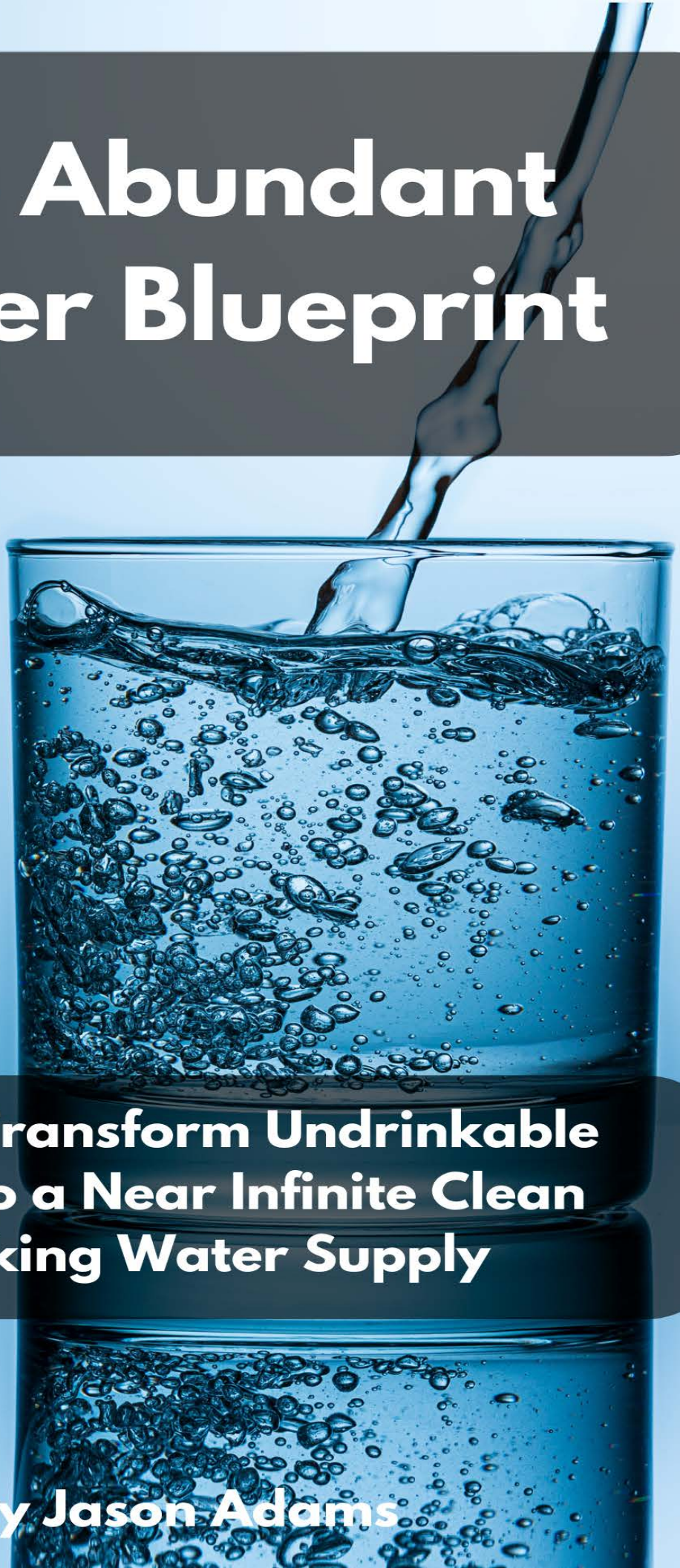
The Abundant Water Blueprint



How to Transform Undrinkable H2O into a Near Infinite Clean Drinking Water Supply

by Jason Adams

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Water is the most precious fluid on Earth. Regardless of what you may have heard or believe, neither gold, oil, wheat, ammunition, nor any other commodities have sparked more wars than water has. Not only is it essential for the growing of all other foods (including meat!), water is immediately essential to every single person on the planet.

Right now, as you read this, there is a countdown occurring in your body—it started when you had your last glass of water, and it will end upon your death, approximately three days later, should you decide not to drink it again.

Most Americans don't see the importance in water, because not many drink it straight; the bulk of water that we consume comes from drinks like soda, coffee, alcohol, milk, and juices. Most people aren't aware of the fact that most foods are comprised of approximately 50% water. Both of these factors combine to diminish the importance of water in our heads, but it is purely illusory—if the supply of our normal food and fluids suddenly stops, *we will all be on the hunt for water*.

How could a scenario like this ever occur? It's quite simple, actually. Most any natural or manmade disaster of sufficient scale will put the water supply at risk. Whether it's earthquakes or dirty bombs, the water supply will more often than not become contaminated—which we will examine in the next section.



CRITICAL ASSUMPTIONS

If there is one critical assumption we can give you, just one life saving piece of information, it is this: *assume all water is contaminated*. If it doesn't come out of your faucet or an unopened bottle, it's automatically contaminated! Yes, that includes that lake, creek, or pristine stream. That includes the water gushing out of that fire hydrant. There are some exceptions; we'll tell you *why* these sources are contaminated shortly, but for now, consider that in a natural or man made disaster that:



- ✔ The water in your home could become contaminated due to failure of the water treatment plant far upstream. This happens even in non disaster times—along the East Coast, "boil alerts" are relatively common. Water becomes contaminated upstream, and residents are told to boil water rather than drink it.

- ✔ Chemical or radiological disasters near water plants almost always contaminate the water.

- ✔ Flash floods can breach levies, cause sewers to overflow, and dump that contaminated water directly into the water supply.

Again, always *assume the water is contaminated and must be treated or filtered!* Wait—you mentioned lakes, creeks and streams. I know of a very rural creek that has the most crystal clear water, located 500 miles from the nearest big city. Certainly, this water is safe to drink, right?

Wrong.

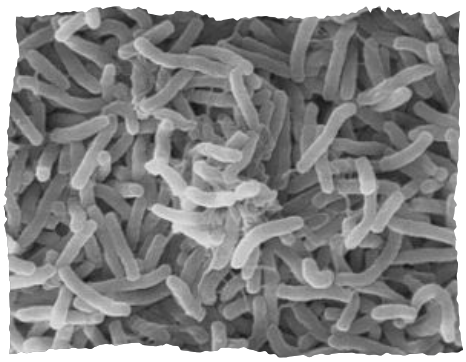
It doesn't matter if there hasn't been a disaster, or whether man has knowingly contaminated the creek in question. It doesn't matter how remote or pristine the creek appears to be. You cannot ever drink surface water from lakes, creeks, streams, or rivers, because guess what—there is a 90% chance it has already been contaminated by an *animal*.



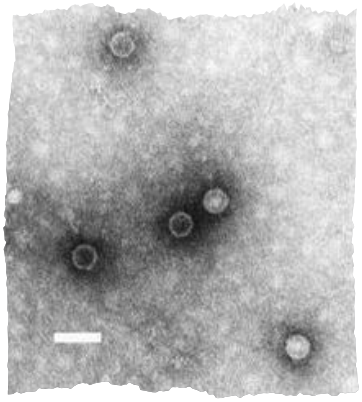
Whoa—major revelation—we know. The fact is, animals are the main reason that even ultra remote surface water is contaminated. Sometimes, they defecate in the water upstream from where you think it's safe to drink. Other times, they die in the water, and their rotting carcasses contaminate everything downstream. Yet other times, they might defecate on land, get some smeared on their paw or hoof, and then cross a creek later, releasing their contaminants into the water. It doesn't take much for water like this to be contaminated!

WHAT EXACTLY IS CONTAMINATING THE WATER?

If you're wondering what "contaminated" means, we're going to let you know. If you think contaminated means the water is filthy, muddy, glowing green—whatever—you're wrong. Crystal clear alpine water can be contaminated to the point where it's not safe to drink, mainly because of the following critters:



- ✔ **Bacteria:** Typically .2 to 5 microns in size, bacteria that are commonly in most surface waters (even when there has been no disaster) are things like E. Coli, Salmonella, and Cholera. Salmonella is a leading precursor to Typhoid fever, while Cholera has a 60% death rate. Even if you survive, these critters can cause cramps, diarrhea, intestinal hemorrhaging, and even encephalitis. Mainly, they are spread through fecal matter.



- ✔ **Viruses:** Typically .2 to .02 microns in size, these little wonders have names like Hepatitis A, Norwalk Virus, Polio, and Rotavirus. And yes, they are already in the water, right now, waiting to infect people. They can produce acute gastroenteritis, liver failure, diarrhea, and of course, death. Mainly, they are spread through fecal matter.

- **Protozoa:** Nasty, living organisms 1-15 microns in size with familiar names like Giardia and Cryptosporidium that typically cause malabsorption, sever dehydration, violent diarrhea, and in some cases, death.



- **Radiation:** In cases like Japan's Fukushima event, where water becomes irradiated, it has all of the above items, plus radiation as an added bonus. Radiation cannot be treated using normal methods and must be removed via special filters.

- **Chemicals:** Chemicals enter the water through accidents, spills, and terrorism. Like radiation, normal treatment methods do not work with chemical contamination. Special filters must be used.



WHAT TO DO DURING A DISASTER

There are some immediate steps you can take during a disaster to preserve some water for yourself, if you don't already have a supply on hand.

First of all, run the bathtub(s) and fill it full. Realize that if a disaster is headed your way, you need some water, right now. Fill those tubs up, as the water will still be clean and safe to drink. What if a disaster has just occurred (such as a storm or earthquake)? Fill the tubs! Even if the water far upstream becomes contaminated, the water just behind your faucet should still be safe to drink. Contaminated water takes time to flow through the city pipes, and you should be okay to use it for the *first few minutes* after a disaster, with the exception of a burst water main right in front of your home, at which point you won't have water pressure anyways.



Here's your checklist for what to do just before and after a disaster:

BEFORE:

- ❒ Filled bathtubs as well as bathroom and kitchen sinks with water
- ❒ Filled clean bowls, buckets, and containers with water
- ❒ Shut off water main to prevent contamination of home water system and further damage

AFTER:

If you somehow did not get a chance to fill your tubs and containers, you need to harvest all the clean water you can that already happens to be within your home, in places such as:



- ❒ Shut off water heater, allowed to cool, and used it as a water source
- ❒ Used water from toilet tanks (NOT bowls!)
- ❒ Found the low point in my home's plumbing, drained the fresh water sitting in the pipes (approximately 4-6 gallons)
- ❒ Melted ice in the freezer or icemaker

Clearly, before you start attempting to treat or filter water, you need to obtain all the clean water you can. It's the easiest, most efficient way to immediately hydrate everyone.

BOIL IT, TREAT IT, FILTER IT

There are three primary methods of rendering contaminated water clean, in very broad strokes; boiling, treating, and filtering. Only one method needs to be used to render most water drinkable. In order of precedence, you should always boil first, if it is available, since it is far and away the easiest method of treating water—if the heat source to boil is available. Here is your checklist:



Boil:

- ❒ Understood that boiling water does not remove chemical or radiological contamination
- ❒ Checked to see if the water was dirty or cloudy
- ❒ If the water was cloudy, poured it into a 2 liter soda bottle. Took an ordinary kitchen rag, stuffed it in the opening of the bottle, then poured the contents through the rag into a pot. May require multiple runs through the bottle.
- ❒ Heated the water until the surface was a rolling boil, allowed to cool, and then poured it in clean containers for consumption.

While boiling is simple and effective it can be done, disasters have a way of affecting the power or gas to run stoves and barbecues. If you have a propane barbecue, you'll be able to boil water as long as you can get propane cylinders. Boiling over an open fire is extremely fuel intensive and inefficient process. In short, if you cannot boil, you should try treating the water.

Treatment of water is your next logical choice. Water can be treated with chemicals such as iodine and chlorine, or it can be treated with ultraviolet light. Treatment works by inactivating the bacterial cysts and killing the protozoa. Since the dead cysts and organisms are still in the water (harmless to you), consider that *treatment does not remove things from the water*, and for this method, *treatment should never be attempted where chemical or radiation contamination is suspected*.

One of the simplest treatment methods available is using ordinary household bleach. Here's your checklist:

Bleach Treatment:



- ❒ Understood that treating water with bleach does not remove chemical or radiological contamination—or cryptosporidium
- ❒ Checked to see if the water was dirty or cloudy
- ❒ If the water was cloudy, poured it into a 2 liter soda bottle. Took an ordinary kitchen rag, stuffed it in the opening of the bottle, then poured the contents through the rag into a pot. May require multiple runs through the bottle.
- ❒ Located some ordinary household bleach
- ❒ Checked to make sure the bleach was of the unscented variety
- ❒ Looked at the label and made sure the bleach contained at least 5.25% sodium hypochlorite
- ❒ Obtained an ordinary eye dropper
- ❒ Poured 4 drops of bleach into the water for every quart, 16 drops for every gallon
- ❒ Stirred the water, and let it sit for 30 minutes
- ❒ After 30 minutes, checked to see if the water smelled faintly of chlorine or bleach.

- ❒ If the water did not smell like chlorine or bleach after 30 minutes, poured another dosage in, let sit for 15 minutes, and checked again for the smell.
- ❒ If the water did not smell like bleach after two treatments, *discarded it*.

Water can also be treated with ultraviolet light, using the SODIS (Solar Disinfection) Method, an ultraviolet treatment method that works by using ultraviolet light from the sun to inactivate cysts and kill harmful bacteria. Again, this method does not treat chemically or radiologically contaminated water.

SODIS Method:

- ❒ Located a good condition, plastic drinking water bottle, not larger than 3 liters
- ❒ Turned it over, and noted that it had the following symbol on the bottom:



- ❒ Located a source of surface water that wasn't too cloudy
- ❒ Filled the bottle with water, then looked through it while holding a newspaper on the other side. Noted that the newspaper could be read, and thus the water was clear enough.
- ❒ Noted whether the sky was overcast or clear.
- ❒ If overcast, placed the bottle outside for at least forty eight (48) hours.
- ❒ If clear, placed the bottle in direct sunlight for at least six (6) hours.

FILTERING WATER

Water filtration is last in our boil it–treat it–filter it pyramid, even though in many cases, it *is the most effective method of water treatment*. If it is so effective, then why is it last? Mainly, because most people *don't have a water filter*. We can't very well hype a method of water filtration based on the fact that the vast majority of most American households do not have a proper water filter. But you aren't like the vast majority of people, or else you would not be reading this guide…

First of all, if you have an under the sink filter like a Culligan or Brita unit, that is not what we are speaking of. The kind of filter we're speaking of is a purpose built filter that has a *ceramic element* that filters bacteria, protozoa, and viruses. Since viruses are extremely small (the smallest among all the things you need to worry about, and therefore the hardest to filter), the filter element must be designed to prohibit them from passing through. There are essentially two types of water filters we recommend:

Pump water filter:

Pump water filters work by hand action. The up stroke sucks water into the filter body; the down stroke pushes it through a specially designed ceramic water filter that strips the water of all contaminants. They are remarkably easy to use and are robust. No prepper family should be without one. They are remarkably portable as well. Here is one that we have selected as an example:

Katadyn Pocket Water Filter

- ✔ Filter life of ceramic element: 13,000 gallons
- ✔ Output: 1 quart per minute
- ✔ Filter weight: 20 oz.
- ✔ Price: $369.99
- ✔ Price of replacement filter: $199.99



This little wonder is an amazing piece of gear that could save your life. Its 13,000 gallon capacity means that it will provide the minimum water supply for a family of four—for *3250 days or close to nine years* without needing a filter replacement!

Gravity type water filter:



Gravity type water filters function just like their pump cousins, except they have no moving parts. Essentially, they allow the water to sit on top of the ceramic element, and flow through it to be filtered. They are quite a bit slower at water production since they use gravity, and most are too large to be portable. So why would you want one then? Their main appeal is the set it and forget it mentality. Pour a bunch of contaminated water in the top, go away for 8 hours, and come back to find fresh water in the bottom of the filter. No pumping, no moving parts to break. Here is one we picked:

Big Berkey Water Filter:

- ✔ Filter life of ceramic element: 6,000 gallons
- ✔ Output: 3.5 gallons per hour with two ceramic elements
- ✔ Price: $258
- ✔ Price of replacement filter: $107.00

TRAIN OFTEN

If you're the kind of prepper who trains often on target practice, reloading, knife sharpening, etc, but has never practiced how to make water safe, now is the time to practice, when there is water in abundance. Our thought is that having a water filter is no substitute for proper training on how to filter water without one, but is nice to have in an emergency. Get your family in on the deal so that they too can know how to purify and filter water. Water training should be like first aid training—it's an *everyone* topic!

Lastly, realize that water in America is already at risk. From our fragile water distribution system to constant droughts in some states, from unsecured water treatment plants that are massive terrorist targets, to a populace that is utterly dependent on them, we are but one small event away from almost total annihilation where it pertains to water. Most people don't have a clue of what to do when bad water is present—many will drink it and die out of desperation—but not you, right? Water is one thing that we really take for granted in America, but it's time to start thinking about this valuable commodity that may one day be extremely scarce.