



A white paper from Bluewater designed to help to stimulate public awareness about creating and sustaining pristine water quality at home and in commercial environments.



FILTER OR PURIFY?

BLUEWATER THOUGHT LEADERSHIP
WATER INTELLIGENCE

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IS OUR TAP WATER AS SAFE TO DRINK AS MOST OF US BELIEVE?

We want to give people a level playing field to make informed choices on the water they consume from their taps at home or at work. Bluewater's white papers are geared to outline the technology options available to householders, business owners and others to help ensure their tap drinking water meets wellbeing and health expectations.

SUMMARY

EXECUTIVE SUMMARY

How safe is our tap water? Would we be better off filtering or purifying the water before consuming it?

At Bluewater we do not believe the water coming out of our kitchen taps is as healthy or safe as it could be. That's why we work hard to create a level playing field for consumers to make an informed choice about the water they consume from their taps at home or work.

The astronomical sales growth of tabletop water filtration pitcher systems and bottled water underlines how uncertain people are nowadays about the quality of the drinking water coming from their taps.

Many consumers understand that in our fast evolving world, traditional public water treatment plants are constantly facing new challenges posed by ever more chemicals and pharmaceuticals ending up in surface water. And they are also aware that once the water leaves the municipal treatment center it still needs to travel through pipes that may well be over 100 years old and in a parlous, leaky state, allowing a large variety of pollutants to contaminate the once cleansed water.

This white paper, based on a Bluewater article published in the Water Quality Products Magazine in early 2015, examines the challenge facing consumers and businesses who want to take the health qualities and safety of drinking water into their own hands by choosing between filtering or purifying their tap water.



Whether drinking water at home or using it in a professional kitchen to prepare fantastic food, Bluewater believes the quality of the water coming from the tap is a basic prerequisite for wellbeing and health.

HOW SAFE IS OUR TAP WATER?

Would we be better off filtering or purifying the water before consuming it?

Consumers wary of drinking tap water are faced with a real dilemma when it comes to choosing between filtering what comes out of their kitchen taps or purifying it. This White Paper, based on an article written by Bluewater for the WQA Magazine in April 2015, seeks to provide jargon-free information to people searching for water looking to ensure their tap water is healthier and safe to drink.

Live better, lose weight, get healthier, save money, improve taste, eliminate contaminants. The array of catchy slogans used by those promoting their water treatment solutions is as endless as it can be confusing to consumers, who face wading through jargon-heavy clutter to learn what treatment option does what, to best protect their water.

Billions of dollars

The amount of hard earned money Americans, Asians and Europeans spend on filter devices, bottled water and purification solutions to allay their fears about contaminants in their tap drinking water is mindboggling, running into the billions of dollars.

In 2013 alone, for example, sales revenues for the U.S. bottled water market reached an astonishing US \$12.3 billion in wholesale dollars, according to the International Bottled Water Association. And a 2014 study by Mintel, a leading market research company, reports total U.S. sales of water filter products, such as the likes of Brita, PUR and Mavea, topped US\$833 million.

According to Mintel, such filter products, which it described as non-essential residential items, encompass pour-through pitchers, faucet mounts, and portable bottles with built-in filters, as well as replacement filters for the products.

Many consumers believe they are making a healthier choice by choosing to filter their tap water using countertop pitchers with replaceable filter cartridges or buy bottled water. Yet, few people question the fact that most pitcher filter solutions do not remove the really nasty stuff like lead, pesticide or pharmaceutical residues, bacteria or viruses. Nor do they query the inflated cost of bottled water, some of which comes from municipal water works anyway.

To achieve a high degree of perceived safety, you need a more serious purification solution than a tabletop, pour-through pitcher, which generally removes only substances – such as chlorine – that can impact the taste and appearance of water. On the other hand, the more hi-tech water 'purification' technologies that are available, such as reverse osmosis, are designed to meet stricter expectations, such as being able to remove impurities including pathogens and a wide range of chemicals.



Innovated with love in Sweden to remove chemical, organic and other pollutants from tap water, the Bluewater Spirit delivers clean water on demand from a sleek design that harnesses second generation reverse osmosis.

WHAT'S BETTER? TO FILTER OR PURIFY YOUR TAP WATER?

Why the fear?

A big question is why any of us living in the developed world should be fearful of what may be in our tap water in the first place. Surely we can rely on the fairly sophisticated, reliable public water systems that successfully serve 'clean' water to millions of people on demand every day?

Although many people object to the taste of the chlorine used to disinfect water that may be microbiologically unsafe to drink, the wider concern is not just about taste. The biggest issue is fear about the health impact of the chemicals being used by public water suppliers as well as about what has gotten into the drinking water during its journey from the municipal works to the tap.

And that fear is not groundless as the Water Quality Association (WQA) itself notes on its website, stating: 'water that leaves the treatment facility can become contaminated by the time it shows up at your tap'.

The WQA view is supported by Consumer Reports that says 'dangerous contaminants such as lead, chloroform, arsenic, nitrate, nitrite, radon, and E.coli bacteria are common in tap water'.

One of the most viewed stories on a Canadian CBC health channel in 2014 explored how excreted drugs from people were contaminating tap water. According to the report, trace evidence of acetaminophen, codeine, antibiotics, hormones and steroids passed through most sewage treatment processes to end up in drinking water.

The World Health Organisation, WHO, has reported that only about one-third of the world's potential fresh water can be used for human needs, due to 'increased pollution from municipal and industrial waste and the leaching of fertilizers and pesticides in agriculture'. In Switzerland, Sweden, Canada, Japan and in other countries renowned for their environmental fervor, rivers, lakes and underground aquifers are being 'poisoned' by an accumulating cocktail of chemicals ranging from fertilizers to hormones and antibiotics.

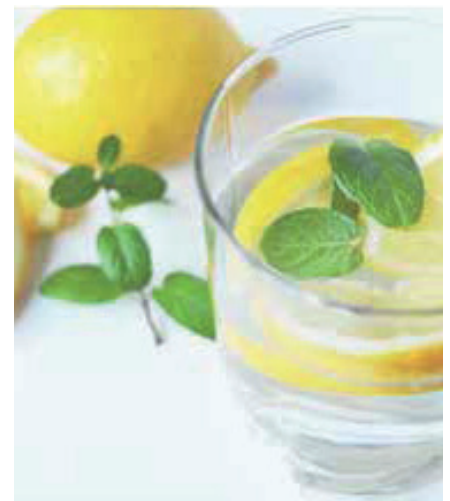
Age matters

Age is another issue. As in just about every western country, the US's drinking water delivery system is growing old fast. As much as 30 percent of pipes in systems delivering water to over 100,000 people are between 40 to 80 years old, according to the EPA. And about 10 percent are even older.

The American Society of Engineers has estimated that seven million gallons of water leak out every day from cracked pipes. And where water can leak out, other stuff can leak in, including toxic industrial and agricultural runoffs. One investigation by Associated Press found trace elements of antibiotics, hormones, mood stabilizers and other drugs in drinking water supplies in 24 major U.S. metropolitan areas.

In 2003, a peer-reviewed study by the environmental action group Natural Resources Defense League (NRDC) of the drinking water systems of 19 U.S. cities concluded that "old-fashioned water treatment – built to filter out particles in the water and kill some parasites and bacteria – generally fails to remove 21st-century contaminants like pesticides, industrial chemicals and arsenic".

With so many contaminants of chemical origin, including pharmaceuticals and personal care products (PPCPs), pesticides, and industrial chemicals, found in tap water, it is not surprising that people turn to filtered and bottled water, despite lack of purification efficiency or high cost.



Water cleansed of chemical and other contaminants tastes fantastic when 'flavored' with natural fruits such as lemon.

WHAT'S BETTER? TO FILTER OR PURIFY YOUR TAP WATER?

Peace of mind

If we believe our tap water is potentially contaminated and pour-through filtration devices don't remove enough of the nasty stuff, what should consumers be considering? As a leader in the water purification industry, Bluewater believes it all boils down to improved consumer education and better understanding about the terminology being used.

There is nothing intrinsically wrong with countertop or faucet water filters, apart from the fact they mostly only deliver water that looks and tastes decent. However, such filters for the most part do not match the efficiency of reverse osmosis (RO) solutions that are designed to remove much of the nasty stuff, including viruses, bacteria, pesticides, fluoride and different drugs and chemicals, to deliver really clean water as and when you want it.

Reverse osmosis technology uses high pressure to push water through an extremely fine filter or membrane. The filter is kept clean by flushing the separated contaminants so they drain away using as little water as possible. RO systems are proven to be cost effective over time and an easy solution to effectively remove most known contaminants. But what of the criticism that reverse osmosis removes everything from water, including beneficial minerals? There are some detractors who claim reverse osmosis water is too pure, removing both contaminants as well as potentially beneficial minerals.

But the amount of minerals in water is pretty negligible and can vary from one source to another. The reality is that most of the calcium and magnesium that people need comes from the food they eat, not their drinking water.

Wasting water

A complaint regularly thrown at reverse osmosis technology is that it wastes water. However, the amount of unpurified water flushed away during the reverse osmosis process of creating clean water is a fraction of what people use to flush their toilets on a daily basis or wash their clothes or dishes.

Bluewater's patented second-generation reverse osmosis SuperiorOsmosis™ technology uses 82% less water than a traditional RO water purifier to flush out contaminants, which is good for environments where fresh water is in short supply. At the end of the day, understanding the difference between water filtration and water purification is the big step towards being able to make an informed choice for a healthier lifestyle, not to mention better tasting coffee or tea.

WHAT CAN CONTAMINATE OUR WATER SUPPLY?

- **Agricultural waste**
- **Animal waste**
- **Pesticides**
- **Municipal solid water**
(containing bacteria, nitrates, viruses, synthetic detergents, pharmaceuticals and household chemicals)
- **Commercial and recreational shipping**
(solvents, gasoline, detergents, raw sewage)

WHAT IS THE BEST HOME TAP WATER SOLUTION FOR YOU?

- Generally speaking, carbon filter absorb organic contaminants in water that impact taste and odor as well as removing chlorination byproducts, some cleaning solvents, pesticides, and metals.
- Ion exchange filters, which need to be regenerated with salt periodically, will help soften water by removing minerals such as calcium and magnesium and may tackle radium, lead and fluoride.
- Reverse osmosis cleans water of a diverse list of contaminants, including nitrates, organic compounds, foul tastes, smells, pesticides, dioxins, toxic metals and petrochemicals.
- Distillation units create distilled water, removing the likes of nitrates, toxic metals and bacteria.

BLUEWATER SUPERIOROSMOSIS™

How reverse osmosis works

Reverse osmosis technology purifies water by forcing water through a semi-permeable filter (or 'membrane' as the filter can also be called). The filter is designed to block chemical, bacteria and virus contaminants. The filter captures everything nasty down to 0.0001 microns (that's around 500,000 times less than the diameter of a human hair). The end result is pure, clean drinking water.

Second generation RO

Bluewater's Spirit and Pro water purifiers use a patented, second generation reverse osmosis technology called SuperiorOsmosis™, which helps ensure a superior clean water delivery rate that encompasses high capacity, efficient filtration and low levels of waste water.

Bluewater's SuperiorOsmosis™ technology, innovated with love in Sweden, turns tap water into healthier drinking water by harnessing patented innovations that can help create contaminant-free water.

HOW YOU BENEFIT FROM BLUEWATER

- Cleaner, healthier drinking water
- No unwanted odors or tastes
- Nicer tasting food, including rice and pasta
- Better tasting beverages (coffee, tea, etc.)
- Minimal maintenance
- Easy installation
- Compact design
- Easy filter changes every six months or so
- Total convenience - pure water at the touch of a finger
- Money saving (less costly than other home water filtration methods or bottled water)





Premium quality tap water

Bluewater harnesses patented technology to deliver enhanced water quality in a world where tap water taste and safety can no longer be taken for granted. We believe everyone has the right to drink water that is as clean as nature intended. That is why our technology is designed to deliver water for residential and commercial drinking, cooking, washing and other purposes that is free of bacteria, toxic metals, pharmaceutical and chemical residues, and the likes of limescale.

www.bluewatergroup.com



The Gold Seal Trademark from the United States Water Quality Association (WQA) helps connect consumers with water treatment products that have been tested and certified to meet industry standards. WQA's Gold Seal Product Certification Program ensures that the product is constructed or formulated from safe materials, the claims listed on the packaging are backed by test data, and the product will hold up under normal usage conditions.



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