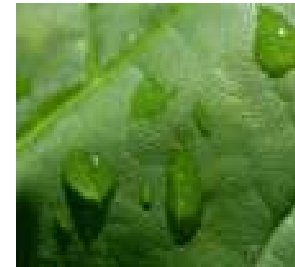




*Hawai'i's  
Rainwater  
Catchment  
Services  
Directory*



*Published by:  
Hawai'i Rainwater Catchment  
Systems (HRCS) Association*

*– 2007 –*

## *Letter from the President*

*Welcome to the first edition of the Hawai'i Rainwater Catchment Systems (HRCS) Association's "Rainwater Catchment Services Directory".*

*We hope you find this directory useful for your water catchment needs. I invite you to also use our web site at [www.hracs.us](http://www.hracs.us) to obtain other valuable information on rainwater catchment.*

*HRCS has invited all of the people and businesses that we are aware of in our community to participate in this booklet, but not all chose to participate, even when we offered free listings. Our first directory includes mostly service providers from the Big Island, but we plan to expand the directory for all of the Hawaiian Islands in future additions.*

*The purpose of our association is to promote rainwater catchment systems as a viable drinking water source, and to distribute credible information for health, safety, technology and services.*

*I invite you to join our association. Go to [www.hracs.us](http://www.hracs.us) and click on membership and join today!*

*Mahalo nui loa to all of our existing members for your valuable support of HRCS!*

*Please feel free to e-mail us at [hawaii-catchment@earthlink.net](mailto:hawaii-catchment@earthlink.net) with your thoughts or suggestions.*

*With Aloha,*

*Scott D. Leonard*

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## ***Purpose***

*The purpose of this directory is to be a single-point resource that owners of water catchment systems can use to find businesses that provide services for water catchment systems.*

## ***Public Service Statement***

*Even though this directory is assembled by HRCS, it is the user of this directory who is responsible for investigating who provides the best service and who will adequately and reliably meet their needs. HRCS does not recommend any person or business listed in this directory. No evaluation criteria were used to evaluate individuals or companies listed in this directory. Should you decide to use this directory you agree to indemnify, defend and hold harmless HRCS Association, its officers, directors, partners, suppliers or support agencies against all losses, expenses, damages and costs, including attorney's fees, resulting from any liability resulting from any service provider selected from this directory.*

## ***Customer References***

*We recommend that you obtain at least three quotes and three references to help in your evaluation.*

## ***Errors or Omissions***

*In the event HRCS makes a mistake in an ad, HRCS will correct the error and waive the advertising fee for that advertiser in the next edition.*

## *How to Place an Ad*

*If you are a business that is providing a service to rainwater catchment systems in Hawai'i, then you should be in this directory.*

*This directory offers you the opportunity to advertise your services under several categories. You may want to purchase a full page or half page ad that describes your main business and then describe each particular service under separate listings that refer back to your larger ad.*

*It is our goal to distribute this directory to real estate agents, homeowner associations, service providers, the University's Cooperative Extension Office and the county building department. That is a pretty wide distribution for your business! This is a book that catchment users want, so be sure you are included.*

*To place an ad in our next directory, please go to [www.hrcs.us](http://www.hrcs.us) and select publications.*

**22<sup>nd</sup> CENTURY  
BIG ISLAND CATCHMENT**

Attention  
“Owner/Builders”

*We design state-of-the-art  
Catchment Systems from  
appropriate roofing material  
thru catchment tank selection.*

Our Specialty:

- New Construction
- Near-Ocean Two-story Homes
- Unobtrusive Systems in Custom Colors
- Environmentally correct

**Let us know about your project at:  
[catchment@backin10.com](mailto:catchment@backin10.com)**

## Architects / Designers (cont)

**Dennis Preston Davis, Architect**  
P.O. Box 401, Pahoa, HI 96778  
(808) 982-7902

**Integrated Architecture**  
***Green Design, Project Management***  
4176 Round Top Drive, Honolulu, HI 96822  
(808) 945-3853 voice  
(808) 944-8177 fax

**Taylor Cockerham, Architect**  
159 Keawe St., Suite 2, Hilo, HI 96720  
(808) 961-0374



*Two-thirds of the earth's surface is covered with seas and oceans. How much of the world's water is suitable for human use?*

*Answer on page 51.*

## Associations



### **American Rainwater Catchment Systems Association (ARCSA)**

ARCSA  
P.O. Box 12521  
Austin, TX 78711-2521  
[www.arcsa-usa.org](http://www.arcsa-usa.org)



### **International Rainwater Catchment Systems Association**

[www.ircsa.org](http://www.ircsa.org)



### **The International Rainwater Harvesting Alliance**

Maison Internationale de l'Environnement II,  
Chemin de Balexert 7-9

CH-1219 Chatelaine, Geneva, Switzerland

Tel: +41 22 797 41 57 / 58 Fax: +41 22 320 88 57

[www.irha-h2o.org](http://www.irha-h2o.org) e-mail: [secretariat@irha-h2o.org](mailto:secretariat@irha-h2o.org)



### **Hawai'i Rainwater Catchment Systems Association**

550 Akolea Road, Hilo, HI 96720-1511

[www.hrscs.us](http://www.hrscs.us)

e-mail: [Hawaii-catchment@earthlink.net](mailto:Hawaii-catchment@earthlink.net)



## Cleaners / Maintainers



**Catchment Cleaning**

- Got bluish green stains on your porcelain?
- Balance Your Tank Water
- Keep Your Water Clear
- Pump installs and repairs
- Monthly Water Maintenance

Poolbrite.net  
960-1026

960-1026 ask for Chris  
[www.poolbrite.net](http://www.poolbrite.net)

**Cleaners / Maintainers (cont)**



**"Caring About Today's Water  
For Tomorrow"**

\* PROFESSIONAL CLEANING, MAINTENANCE AND INSPECTIONS

\* FILTRATION AND UV PURIFICATION

\* CATCHMENT COVERS AND SUPPORT SYSTEMS

\* WATER PUMPS AND PRESSURE TANKS

\* QUALITY CORRUGATED STEEL WATER TANKS

\* REPLACEMENT LINERS

**Locally Owned and Family Operated**

Maiva, Craig & Brandon Blaisdell

Certified Pool & Spa Operator # 96-106183

**PH: 965-6453**

**Fax: 965-0650**

**Cell: 938-5231**

## Cleaners / Maintainers (cont)

**Big Island Catchment Cleaning**

Removal of Debris & Sediment  
No Water Loss

Tank & Filter Installation  
Reliable & Quality Service

Call: (808)756-3033



**Big Island Pool Service**  
P.O. Box 124, Pahoa, Hawaii 96778

**965-6300**  
Claire Rubens

*Cleaning and Maintaining  
Water Catchments & Swimming Pools for 12 years*



### **Gregg's Handyman Service**

HCR1 Box 5280, Kea'au, HI 96749  
(808) 982-9838

See ad on page 21.

## Cleaners / Maintainers (cont)

### **Koba Pumps**

13-3423 Maile St., Pahoia, HI 96778  
(808) 965-1498

Catchment cleaning. See ad on page 32.

### **Akamai Pure Water Systems**

P.O. Box 552, Pahoia, HI 96778  
(808) 965-9000 (808) 895-7609

See ad on page 43.

### **Water Works**

741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111

Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)

E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)

*An automatic dishwasher uses  
approximately 9 to 12 gallons of  
water while hand washing dishes  
can use up to 20 gallons.*

## Government Agencies

Rainwater Catchment Users Assistance Program

**Trisha Macomber** – Extension Educator

University of Hawaii – CTAHR - NREM

875 Komohana Street, Hilo, HI 96720

Phone: (808) 981-5199 Fax: (808) 981-5211

E-mail: [macomber@hawaii.edu](mailto:macomber@hawaii.edu)

Department of Health Safe Drinking Water Branch

**Theresa McGeehan-Takiue**

– Environmental Health Specialist

1582 Kamehameha Ave., Hilo, HI 96720

Phone: (808) 933-0401 Fax: (808) 933-0400

[ttakiue@eha.health.state.hi.us](mailto:ttakiue@eha.health.state.hi.us)

Department of Health Safe Drinking Water Branch

919 Ala Moana Boulevard, Rm. 308, Honolulu, HI 96814

Phone: (808) 586-4258 Fax: (808) 586-4370

Toll Free access for neighbor islands: 974-4000 Ext: 64258#

How many people globally are without access to a safe water supply and modern sanitation facilities?  
Answer on page 51.





Inspectors



**Scott D. Leonard**  
(808) 895-4320

**Paliuli Home Inspection**

550 Akolea Road  
Hilo, Hawaii 96720

scott@paliuli.biz  [www.paliuli.biz](http://www.paliuli.biz)

Integrated testing of water catchment systems.  
Go to [www.paliuli.biz](http://www.paliuli.biz) to learn more or call me.

*Certified by:*



**"Delivering Details that Make the Difference"**

## Inspectors (cont)



**HouseMaster**  
"Home Inspections. Done Right."<sup>SM</sup>  
LUX INSPECTIONS, L.L.C.

**JEFF LUX**  
Manager



Phone: (808) 982-6506  
Fax: (808) 966-9406  
E-mail [jlux@housemaster.com](mailto:jlux@housemaster.com)  
HC1 Box 5146  
Keeau, Hawaii 96749

Lic. No. 142701

### **Gregg's Handyman Service**

HCR1 Box 5280, Kea'au, HI 96749  
(808) 982-9838

See ad on page 21.

### **Island Inspections**

P.O. Box 6566 Hilo, HI 96720  
(808) 969-9070

Home inspector. [www.islandinspections.com](http://www.islandinspections.com)

### **Hawaiian Isles Inspections**

(808) 982-5575 fax  
[hawaiianisleinsp@aol.com](mailto:hawaiianisleinsp@aol.com)

On time and accurate home and commercial inspections.

## Inspectors (cont)

### **Pololei Labs - Water Quality Testing Laboratory**

120 Pauahi St., Suite 203, Hilo, HI 96720

(808) 938-0560

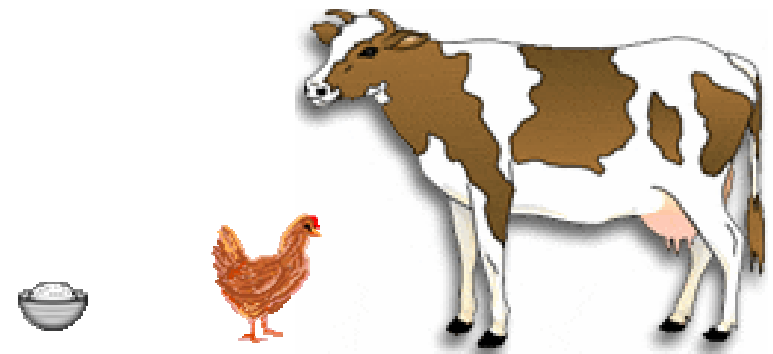
Expertise in rainwater catchment systems inspection & water testing. See ad on page 24.

### **Rain Water Catchment Service**

P.O. Box 433, Kea 'au, HI 96749

(808) 965-6453

See ad on page 10.



**How many gallons of water are needed to grow one kilogram of rice and one kilogram of chicken and beef?**

Answer on page 51.

Source: Economic and Social Commission for Asia and the Pacific



## Installers – Gutters

**Island Catchment Company** - Maku 'u & 33<sup>rd</sup> St.  
15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749  
(808) 982-8282  
Web: [www.islandcatchment.com](http://www.islandcatchment.com)  
E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

**Water Works**  
741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111  
Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)  
E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)



Kilauea volcano releases 350 metric tons per day of sulfur dioxide (SO<sub>2</sub>) during eruptive pauses, and 1850 metric tons per day during active eruption. When the SO<sub>2</sub> combines with water molecules in the atmosphere, the result is acid rain which is corrosive and harmful to plants. Rain is considered acidic when it has a pH less than 5.6. The acidity can be neutralized by adding baking soda to your catchment tank. A pH value of 7.0 is neutral.

## Installers – Tanks

**Hawaii Catchment Co., LLC.**

18 Years  
Experience



Corrugated Tanks • Pools • Dome Frame Cover Support  
Liners • Covers • Tarps • Pumps  
Water Purifiers • Water Test Kit

**Water Tank Installation & Services**  
**982-8888**  
16-643 Kipimana St. #19  
Shipman Business Park • Keaau

**Big Island Catchment Cleaning**

P.O Box 1401, Pahoa, HI 96778  
(808) 756-3033

We install tanks. See ad on page 11.

**Big Island Tanks, Inc**

81-991A Keopuka Road, Kealahou, HI 96750  
(808) 323-3555

We install tanks. See ad on page 39.

## Installers – Tanks (cont)

### **Gregg's Handyman Service**

HCR1 Box 5280, Kea'au, HI 96749  
(808) 982-9838

See ad on page 21.

### **Island Catchment Company - Maku'u & 33<sup>rd</sup> St.**

15-1934 33<sup>rd</sup> St., Kea'au, HI 96749  
(808) 982-8282

Web: [www.islandcatchment.com](http://www.islandcatchment.com)

E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

### **Paradise Pools**

15-2058 19<sup>th</sup> Ave, Kea'au, HI 96749  
(808) 982-6701

[www.Paradisepools.citymax.com](http://www.Paradisepools.citymax.com)

### **Water Works**

741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111

Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)

E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)



*If any of your faucets are leaking drop after drop, how much water is lost from each tap day after day?*

*Answer on page 51.*



## Installers – Treatment (cont)

### Gregg's Handyman Service

Prompt Professional Service

All Trades ~ With Integrity

HILO TO PUNA

☛CALL: 443-3713(Cell) or 982-9838(Home)☛

*Services include cleaning, inspection,  
installation of tanks and water testing.*

#### **Akamai Pure Water Systems**

P.O. Box 552, Pahoa, HI 96778  
(808) 965-9000 (808) 895-7609

See ad on page 43.

#### **Big Island Catchment Cleaning**

P.O. Box 1401, Pahoa, HI 96778  
(808) 756-3033

We install treatment systems.  
See ad on page 11.

#### **Hawaii Catchment Company**

16-643 Kipimana St. #19, Kea'au, HI 96749  
(808) 982-8888

See ad on page 18.

## Installers – Treatment (cont)

**Island Catchment Company** - Maku 'u & 33<sup>rd</sup> St.  
15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749  
(808) 982-8282  
Web: [www.islandcatchment.com](http://www.islandcatchment.com)  
E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

**Koba Pumps**  
13-3423 Maile St., Pahoia, HI 96778  
(808) 965-1498  
Integrated treatment systems. See ad on page 32.

**Mountain Slope Water**  
180 E. Wakea, Kahului, HI 96732 (Maui)  
(808) 893-0377  
Web: [www.mountainslopewater.com](http://www.mountainslopewater.com)

**Rain Water Catchment Service**  
P.O. Box 433, Kea 'au, HI 96749  
(808) 965-6453  
See ad on page 10.

**Water Works**  
741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111  
Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)  
E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)

## Labs

Certified or Approved by the Hawai'i Department of  
Health, State Laboratories Division

**Aecos Laboratory, Inc.** / Microbiology  
(HI DOH supplemented Copper and Lead testing)  
45-939 Kamehameha Highway, Suite 104  
Kaneohe, HI 96744  
(808) 234-7770

**Test America**  
Chemical Contaminants  
99-193 Aiea Heights Drive, Suite 121, Aiea, HI 96701  
(808) 486-5227

### **Why should you advertise in the Hawai'i Rainwater Catchment Service Directory?**

- It is a single source document for users.
- It has wide distribution to buyers of catchment systems.
- It is cheap advertising.

## Labs (cont)


### Non-certified Labs

**Know What Is In Your Water !**  
**Affordable Water Testing**

**POLOLEI LABS**  
**938-0560**

Enjoy the peace of mind that comes with knowing your water is safe and clean. Not knowing what is in your water is scary. We can tell you what is, or is not in your water, and show you how you can make your water clean and safe to use.

**Water Quality Testing**  
**Catchment System Inspection**  
**Environmental Laboratory Services**  
**Hawai'i Department of Health Certified**  
**Drinking Water Treatment System Operator**  
**A Division Of Hawai'i Environmental Engineering Inc.**



**University of Hawaii Manoa's Agricultural Diagnostic Svcs**  
(Metals, Heavy metals, minerals, nitrates, nitrogen, salinity, pH) (Samples shipped to Manoa on Tues mornings from the Hilo Extension Office) / 875 Komohana St. Hilo, HI 96720  
(808) 981-5199 (808) 981-5211

**Aecos Laboratory, Inc.**  
74-5602 Alapa St. # 656  
Kailua-Kona, HI 96740  
  
(808) 329-8411



## Plumbers

No plumbers have requested a listing in the directory at this time. To help you find a plumber you can go to any of the following three Big Island phone book web sites:

[www.HTYellowPages.com](http://www.HTYellowPages.com)

[www.yourislandpages.com](http://www.yourislandpages.com)

[www.theparadisepages.com](http://www.theparadisepages.com)

### Test your water knowledge

True or False

- 1) More things can be dissolved in sulfuric acid than in water.
- 2) Rainwater is the purest form of water.
- 3) It takes more energy to heat water at room temperature to 212°F than it does to change 212°F water to steam.
- 4) Water boils quicker at Volcano, HI. than at the beach.
- 5) Raindrops are tear-shaped.

Answers are on page 51.

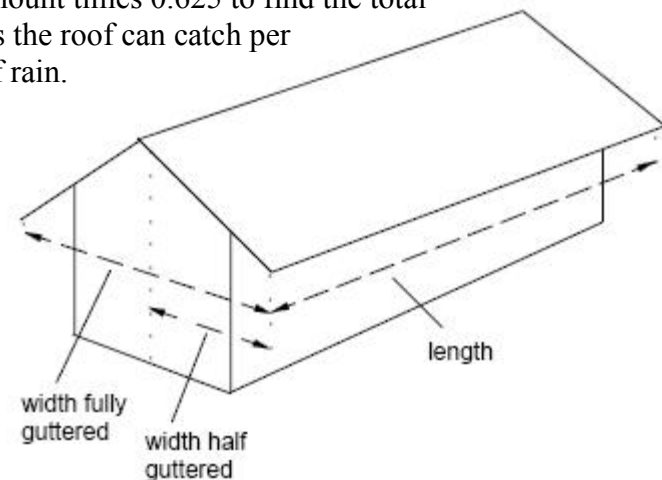
Source: <http://ga.water.usgs.gov/edu/sc3.html>

## Roofers



### How much rain can your roof catch?

A square foot of horizontal surface receives approximately 0.625 gallons of water with each inch of rain fall. Surfaces that slope, like your roof, catch less water per square foot of surface area. So it is not the area of roof surface that you need to measure, but the roof's "footprint", the area of ground under it. Measure the sides of your house from eave to eave. Multiply the length times the width to get the square footage of the catchment surface. Multiply that amount times 0.625 to find the total gallons the roof can catch per inch of rain.



## Suppliers – Chemicals

**Island Catchment Company** - Maku 'u & 33<sup>rd</sup> St.  
15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749  
(808) 982-8282  
Web: [www.islandcatchment.com](http://www.islandcatchment.com)  
E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

**Orchidland General Store**  
16-125 Orchidland Dr., Kea 'au, HI 96749  
(808) 966-6711

**Trojan Lumber Company**  
199 Makaala St., Hilo, HI 96720  
(808) 935-9711  
[www.trojanlumber.com](http://www.trojanlumber.com)  
We sell chemicals for water catchment systems.

**Volcano True Value**  
19-3984 Old Volcano Road, Volcano, HI 96785  
(808) 967-7969

**Water Works**  
741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111  
Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)  
E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)

## Suppliers – Cleaning

*Now at Pahoa Market Place - next to Pahoa Hardware*



**PAHOA BATTERY & PROPANE**

Gas Appliances  
Composting Toilets  
Propane Tanks & Accessories  
Interstate Batteries for Auto & Solar  
Water Catchment Tanks & Supplies - Water Purification Systems

Mon-Fri 7am-6pm  
Sat: 8am-4pm; Sun: 9am-2pm

**965-9499**

### **Big Island Catchment Cleaning**

P.O Box 1401, Pahoa, HI 96778  
(808) 756-3033

We sell cleaning supplies. See ad on page 11.

### **Island Catchment Company - Maku 'u & 33<sup>rd</sup> St.**

15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749

(808) 982-8282

Web: [www.islandcatchment.com](http://www.islandcatchment.com)

E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

## Suppliers – Cleaning (cont)

### **Orchidland General Store**

16-125 Orchidland Dr., Kea 'au, HI 96749  
(808) 966-6711

### **Trojan Lumber Company**

199 Makaala St., Hilo, HI 96720  
(808) 935-9711  
[www.trojanlumber.com](http://www.trojanlumber.com)  
We sell cleaning supplies.

### **Volcano True Value**

19-3984 Old Volcano Road, Volcano, HI 96785  
(808) 967-7969

### **Water Works**

741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111  
Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)  
E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)

Use this size of an ad for each category of service you provide and have it direct your customer to your larger full or half page ad.

## Suppliers – Gutters

**Island Catchment Company** - Maku 'u & 33<sup>rd</sup> St.  
15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749  
(808) 982-8282  
Web: [www.islandcatchment.com](http://www.islandcatchment.com)  
E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

**Orchidland General Store**  
16-125 Orchidland Dr., Kea 'au, HI 96749  
(808) 966-6711

**Trojan Lumber Company**  
199 Maka 'ala St., Hilo, HI 96720  
(808) 935-9711  
[www.trojanlumber.com](http://www.trojanlumber.com)  
We sell gutters.

**Volcano True Value**  
19-3984 Old Volcano Road, Volcano, HI 96785  
(808) 967-7969

**Water Works**  
741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111  
Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)  
E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)

## Suppliers – Pipe

### **Orchidland General Store**

16-125 Orchidland Dr., Kea 'au, HI 96749  
(808) 966-6711

### **Volcano True Value**

19-3984 Old Volcano Road, Volcano, HI 96785  
(808) 967-7969

### **Water Works**

741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111

Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)

E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)

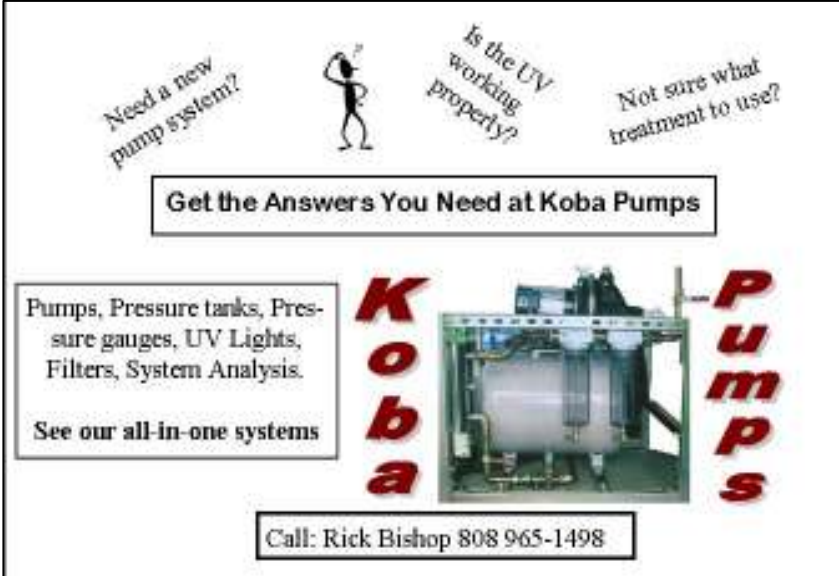
### **How much water do you use?**

How long will the catchment water last? Depends on your unique usage. Here is a rough idea:

Drinking and Cooking:	1 gal/day/person
Washing Dishes:	3 gal/day/person
Toilet Flushing:	16 gal/day/person
Washing Clothes:	10 gal/day/person
5 minute shower:	25-50 gal/day/person

A household of two could use as much as 110 - 160 gallons/day or 3300 - 4800 gallons/month.

## Suppliers – Pumps



Need a new pump system?

Is the UV working properly?


Not sure what treatment to use?

Get the Answers You Need at Koba Pumps

Pumps, Pressure tanks, Pressure gauges, UV Lights, Filters, System Analysis.

See our all-in-one systems

**K**  
**O**  
**b**  
**a**



**P**  
**U**  
**M**  
**P**  
**S**

Call: Rick Bishop 808 965-1498

### **Big Island Tanks, Inc**

81-991A Keopuka Road, Kealahou, HI 96750  
(808) 323-3555

We provide pumps. See ad on page 39.

### **Hawaii Catchment Company**

16-643 Kipimana St. #19, Kea'au, HI 96749  
(808) 982-8888

We supply pumps. See ad on page 18.



## Suppliers – Pumps (cont)

**Rain Water Catchment Service**

P.O. Box 433, Kea 'au, HI 96749  
(808) 965-6453

Please ad on page 10.

**Island Catchment Company - Maku 'u & 33<sup>rd</sup> St.**

15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749  
(808) 982-8282

Web: [www.islandcatchment.com](http://www.islandcatchment.com)

E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

**Orchidland General Store**

16-125 Orchidland Dr., Kea 'au, HI 96749  
(808) 966-6711

**Paradise Pools**

15-2058 19<sup>th</sup> Ave, Kea 'au, HI 96749  
(808) 982-6701

[www.Paradisepools.citymax.com](http://www.Paradisepools.citymax.com)

**Volcano True Value**

19-3984 Old Volcano Road, Volcano, HI 96785  
(808) 967-7969

## Suppliers – Pumps (cont)

### Water Works

741 Kanoelehua, Hilo, HI 96720

(808) 933-9111

Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)

E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)

### Do you know who the water gods are?

- 1) In Hindu mythology, the rain god is known as:
  - a. Vishnu
  - b. Indra
  - c. Brahma
  - d. Shiva
- 2) Who is the Roman god of rain?
  - a. Pluto
  - b. Mercury
  - c. Jupiter
  - d. Neptune
- 3) Who is known as the weather god in Greek mythology?
  - a. Zeus
  - b. Helios
  - c. Thor
  - d. Adonis
- 4) In Hawaiian mythology who governs water as a source of life?
  - a. Ku
  - b. Lono
  - c. Kāne
  - d. Lakakane

Answers are on page 53.

Source: <http://www.pitara.com/activities/quiz/online.asp?game=Water>

## Suppliers – Roofs

### **HPM Building Supply – Custom Metal Roofing**

16-166 Melekahiwa St., Kea 'au, HI 96749

(808) 966-5661

Web: [www.custommetalroofing.us](http://www.custommetalroofing.us)

### **Island Catchment Company - Maku 'u & 33<sup>rd</sup> St.**

15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749

(808) 982-8282

Web: [www.islandcatchment.com](http://www.islandcatchment.com)

E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

### **Orchidland General Store**

16-125 Orchidland Dr., Kea 'au, HI 96749

(808) 966-6711

### **Trojan Lumber Company**

199 Makaala St., Hilo, HI 96720

(808) 935-9711

[www.trojanlumber.com](http://www.trojanlumber.com)

We sell roofing material.

### **Volcano True Value**

19-3984 Old Volcano Road, Volcano, HI 96785

(808) 967-7969

## Suppliers – Roofs (cont)

### Water Works

741 Kanoelehua, Hilo, HI 96720

(808) 933-9111

Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)

E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)



*Don't forget the fire department !*

- *Take firefighting into consideration when planning your catchment system. Check with your local fire department.*
- *Some fire insurance companies require a specific size of catchment tank, usually 10,000 gallons.*
- *A 1200 sf dwelling requires about 2570 gallons of water to extinguish a fire.\**
- *A 2000 sf home takes 3429 gallons.\**

*\* According to the National Fire Protection Association*

## Suppliers – Tank Covers

### **RUDY'S SHADE, INC.**

#### Specializing in:

- greenhouse shade
- truck covers
- custom tarps
- plastics
- catchment covers
- rework

---

Mailing Address: 16-711 Milo Street, Keaau  
P.O. Box 5390 Phone: 808.966.7028  
Hilo, Hawaii 96720 Fax: 808.966.7053

Owners: Rudy and Amparo Castro

### **Akamai Catchment Covers**

P.O. Box 6664, Hilo, HI 96720  
(808) 982-6059

Custom fiberglass covers for tank sizes 12' to 28' diameter.

### **Hawaii Catchment Company**

16-643 Kipimana St. #19, Kea 'au, HI 96749  
(808) 982-8888

We supply pumps. See ad on page 18.

### **Water Works**

741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111

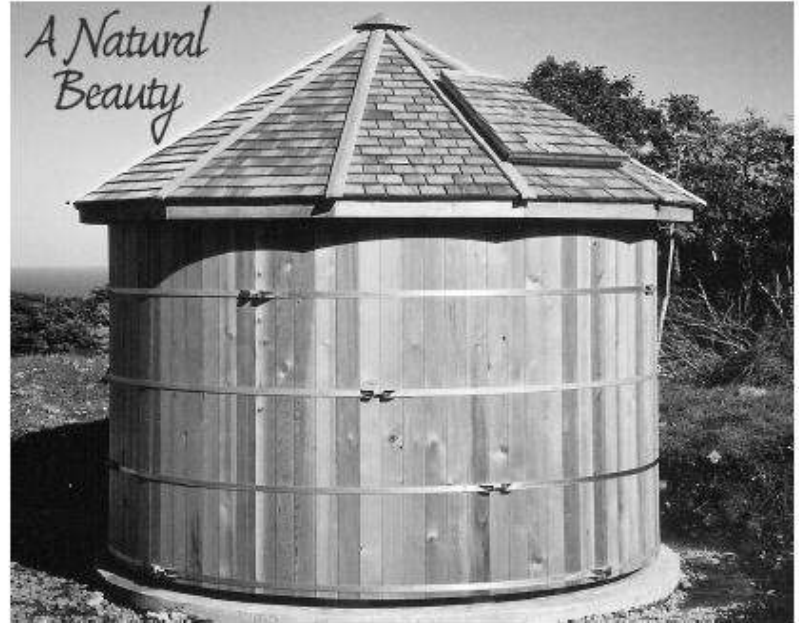
Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)

E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)

## Suppliers - Tanks

### Western Red Cedar Water Cistern

*A Natural  
Beauty*



**Forest Lumber**  
*Cooperage*™

- 3000, 6500, and 9000 gallon sizes.
- 25 mil flexible, potable plastic liner.
- Corrosion proof hoops and hardware.
- Pre-shingled cedar roof panels.
- Traditional stave and hoop construction.

Ph (250) 642-4899 • Fax (250) 642-3466 • [info@forestlumber.com](mailto:info@forestlumber.com)  
2810A Ramsden Rd RR# 2, Sooke BC V0S 1N0 Canada

[www.forestlumber.com](http://www.forestlumber.com)



The FSC logo identifies products which contain wood from well managed forests certified in accordance with the rules of the Forest Stewardship Council.  
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## Suppliers – Tanks (cont)



**BIG ISLAND TANKS INC**

Fleming Tanks Up To 150,000 Gallon Capacity  
Kamaaina - 3 Generations - 160 Years Combined Experience  
*Serving The Hawaiian Islands Since 1968*

AQUACULTURE & AGRICULTURE LINERS • CORRUGATED STEEL TANKS  
VINYL LINERS & COVERS • PUMPS, FILTERS & ACCESSORIES  
FIBERGLASS COVERS AVAILABLE • INSTALLATIONS & REPAIRS

**Statewide Service**  
bigislandtanks@hawaii.rr.com

**BBB**

**323-3555**  
81-991A Keopuka Rd Kealahou 96750

Next time...

consider a half page ad.

## Suppliers – Tanks (cont)

**Big Island Catchment Cleaning**

P.O Box 1401, Pahoa, HI 96778  
(808) 756-3033

We sell tanks. See ad on page 11.

**Hawaii Catchment Company**

16-643 Kipimana St. #19, Kea 'au, HI 96749  
(808) 982-8888

We sell tanks. See ad on page 18.

**Pahoa Battery & Propane**

In the Pahoa Market Place  
(808) 965-9499; fax (808) 965-1973

See ad on page 28.

**Rain Water Catchment Service**

P.O. Box 433, Kea 'au, HI 96749  
(808) 965-6453

See ad on page 10.

**Chem-Tainer of Hawaii**

16-118 Li'i Li'i Street, Kea 'au, HI 96749  
1-800-870-5494.

Catchment tanks.

Web: [www.chemtainerofhawaii.com](http://www.chemtainerofhawaii.com)



## Suppliers – Tanks (cont)

**Island Catchment Company** - Maku 'u & 33<sup>rd</sup> St.  
15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749  
(808) 982-8282  
Web: [www.islandcatchment.com](http://www.islandcatchment.com)  
E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

**Mountain Slope Water**  
180 E. Wakea, Kahului, HI 96732 (Maui)  
(808) 893-0377  
Web: [www.mountainslopedwater.com](http://www.mountainslopedwater.com)

**Orchidland General Store**  
16-125 Orchidland Dr., Kea 'au, HI 96749  
(808) 966-6711

**Pacific Watertank Supply**  
16-175 Melekahiwa, Kea 'au, HI 96749  
(808) 966-5431

**Paradise Pools**  
15-2058 19<sup>th</sup> Ave, Kea 'au, HI 96749  
(808) 982-6701  
  
[www.Paradisepools.citymax.com](http://www.Paradisepools.citymax.com)

## Suppliers – Tanks (cont)

**Pete Jr.'s Services**

RR3 Box 1299, Pahoa, HI 96778  
(808) 982-8835

Complete water catchment services.

**Volcano True Value**

19-3984 Old Volcano Road, Volcano, HI 96785  
(808) 967-7969

**Water Works**

741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111

Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)

E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)

YOUR BUSINESS CARD  
COULD HAVE BEEN HERE !

## Suppliers – Treatment

### **Akamai Pure Water Systems**

**Sales & Service Islandwide 7 Days A Week**

**Low Cost Highest Quality Complete Residential & Commercial Systems**

Whole House Filtration with Ultraviolet Disinfection (UV)  
Under the Sink Systems / Reverse Osmosis  
Filters, Parts, & Supplies  
Customized Separate Component Configurations

Safely Drink Your Catchment Water  
Remove Bad Taste & Chemicals from Any Water Source

UV technology provide a 99.999% bacteria kill rate without chemical agents.

PURA's patented water systems with carbon filtration kill and remove micro-organisms such as E-Coli, Coliform, Viruses, Hepatitis, etc.

Properly configured systems remove cryptosporidium, giardia cysts, leptospirosis, and cleanses the water by eliminating sediments, chlorine, chlorine byproducts, pesticides, herbicides, benzene, and other chemicals.

Let me educate you about filtration and recommend the correct system for your needs. Don't take chances with you and your loved ones' health

Call for a No-Obligation-Quote at your home or business. We will beat any legitimate or advertised written price from any other source or company.

Savings of 20% or more off list price on ALL Systems and Filters

Big Island of Hawaii Original Authorized Dealer of: PURA<sup>®</sup> & Hydrotech<sup>®</sup> Water Purification Systems & Filter Products

(808) 965-9000 (808) 895-7609

Email: [akamaiwater@yahoo.com](mailto:akamaiwater@yahoo.com)

P.O. Box 552, Paho, Hawaii, 96778

**Note:** Any drinking water system of any configuration is not intended to be used for the treatment of water that is microbiologically unsafe or of unknown quality without proper disinfection either before or after the system.

## Suppliers – Treatment (cont)

The background of the advertisement features a stylized, abstract graphic of a sun or light rays in shades of blue, purple, and red, set against a dark background.

**Big Island UV Concepts**  
99.99 % Ultraviolet Water Purifiers  
**TROJAN-UV Distributor for Hawaii**  
Residential/Commercial

P.O. Box 1401  
Pahoa, HI 96778  
Office: 808-965-7411  
Cell: 808-756-3033  
[www.BigislandUVConcepts.com](http://www.BigislandUVConcepts.com)  
E:mail: [BigislandUV@yahoo.com](mailto:BigislandUV@yahoo.com)  
Contact: Stefan & Hallie Larsson

The logo for Safe Water Systems features a stylized sun with rays and a wavy line representing water below it.

**SAFE WATER SYSTEMS**  
*"The Simple Choice for Safe Water"*

Solar Water Pasteurizers use the natural and free heat of the sun to disinfect drinking water.


- \* No electricity, pumps or chemicals
- \* Proven 99.999% effective

A photograph of the SunRay 30 Solar Water Pasteurizer, which is a rectangular, dark-colored device with a grid-like top surface and a handle on the side.

**SunRay 30**  
Solar Water Pasteurizer

**Safe Water Systems, Inc.**  
1600 Kapiolani Blvd., Suite 721  
Honolulu, HI 96814 808-949-3123  
[www.safewatersystems.com](http://www.safewatersystems.com)  
[info@safewatersystems.com](mailto:info@safewatersystems.com)

## Suppliers – Treatment (cont)



**Mountain Slope Water**  
Since 1992

Ian Walker  
Certified Water Technician

Maui: (808) 893-0377  
Maui Fax: (808) 893-0415  
Oahu: (808) 589-1350  
[www.mountainslopewater.com](http://www.mountainslopewater.com)

### **American Water Purification Inc.**

1266 Kamehameha Ave. Hilo, HI 96720  
(808) 935-3930

Web: [www.purewaterhawaii.com](http://www.purewaterhawaii.com)

See ad on page 20.

### **Big Island Tanks, Inc**

81-991A Keopuka Road, Kealahou, HI 96750  
(808) 323-3555

We provide treatment systems.

See ad on page 39.

### **Hawaii Catchment Company**

16-643 Kipimana St. #19, Kea'au, HI 96749  
(808) 982-8888

We well treatment systems. See ad on page 18.

### **Rain Water Catchment Service**

P.O. Box 433, Kea'au, HI 96749  
(808) 965-6453

See ad on page 10.

## Suppliers – Treatment (cont)

### **Pahoa Battery & Propane**

In the Pahoa Market Place

(808) 965-9499; fax (808) 965-1973

See ad on page 28.

### **IDA International**

#### **David Fithian**

(808) 982-8483

Water Purifier System. Ultraviolet light and carbon block filter. NSF certified at standard 53.

### **Island Catchment Company - Maku 'u & 33<sup>rd</sup> St.**

15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749

(808) 982-8282

Web: [www.islandcatchment.com](http://www.islandcatchment.com)

E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

### **Orchidland General Store**

16-125 Orchidland Dr., Kea 'au, HI 96749

(808) 966-6711

### **Volcano True Value**

19-3984 Old Volcano Road, Volcano, HI 96785

(808) 967-7969

## Suppliers – Treatment (cont)

### Water Works

741 Kanoelehua, Hilo, HI 96720

(808) 933-9111

Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)

E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)



**Who wrote the line, “Water, water, everywhere, nor any drop to drink.”**

- a) William Shakespeare
- b) Virginia Woolf
- c) Samuel Taylor Coleridge
- d) Gilbert and Sullivan

Answer is on Page 54.

Source: <http://www.pitara.com/activities/quiz/online.asp?qname=Water>

## Testers

Catchment Microbiology – Catchment Systems Consulting

**Bob's Catchment Testing**

Is your catchment water safe?  
*Simple steps to cleaner  
catchment water.*

Bob Betts  
(808) 936-3426  
Island Wide

### **Gregg's Handyman Service**

HCR1 Box 5280, Kea 'au, HI 96749  
(808) 982-9838

See ad on page 21.

### **Pololei Labs - Water Quality Testing Laboratory**

120 Pauahi St., Suite 203, Hilo, HI 96720  
(808) 938-0560

Expertise in rainwater catchment water testing.  
See ad on page 24.

### **Island Catchment Company - Maku 'u & 33<sup>rd</sup> St.**

15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749  
(808) 982-8282

Web: [www.islandcatchment.com](http://www.islandcatchment.com)

E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)



## Testers – (cont)

### Island Inspections

P.O. Box 6566 Hilo, HI 96720

(808) 969-9070

[www.islandinspections.com](http://www.islandinspections.com)

### World Water Crisis !

- 1) The number of people dying from waterborne disease is equal to how many large passenger jets crashing every day?
  - a) 8
  - b) 24
  - c) 46
  - d) 69
- 2) How many people in the world do not have access to clean drinking water?
  - a) 1 in 3
  - b) 1 in 6
  - c) 1 in 10
  - d) 1 in 20
- 3) What proportion of the world's major rivers are seriously polluted or depleted?
  - a) 10%
  - b) 25%
  - c) 50%
  - d) 75%

Answers are on page 54.

Source: <http://news.bbc.co.uk/1/hi/sci/tech/3747588.stm>

## Water Haulers

**WATER HAULING**



**KEA'AU SERVICE  
STATION, INC**

P.O. Box 335  
Kea 'au, HI 96749

(808) 966-9373

**Island Catchment Company** - Maku'u & 33<sup>rd</sup> St.  
15-1934 33<sup>rd</sup> St., Kea 'au, HI 96749  
(808) 982-8282  
Web: [www.islandcatchment.com](http://www.islandcatchment.com)  
E-mail [sales@islandcatchment.com](mailto:sales@islandcatchment.com)

**Paradise Pools**  
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(808) 982-6701  
  
[www.Paradisepools.citymax.com](http://www.Paradisepools.citymax.com)

**Water Works**  
741 Kanoelehua, Hilo, HI 96720  
(808) 933-9111  
Web: [www.waterworkshawaii.com](http://www.waterworkshawaii.com)  
E-mail [info@waterworkshawaii.com](mailto:info@waterworkshawaii.com)

## Answers to Questions:

Page 7: Only about 2.5% of the world's water is fresh water. The rest is salt water. However, most of the fresh water is held in glaciers and polar icecaps or locked in deep aquifers, thus not available for human use. The result is that only about 0.25% of the world's water, mostly in rivers, lakes and shallow aquifers, can be used to meet human needs.

Page 13: At the end of 1999, about one billion people lacked access to a safe drinking water supply, while over 2.4 billion people did not enjoy access to modern sanitation facilities. This constitutes over one third of the world's population.

Page 16: Rice needs about 502 gallons. Rice is the most thirsty grain crop. One kilogram of broiler chicken needs 924 gallons of water, and one kilogram of beef needs a staggering 26,400 gallons of water. The animals themselves drink little of this water – most of it is used to grow their feed.

Page 19: A leaking tap can lose up to 26 gallons per day, which is the equivalent to about eight buckets of water. In a years time that one leaking tap could lose about 9,240 gallons of water.

Page 25: 1) False. Sulfuric acid might be able to dissolve a car, but water isn't known as the "Universal Solvent" for nothing! It can dissolve more substances than any other liquid. This is lucky for us... what if all the sugar in your soft drink ended up as a pile at the bottom of the glass?  
The water you see in rivers, lakes, and the ocean may look clear, but it actually contains many dissolved elements and minerals, and because these elements

are dissolved, they can easily move with water over the surface of the earth.

- 2) False. Actually, distilled water is "purer." Rainwater contains small amounts of dissolved minerals that have been blown into the air by winds. Rainwater contains tiny particles of dust and dissolved gasses, such as carbon dioxide and sulfur dioxide (yep, acid rain). That doesn't mean rainwater isn't very clean -- normally only about 1/100,000th of the weight of rain comes from these substances.

In a way, the distillation process is responsible for rainwater. Distilled water comes from water vapor condensing in a closed container (such as a glass jar). Rain is produced by water vapor evaporating from the earth and condensing in the sky. Both the closed jar and the earth (via its atmosphere) are "closed systems," where water is neither added nor lost.

- 3) False. First, water at boiling temperature (212° F at sea level) is not really the same as boiling water. When water first reaches boiling it has not begun to turn to steam yet. More energy is needed to begin turning the boiling liquid water into gaseous water vapor. The bonds holding water molecules as a liquid are not easily broken. It takes about seven times as much energy to turn boiling water into steam as it does to heat water at room temperature to the boiling point.
- 4) True. The boiling point of water gets lower as you go up in altitude. At beach level, water boils at 212° Fahrenheit. But at 5,000 feet, about where Volcano, HI is located (Volcano's altitude is a little over 4,000 feet), water boils at 202.9° F, and up at 10,000 feet it boils at 193.7° F. This is because as the altitude gets higher, the air pressure (the weight of all that air above you) becomes less. Since there is less pressure

pushing on a pot of water at a higher altitude, it is easier for the water molecules to break their bonds and attraction to each other and, thus, it boils more easily.

- 5) False. When you think of a drop of falling water you probably think it looks tear-shaped. When a drop of water comes out of a faucet, yes, it does have a tear-shape. That is because the back end of the water drop sticks to the water still in the faucet until it can't hold on any more. But, using high-speed cameras, scientists have found that falling raindrops look more like a small hamburger bun! Gravity and surface tension come into play here. As rain falls, the air below the drop pushes up from the bottom, causing the drop to flatten out somewhat. The strong surface tension of water holds the drop together, resulting in a bun shape (minus the sesame seeds).

- Page 34: 1) b. Indra. Indra is the chief of the Vedic Gods, and is also known as the rain God of India. His most prominent weapons are lightning and thunderbolt.
- 2) c. Jupiter. Jupiter is the sky God in Roman mythology. In ancient times Jupiter was worshipped with a particular ritual to send rain in the time of drought.
- 3) a. Zeus. In ancient Greek religion, Zeus was the weather God. He was regarded as the sender of thunder and lightning and rain and winds.
- 4) c. Kāne. The Hawaiian god Kāne is the procreator and the provider of the life giving elements. He is the patron of wai (fresh water) and is often associated with clouds, rain, streams and springs.

Page 47: c) Samuel Taylor Coleridge. British poet Samuel Taylor Coleridge wrote these lines in his epic poem, *The Rime of the Ancient Mariner*. The poem was first published sometime between 1797 and 1798.

Page 49: 1) c - 46 planes. An estimated seven million people die a year from waterborne diseases, including 2.2 million children under five. That means a child under five dies every 14 seconds.

2) b – 1 in 6. An estimated 1.1 billion people do not have access to safe drinking water, nearly two-thirds of whom are in Asia. An estimated 2.6 billion people worldwide lack access to improved sanitation.

3) c – 50%. According to WWF (formerly known as the World Wildlife Fund), there are an estimated 12,000 cubic kilometers of polluted water worldwide, which is more than the total amount contained in the world's 10 largest river basins at any given moment.



## *Hawai'i Rainwater Catchment Systems (HRCS) Association*

### **We need you as a member of HRCS !**

Whether you are a catchment user, home builder, community member, realtor, or government official, if you have any connection with rainwater catchment systems, you should be a part of HRCS Association.

### **What happens when you join HRCS? You will:**

- Support the environment through efficient harvesting and use of a major natural resource: rainwater
- Have an opportunity to attend free educational seminars on building and maintaining better catchment systems based on developments worldwide
- Receive news and updates from a broad professional, government and academic network to help you stay informed
- Help HRCS partner with community volunteers to provide safe and healthy drinking water for the elderly and others who are unable to upgrade or maintain existing systems
- Support an association that is working hard to contribute to better community water quality

**So, don't wait!** Become an HRCS association member now! Go to [www.hrcs.us](http://www.hrcs.us) and click on membership.

**Need Answers? Find them in.....**



## **Guidelines on Rainwater Catchment Systems for Hawaii**

52 pages, color cover. ISBN 1-929325-11-8  
by Patricia S. H. Macomber, Department of Natural  
Resources and Environmental Management,  
College of Tropical Agriculture and Human Resources,  
University of Hawaii at Manoa.

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