases (see Table 2, Water Consumption).
Resident Population of County:

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Table 1
Resident Populations of Hawaii County
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<th>USAGE (MGD)</th>
<th>NO. CONSUMPTION SERV. (1000 GALS)</th>
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<th>NO. CONSUMPTION SERV. (1000 GALS)</th>
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Regulation Compliance

The Surface Water Treatment Rule applies to surface water drinking sources and those groundwater sources under the influence (GWI). Olaa Flume Spring is considered GWI because the porthole allows surface water to mix with the spring water in the tunnel. The vegetation from the porthole also contaminates the spring water.

The regulation requires GWI sources to filter and disinfect before distribution. This treatment requirement is expensive and beyond the DWS's resources. Alternative action included well development to replace this source. The cost of well development including booster stations is estimated at $3.1M (see Table 3, Surface Water Treatment Rule Impact Cost Estimate).

The Olaa Flume Tunnel Improvement will cost about $300,000 which represents a considerable savings in comparison to a well development. This project will also be constructed and operational before the compliance deadline of July 1, 1993.

Archaeology

Review of archaeological site location maps on file with the State Historical Preservation Office, Department of Land and Natural Resources did not show any sites in the project area. This area is far from the coastal area and at high elevation and ancient Hawaiian utilization was minimal.

Pre-1900 land use as described by Holly McEldowney, "Archaeological and Historical Literature Search and Research Design, Lava Flow Control Study, Hilo, Hawaii" indicated that "the probability of finding structural or artifactual evidence of these activities (gathering of forest resources) appears low due to the temporary nature of the huts and the dense character of the ground cover, which would quickly close unused paths and cleared areas."

Also, previous clearing of the project area to construct the tunnel area during 1900 may have destroyed any archaeological site. This scenario is unlikely due to very little likelihood of any sites being in the vicinity but this discussion of previous land clearing was necessary.

Latent Benefit

The salvage of Olaa Flume Spring provides for a latent benefit whose value would be realized immeasurably in a catastrophic disaster. One scenario of this could be the following. One day a hurricane will pass over the Big Island and cause widespread destruction, including loss of electrical power. All wells will be inoperable and Olaa Flume spring will be able to supply water to critical facilities such as Hilo Hospital. This project provides for the protection of the drinking water source during hurricanes.
## SERVICES

The SWTR.WK1 IMPACT COST ESTIMATE - SURFACE WATER TREATMENT RULE is summarized below.

### Table 3: IMPROVEMENTS

<table>
<thead>
<tr>
<th>SYSTEM</th>
<th>SOURCE</th>
<th>IMPROVEMENTS</th>
<th>SCHEDULE</th>
<th>ELEVATION (ft)</th>
<th>(gpm) COST ($)</th>
<th>COST ($) PRIORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>KILO 12,311</td>
<td>Olaa Flume</td>
<td>1) 3 Booster Stations &amp; 3 booster stations</td>
<td>3.000</td>
<td>1.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lyman Spring</td>
<td>2) Production Well &amp; 3 booster stations</td>
<td>2,100</td>
<td>1.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) Backup Pump &amp; 3 booster stations</td>
<td>1,000</td>
<td>0.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4) Deep Well &amp; Camp 7</td>
<td>1,000</td>
<td>1.70</td>
<td>4.00 (11)</td>
<td></td>
</tr>
<tr>
<td>MAUNA/</td>
<td>Waikaa-Uka Spring</td>
<td>1) Deep Well &amp; Mauna Res.</td>
<td>445</td>
<td>1.00</td>
<td></td>
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<tr>
<td>WAIKAIKOU</td>
<td></td>
<td>2) Booster Sta. w/ 0.02 MG Res.</td>
<td>500</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) Modification of Spring</td>
<td>100</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4) Deep Well &amp; Pahilia Res.</td>
<td>100</td>
<td>1.00</td>
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<tr>
<td></td>
<td></td>
<td>5) Booster Sta. &amp; Pahilia Res.</td>
<td>200</td>
<td>0.15</td>
<td>0.00 (12)</td>
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<tr>
<td>PEPEHKEO 445</td>
<td>Makuakoa Spring</td>
<td>1) Deep Well &amp; Kulalaino Res.</td>
<td>707</td>
<td>1.00</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>2) Booster Station &amp; Kulalaino Res.</td>
<td>150</td>
<td>0.15</td>
<td>0.15 (13)</td>
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<tr>
<td>HONOHU 267</td>
<td>Akaka Falls Spring</td>
<td>1) Deep Well &amp; Honohu Res.</td>
<td>525</td>
<td>1.00</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>2) 2nd Deep Well @ near Honohu Reservoir</td>
<td>500</td>
<td>1.00</td>
<td>1.00 (14)</td>
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</tr>
<tr>
<td>HAKULAI 61</td>
<td>Hakaulu Iki Spring</td>
<td>1) Package Filter Plant</td>
<td>1,225</td>
<td>0.10</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Modification of Spring</td>
<td>511</td>
<td>0.05</td>
<td>0.05 (15)</td>
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</tr>
<tr>
<td>HAWAI 158</td>
<td>Kukuihaele Spring</td>
<td>1) Deep Well @ Kukuihaele Tank</td>
<td>956</td>
<td>1.50</td>
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<tr>
<td></td>
<td></td>
<td>2) Deep Well @ Kapulena Res.</td>
<td>1,000</td>
<td>1.50</td>
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<tr>
<td></td>
<td></td>
<td>3) Modification of Spring</td>
<td>555</td>
<td>0.05</td>
<td>0.05 (16)</td>
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<tr>
<td>MAUI 80</td>
<td>Murphy Tunnel</td>
<td>1) Package Filter Plant</td>
<td>1,200</td>
<td>0.10</td>
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<tr>
<td></td>
<td></td>
<td>2) Modification of Tunnels</td>
<td>621</td>
<td>0.20</td>
<td>0.20 (17)</td>
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</tr>
<tr>
<td>MAUI 202</td>
<td>Bond Tunnel</td>
<td>1) Deep Well @ Makalua Res.</td>
<td>700</td>
<td>0.10</td>
<td>0.10 (18)</td>
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<tr>
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<td>2) Modification of Tunnels</td>
<td>1112</td>
<td>2.50</td>
<td>2.50 (19)</td>
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<td>MAUI 1,032</td>
<td>Watt Tunnel</td>
<td>1) Deep Well @ Hui Reservoir</td>
<td>810</td>
<td>1.70</td>
<td></td>
<td></td>
</tr>
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<td></td>
<td>Hapahawai Tunnel</td>
<td>2) Modification of Watt &amp; Tunnels</td>
<td>0.10</td>
<td>1.80 (20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) 0.05 MG Reservoir/Booster</td>
<td>740</td>
<td>1.40</td>
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<td>MAUI 642</td>
<td>Alili Tunnel</td>
<td>1) Deep Well &amp; Alili Res.</td>
<td>500</td>
<td>0.70</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Booster Station &amp; Mt. House Reservoir</td>
<td>400</td>
<td>0.50</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>3) 0.05 MG Reservoir/Booster</td>
<td>400</td>
<td>0.70</td>
<td>3.00 (21)</td>
<td></td>
</tr>
</tbody>
</table>

**IN TOTALS**

- IMPACT COST ESTIMATE: $24.50 M
- IMPACT COST PRIOR: $15.50 M

---

TABLE THREE
IV. ENVIRONMENTAL CHARACTERISTICS

Climate

The Island of Hawaii has a semi-tropical climate and the range of land elevations lends to a climate of wide variations. Rainfall reaches a maximum intensity from 2,000 to 3,000 feet elevations and decreases at the higher elevations.

Olaa Flume Spring is located in an area where the mean annual rainfall is between 200 inches to 250 inches (see Figure 9, Rainfall Map).

Temperatures range from 58° to 90° along the coast to almost freezing in the mountains.

Soils

U.S. Soil Conservation Service has mapped soil surveys for the Island of Hawaii. Figure 10, Soil Survey Map No. 82, outlines soil areas and soil types for the vicinity of Olaa Flume Spring. Soil designation for Olaa Flume Spring is rKGD, Kealakehe extremely rocky muck. In a representative soil of rKGD, the surface layer is very dark brown muck about 10 inches thick and underlain by Pahoehoe lava bedrock.

The Pahoehoe lava bedrock is very slowly permeable except where cracks occur and the surface layer is rapidly permeable. Runoff is medium and the erosion hazard is slight.

Adjacent to Olaa Flume Spring is the Lava Flow of 1855. This is Pahoehoe lava flow which is typically bare except for mosses and lichens. Where cracks and crevices occur, ohia trees, aalii, and other trees exist due to heavy rainfall. This type of lava contributes to the groundwater supply.

Water Source Quantity and Quality

From earlier studies by Daniel Lum and William J. Hull, Olaa Flume Spring produces an average flow of 6 to 7 million gallons per day (mgd), with an estimated low-flow of 500,000 gallons per day.

The Olaa Flume Spring is a subterranean perched groundwater spring which receives water that percolates through the Lava Flow of 1855. It is believed that perched water storage is adequate for sustained low flows but small enough to provide rapid response to climatic conditions. With heavy rains, the spring supply changed from 1 mgd to 7 mgd in 4 days.
Mean Annual Rainfall in inches

RAINFALL MAP

Source: USGS Report R47

-17-
A water quality analysis was conducted on March 4, 1992 of Olaa Flume Spring water in the tunnel and results were as follows:

- **Turbidity** = 0.18 NTU
- **pH** = 7.30
- **Temperature** = 18.1°C
- Fecal Coliform Negative at the spring location
- Fecal Coliform Positive at the porthole location

Regulator monitoring from 1983 to present indicates that no chemicals exist in the source or corresponding watershed areas. The Hilo Watershed area remains pristine and that accounts for the higher quality drinking water produced from this source.

We are experiencing bacteriological contamination from the porthole and chlorine disinfection adequately inactivities the bacteria. This project will minimize the contamination potential.

**Vegetation**

A reconnaissance of the service road and materials storage areas was conducted to document plant life and to investigate potential environment problems.

There exists cleared footpaths that coincide with the proposed service road alignment (see Figure 11, Vegetation and Footpath Map). Approximately 2,640 square feet of vegetation will be cleared for the service road construction.

**V. SUMMARY OF IMPACTS AND ALTERNATIVES CONSIDERED**

**Short-Term Impacts**

During the construction of the project, minor adverse impacts such as noise and muddy conditions are anticipated.

**Long-Term Impacts**

- **Air Quality**
  
  No significant impact to air quality is expected.

- **Landforms and Flora**

  A strip of vegetation 10 feet wide by 450 feet long will be cleared and graded. Manufactured gravel will be laid to stabilize the road surface. Existing cleared foot trails are within the proposed service road corridor.

- **Water Quality**
Figure 11 Vegetation and Footpath Map
Water Quality

This project will improve the water quality of this drinking water source.

Noise

No significant noise impact is anticipated.

Traffic

No significant traffic impact is anticipated.

Archaeological

No significant archaeological impact is anticipated.

Fauna

No significant impact on fauna is anticipated.

Visual

No significant visual impact is anticipated.

Alternatives Considered

The "no action" alternative was considered but deemed to be unacceptable because the benefits of this project far outweigh the adverse impacts of the project.

Mitigation Measures

The temporary materials storage site will be revegetated after the project is complete. Native plants similar to the ones found in that vicinity will be used.

The temporary muddy conditions from land clearing will be kept to a minimal by planning service road construction during dry weather conditions.

Determination

The Olaa Flume Tunnel Improvement is not expected to cause significant impacts to the environment. Therefore, it has determined that a negative declaration will be filed.
Findings and Reasons Supporting Determination

1. The proposed project will not involve the destruction to any natural or cultural resources.

2. The proposed project will not curtail the range of beneficial uses of the environment.

3. The proposed project will not conflict with the State's long-term environmental policies.

4. The proposed project will not substantially affect the economic or social welfare of the community or State.

5. The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.

6. The proposed project will not involve substantial degradation of environmental quality.

7. The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat. No endangered species of flora of fauna are known to exist in the project site.

8. The proposed project will not detrimentally affect air or water quality or ambient noise levels.

9. The proposed project will not be located in any environmentally sensitive area, such as flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

For the reasons above, the proposed project will not have any significant effect in the context of Chapter 343, Hawaii Revised Statutes.

VI. LIST OF AGENCIES CONSULTED AND REFERENCES USED

1. Department of Land and Natural Resources, State of Hawaii

2. Department of Planning, County of Hawaii

3. Department of Health, State of Hawaii

4. Soil Conservation Service, U.S. Department of Agriculture

5. The General Plan, Hawaii County, November 1989

7. Hawaii County Water Use and Development Plan, December 1989

8. Hawaii Revised Statutes, Title II, Chapter 20, Rules Relating to Potable Water


11. Faunal Survey, Wailuku River Hydroelectric Co. Project Site, April 4, 1992


15. Appraisal Report - Olaa Flume Spring Source, November 1975

16. Reconnaissance of the Olaa Flume Source, December 21, 1973

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

FOR DLNR USE ONLY

DEPARTMENT MASTER APPLICATION FORM

I. LANDOWNER/WATER SOURCE OWNER
(If State land, to be filled in by Government Agency in control of property)
Name ____________________________
Hawaii Conference of the
United Church of Christ
Address Hawaii Conference Foundation
15 Craigside Place
2103 Nuuanu Avenue
Honolulu, HI 96817
Telephone No. 537-9216

II. APPLICANT (Water Use, omit if applicant is landowner)
Name ____________________________________________________________
Department of Water Supply
County of Hawaii
Address Dept. of Water Supply, C of H
25 Aupuni Street
Hilo, HI 96720
Telephone No. 969-1421

III. TYPE OF PERMIT(S) APPLYING FOR
( ) A. State Lands
(x) 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 Hilo
Island Hawaii
County Hawaii
Tax Map Key 2-5-01:13 lot 5-A
Area of Parcel 10.877 Acres
(Term (if lease) ____________________________

SIGNATURE ____________________________
Date ____________________________
James A. Richards

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

SIGNATURE ____________________________
Date ____________________________
George Y. Tengan, Deputy Manag

RECEIVED JAN 19 1994
APPLICATION FOR: (check one)

PERMIT TO WITHDRAW WATER FOR BENEFICIAL USE

X PERMIT TO SUPPLY WATER FOR BENEFICIAL USE

Fill out, sign page 1, send application with pertinent attachments to Department of Land and Natural Resources, P. O. Box 621, Honolulu, Hawaii 96809. A non-refundable filing fee of $100 is required, excepting military, federal, state, and local government agencies.

1. REQUESTED BENEFICIAL USE OF WATER:

   ___ Domestic  X Municipal  ___ Military  ___ Agricultural  ___ Industrial
   ___ Other ____________________________

   Appropriately describe nature and purpose of requested use: * Intent of project is to sanitize collection system per Surface Water Treatment Rule and maximize collection of source water. Proposed commencement date of water use: ________________________________.

2. REQUESTED AMOUNT OF WITHDRAWAL OR SUPPLY:

   Average Annual ___ mgd; Maximum Month ___ mgd; Maximum Day ___ mgd.

   Appropriately describe schedule or times of taking requested withdrawal:

   ________________________________

3. NATURE AND TERM OF REQUESTED PERMIT:

   X Temporary  ___ Permanent

   Requested period of permit ________________________________

4. PROPOSED SOURCE OF WATER SUPPLY:

   ___ Existing source  X Modification of existing source  ___ New Source

   Briefly describe existing or proposed source and any related facilities and submit map, plot plan, and plans or drawings of source of supply:

   Existing source is transported via an open tunnel system. This project includes the collection enclosure construction and installation of a pipeline from the collection enclosure to the existing 18" pipeline (±450'). If construction work is proposed for new or modified existing source, give:

   Commencement Date _________ Completion Date _________

5. ASSESSMENT OF REQUESTED WATER USE OR SUPPLY:

   In a separate attachment to this application, applicant must provide a written assessment addressing the desirability of issuing the requested permit, including such considerations as the availability of water, the beneficial purpose of the proposed water use, and the impact if any, of the proposed water use on existing permitted uses, preserved uses, and individual household uses.

* Use additional sheets as necessary.
DOCUMENT FOR PUBLICATION IN THE OEQC BULLETIN

Date: 8/07/92  Prepared by: DEPARTMENT OF WATER SUPPLY

The document is a (check all that apply)

- Chapter 205A Document ( )
- Chapter 343 Document ( X )
- NEPA Document ( )
- Negative Declaration ( X )
- EIS Preparation Notice ( )
- Draft EIS ( )
- Final EIS ( )
- Acceptance Notice ( )

Is the document a supplemental EIS?  Yes ( )  No ( X )

Title of Proposed Action or Project: OLAA FLUME TUNNEL IMPROVEMENT

Location: Island HAWAII  District SOUTH HILO

Type of Action (check one):  Applicant ( )  Agency ( X )

Name of Proposing Applicant or Agency: DEPARTMENT OF WATER SUPPLY
Name of Contact: DENNIS LEE, WATER QUALITY AND ASSURANCE BRANCH
Address: 25 AUPUNI STREET
City: HILO  State: HAWAII  Zip Code: 96720
Phone: (808) 969-1421

Name of Preparer or Consultant: DEPARTMENT OF WATER SUPPLY
Name of Contact: DENNIS LEE
Address:
City:  State: Zip Code: 
Phone: ( )

Accepting Authority:  DEPARTMENT OF LAND & NATURAL RESOURCES

Estimated Project Cost:
- Federal Funds $ __________
- State Funds $ __________
- County Funds $ 300,000
- Private Funds $ __________
- TOTAL $ __________

Document Preparation Cost:
- Neg Dec/EA $ __________
- Draft EIS $ __________
- Sup Draft EIS $ __________
- Sup Final EIS $ __________
- TOTAL $ __________

EA Trigger (check all that apply)

( ) Use of State or County Lands or Funds
( X ) Use of Conservation District Lands
( ) Use of Shoreline Setback Area
( ) Use of Historic Site or District
( ) Use of Lands in the Waikiki Special District
( ) Use Requiring an Amendment to a County General Plan

NOTE: For answers to any question on Page 10 or 11, please contact the Office of Environmental Quality Control at (808) 548-6915.
( ) Use Requiring the Reclassification of Conservation Lands
( ) Construction or Modification of Helicopter Facilities
( ) Other

Brief Description of the Proposed Action or Project which will be Published in the OEQC Bulletin (limit of 500 words or less):

The Department of Water Supply, County of Hawaii, proposes to construct a spring collection enclosure and adjoining 18-inch pipeline in the existing tunnel structure. The construction of a service road running parallel to the existing tunnel alignment is also proposed along with a temporary materials storage area. The project is located in the Hilo Watershed on conservation zoned lands.

The purpose of the project is three-fold:

1) To sanitize the collection of spring water in the tunnel. There exist portholes in the tunnel that contribute to the contamination of the spring water.
2) To maximize the collection of spring water in the tunnel. Rock fractures in the tunnel contribute to water loss during the transport of spring water.
3) To provide for a drinking water source which would be operational during power outages.

(Continue on another sheet if necessary)

Tax Map Key(s): 2-5-01:13

FOR OEQC USE ONLY

Date of Submission: [EXPECTED]
Date of Publication: [EXPECTED]
Last Day for Consulted Party Request: [EXPECTED]
Comment Period Ends: [EXPECTED]
Acceptance Date: [EXPECTED]
Publication Date of Acceptance: [EXPECTED]

[OEQC Form 89-01 (1/89) Page 2 of 2]