

Bottled Water Dilemma

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We thought drinking bottled water was good for us. We've even become water connoisseurs knowing different waters from around the world by taste. [A report on TV news](#) the other night stated that we use enough plastic water bottles in the US that laid end-to-end would stretch around the earth more than 150 times.

I figure my part of that covers maybe a couple hundred yards. I'm determined to cut it down as far as possible. I'll probably still buy a bottle of water with gas when I've forgotten to bring water from home, but I will no longer pull bottle after bottle from the refrigerator. The bottles I buy will be reused and/or recycled.

I've always been able to ignore the fact that it takes so much fuel to ship a bottle of water from downtown to the store. Water is heavy and takes up a lot room. I can't even imagine how much fuel is involved in send a bottle of water from Fiji. Each bottle requires ¼ cup of oil to produce besides the processing and shipping. I like distilled water, so my taste cost even more in terms of fuel use, pollution and green house gases. It's amazing how such small things can add up to so much energy consumption.

Most of us have tap water readily available, but we feel it's not as tasty or healthy as bottled water. The truth is that much of the water we buy is nothing but filtered tap water. A favored observation of water filter salespeople for years has been: *Evian*, is "naïve" spelled backwards. My favorite tasting water comes from the tap in Wichita, KS and is filtered and shipped to the stores by Pepsi Cola. I suspect marketing giants like Pepsi and Coke have influenced our preferences in this area.

Many bottled waters do come from springs or artesian wells. Some of the companies that bottle the water have even brought the cost of bottled water from a dollar a bottle to a dollar a six-pack. It's hard to return to drinking tap water. I hope will be easier than it was for me to accept the idea of buying bottled water when it first became popular. People scoffed at the idea that anyone would pay a buck a bottle for nothing but water.

NYC has some of the best tasting tap water in the world, according to an annual, world wide, rating of urban tap water. This does not make drinking tap water popular with New Yorkers. The NYC water department has had little success with a [media campaign to encourage tap water drinking](#).

We decided it's time to make our own filtered water. We live in the mountains at 9000' altitude. Our well water is very clean and relatively good tasting. At the top of the mountain runoff area, we have few sources of pollution. We have fairly high mineral content that should be easily filtered. Our filtered water should taste at least as good as filtered Wichita water.

There are many kinds of filters available from personal size to whole house filters and conditioners. They use processes as simple as passing water through a filter and as complex as double reverse osmosis. Filter technology has improved in recent years so much that 99.9999% of all viruses can be

filtered even using a personal water bottle size filter.

We chose a whole house filter. Paybacks include: annual savings that could equal several hundred dollars, longer water heater life; less detergent needed for clothes; less shampoo required; decreased damage from mineral deposits to coffee makers, water pipes, faucets, shower heads, toilet valves, aerators and water heater. Additional benefits include: decreasing carbon footprint; decrease landfill use; softer, cleaner feeling skin and hair; better tasting coffee; etc.

In the past getting well-filtered water required expensive and complex systems like double reverse osmosis filtering, activated charcoal filtering and water softeners. Filter technology has improved to the point where even small filters built into sports water bottles are able to filter out 99.9997% of viruses and 99.999% of bacteria. As my research progressed I felt confident that our water would taste like pure, mountain snow melt when filtered.

Quick research found that the top rated filter by various organizations was, [Kenmore Whole House 38440](#), at a cost of less than \$50. This unit comes with no filter cartridge but can use three different filters available at Sears at a cost of \$5-15. The assured supply of filters for future use is another appeal of this unit.

Filters are available for sediment, taste and smell that filter to 25 microns and 5 microns. [Replacement filters](#) are inexpensive and need to be replaced as little as twice a year depending on individual water quality. We chose the 5 micron deluxe cartridge.

After inspecting the exposed water pipes, I found that the only place to mount the filter required a horizontal mounting. I searched the manual to see if this was allowed. I found nothing that indicated that it needed to be mounted in any particular orientation. There was a note about leaving sufficient room to remove the housing to allow filter changes. Assembling the filter, I found that the ends sealed against the housing allow the filtration process to work regardless of orientation.

After installation, I discovered that the filter cartridge couldn't be installed into the housing in any position except vertical. This left me with the choice between altering the pipes, adding several right angles that reduce water pressure, or removing the entire filter assembly to change the filter cartridge. I chose removing the filter assembly. It requires loosening two nuts and sliding the pipe ends out of the compression fittings.

Installation was simple. Extra hardware is needed that is not sold by Sears. I bought this at the local hardware store. I used brass compression fittings on copper pipe. Solder connections are acceptable according to the manual. If you have plastic or galvanized pipe, you would use different connectors.

The place I mounted the filter broke the continuity of the ground for the electrical system. I used two clamps and a short length of #4 copper wire as a jumper. A clamp on the pipe above and below the filter housing with the wire clamped to each allowed the ground to flow to the ground rather than to the plumbing fixtures. It's important to maintain the integrity of electrical system grounding when making

any change to the plumbing if the electrical system is grounded in this manner.

The only tools required for this 10 minute installation were: tube cutter; adjustable wrench; screw driver for grounding clamp and wire; and emery cloth for cleaning the pipe after cutting. Turn off the main water valve then turn on a faucet to relieve pressure before cutting the pipe. Turn off all electricity at the main breaker to avoid accidental shock during the time that the ground for the electrical system is broken.

After wrapping the pipe thread ends of the compression fitting with Teflon tape and screwing them into the filter housing. I measured the distance between shoulders of the compression fittings. This is the ridge inside the fitting that the pipe slides into. If the pipe is cut too short, it cannot be inserted all the way into the fitting. I cut a length from the copper supply pipe that allowed me to slide the ends fully into the compression fittings at each end of the filter housing.

After cleaning the ends of the newly cut pipe with the emery paper, I slid the nuts and compression ferrules onto the pipe then slid the pipe ends fully into the fitting making sure the water flow is in the direction indicated on the filter housing. I tightened the nuts securely and turned the water on. I tightened the nuts until all leaking stopped.

I installed the ground jumper to restore the electrical system grounding. The main electric power switch should be turned off during the time that ground is not functional. If applicable, the ground is broken as soon as the pipe is cut.

At first, there was no difference in the taste, or appearance, of our tap water. It takes time to wash away the taste from the "old" water. After flushing the system with new filtered water, the taste has definitely changed. It tastes more like the popular bottled mountain spring water than mountain snow melt. The slight milky mist is gone and it does seem to feel different in the shower.

I feel that our filtered tap water is an acceptable replacement for bottled water. For convenience, there are a variety of readily available products. Many kinds of water bottles are available. Pitchers, and other containers, to put in the refrigerator are easy to find. Electric hot/cold cups and car size food and drink heater/coolers are available to plug into your car lighter. These cost as little as \$15 and will heat or cool. Even small refrigerators can be had for under \$100.

Some options for filtering water appear below:

Personal Filters

Various filtering bottles are available for campers. These filters clean small amounts of drinking water and can remove almost all bacteria and viruses as well.

Pitcher Filters

Pitchers with built-in filters that can be put in the refrigerator are popular. These filter most things, but not cysts. [Brita](#) is top rated by [Consumersearch.com](#). They eliminate: chlorine; sediment; calcium and

zinc, sources of strange tastes and odors in tap water. They filter certain metals, including: lead; copper; mercury and cadmium.

Faucet Mount Filters

[Pur](#) is best rated here. It reduces: lead; mercury; gasoline; additives; chlorine; pesticides; herbicides; industrial pollutants; and cysts.

Under Sink Filters

[Kenmore Dual Undersink Water Filter 38460](#) was rated the best of it's kind. This unit allows the use of two filters at the same time for specific uses. Sediment and taste/smell filters are available. Specialty filters for things like [chemical contaminants](#) and [lead](#) can be found.

Reverse Osmosis Filters and Distillers

Reverse osmosis is the process of forcing water through a very tight membrane. This removes enough impurities that the resulting water is considered distilled.

The process requires the use of 5 gallons of water to process one gallon of drinking water.

People with immune compromised conditions such as AIDS have chosen water from these processes in the belief that pure water is best. [Some believe that minerals in water promote health and distilled water is unhealthy.](#)

These are some of the low cost, easy to install filters. There are many filters using many filtering processes. Some are more expensive than alternative presented here. Determine what is right for your situation. If you have heavy sediment, using a fine filter will only result in problems.

Filters can be used in series. A sediment filter might be followed by a 25 micron filter, then a 5 micron. A faucet mount, or under sink, filter might be added for further filtering. Remember that each filter must be serviced to keep the system operational. This may be as simple as changing a filter at the proper time.

It is possible to produce great tasting, clean and healthy water from even the worst tap water. It takes a little extra planning to keep cold water available away from home, but the pay off is pretty large if your bottle water habit has been like mine.