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## Challenges in the Water Industry: The Tap Versus Bottled Water Debate

Is tap water gaining ground? Given the growing concern over the manufacturing, purchasing and disposal of bottled water, the bottled beverage of choice may see a decrease in its consumer popularity. Recent pro-tap campaigns are informing consumers about the safe, cost-effective and environmentally-friendly practice of drinking tap water. Politicians, environmentalists and industry leaders nationwide are getting involved in an effort to inform consumers about the benefits of tap. And rather than comparing bottled water to beverages such as beer or soda and emphasizing its health benefits, people are beginning to compare it to the responsible and inexpensive option of drinking clean tap water. As Americans are fortunate enough to have access to quality drinking water, this paper aims to raise awareness of the issue and correct false perceptions about tap and bottled water so that the public can make educated choices.

### BACKGROUND OF BOTTLED WATER INDUSTRY

While bottled water was introduced to the U.S. market in the mid-1970s,<sup>1</sup> it wasn't until the 1990s that bottled water became a feature of the American lifestyle. After serious declines in 2008 and 2009, bottled water sales in the U.S. have bounced back, in a serious way, hitting a new record high in volume in 2011. New figures from the Beverage Marketing Corp. show that bottled water sales were up 4.1 percent in 2010, versus just a 0.9 percent increase in bottled drink sales in general. In 2011, Americans purchased 9.1 billion gallons of bottled water. Per capita consumption reached a new peak of 29.2 gallons.

Effective marketing strategies have contributed to the success of the bottled water industry. With depictions of glaciers, polar bears or mountain springs on the bottles, many consumers have come to consider bottled water as a beverage distinctly different from tap water. Current marketing efforts promote the superior qualities of water, generating the perception that bottled water is a "better" choice. The perceived value of bottled water has been conveyed through product presentation and packaging and supported by an annual \$70 million of advertising.<sup>2</sup> Although the International Bottled Water Association emphasizes that member companies are discouraged from disparaging tap water,<sup>3</sup> public surveys reveal that consumer trust in tap water has been damaged.<sup>4</sup>

### ASSESSING CONSUMER PREFERENCES

<sup>1</sup> Fishman, Charles. "Message in a Bottle." *Fast Company*. July 2007.  
<<http://www.fastcompany.com/magazine/117/features-message-in-a-bottle.html>>.

<sup>2</sup> Blanding, Michael. "The Bottled Water Lie." 26 October 2006. <<http://www.alternet.org/story/43480/>>.

<sup>3</sup> McGinn, Dan. *Newsweek*. "Environment: Bottled-Water Industry Fights Back." 2 August 2007.

<sup>4</sup> "Keeping Cool, Clear Tap Water." *The New York Times* [Editorial]. 18 August 2007.

Consumers are drinking more bottled water than ever before and less tap water than they did ten years ago.<sup>5</sup> Bottled water is chosen for reasons including perceived purity, health benefits, safety and convenience. However, consumer preferences may be grounded on invalid assumptions. According to a survey by the Natural Resources Defense Council (NRDC), 47 percent of bottled water drinkers cited health and safety as a reason for drinking bottled water.<sup>6</sup> Yet there are no credible findings of bottled water having any health or nutritional benefits over tap.<sup>7</sup> After comparing the regulatory standards and considering the sources of bottled water, one should question if paying for the plastic is a smart consumer choice.

Lack of education regarding the regulatory standards of water contributes to the misconception that bottled water is safer. Both tap water utilities and bottled water companies are required to meet regulatory standards, although the industries are governed by separate agencies. Tap water is regulated by the Environmental Protection Agency (EPA), and bottled water is regulated by the Food and Drug Administration (FDA). All drinking water has to meet the same minimum standard,<sup>8</sup> but EPA standards are more rigorous than those the FDA requires. For example, water treatment plants that provide tap water must be tested for contaminants multiple times a day whereas the FDA tests bottling plants only once a week.<sup>9</sup> Additionally, the EPA bans E. Coli and fecal coliform, tests for cryptosporidium and giardia viruses, requires that operators are trained and certified, requires certified labs for testing, and provides consumers with the right to know about contamination. The FDA does not mandate any of the above standards.<sup>10</sup> As such, comparing industry regulations confirms that tap water is certainly as clean, healthy and safe as bottled water.

Ironically enough, an estimated 25-40 percent of U.S. water sold is actually bottled tap water.<sup>11</sup> Consumer advocate groups have since pressured bottled water companies to print the source of water, and Aquafina, owned by PepsiCo, is the first company to adopt this best practice by including the words "Public Water Source" on its label.<sup>12</sup>

A different source contends that consumer preferences for bottles are not so much about perceived purity as it is about convenience.<sup>13</sup> Indeed, 59 percent of Americans will drink tap water from their own faucet,<sup>14</sup> meaning consumers are willing to sacrifice money for the convenience of a portable plastic container when away from home.

### THE REAL COSTS OF BOTTLED WATER

There are significant consequences to choosing bottled water. To start, there is a noticeable disparity in cost between tap and bottled water, as the per-ounce price of bottled water is even higher than that of gasoline.<sup>15</sup> A leading water expert at American Water points out that "many Americans are paying considerably more for water that is available from one's home faucet for less than a penny a gallon."<sup>16</sup> Drinking the

<sup>5</sup> Lazarus, David. "Bottled water comes from many sources." *Scripps News*. 19 January 2007. <<http://www.scrippsnews.com/node/18641>>.

<sup>6</sup> Natural Resources Defense Council. "Bottled Water: Pure Drink or Pure Hype?" March 1999. <<http://www.nrdc.org/water/drinking/bw/bwinx.asp>>.

<sup>7</sup> Standage, Tom. "Bad to the Last Drop." *The New York Times*. 1 August 2005.

<sup>8</sup> Environmental Protection Agency. "Bottled Water Basics." *Water Health Series*. September 2005. <[http://www.epa.gov/safewater/faq/pdfs/fs\\_healthseries\\_bottledwater.pdf](http://www.epa.gov/safewater/faq/pdfs/fs_healthseries_bottledwater.pdf)>.

<sup>9</sup> Pollick, Michael. "Is Bottled Water Bad for the Environment?" 2007. <<http://www.wisageek.com/is-bottled-water-bad-for-the-environment.htm>>.

<sup>10</sup> Natural Resources Defense Council.

<sup>11</sup> Mascha, Michael. "Bottled Water vs. Tap Water in the news." *Fine Waters - The Water Connoisseur*. <[http://www.finewaters.com/Newsletter/June\\_2005/Bottled\\_Water\\_vs.\\_Tap\\_Water\\_in\\_the\\_News.asp](http://www.finewaters.com/Newsletter/June_2005/Bottled_Water_vs._Tap_Water_in_the_News.asp)>.

<sup>12</sup> Goodman, Amy. "The Bottled Water Lie: As Soft Drink Giant Admits Product is Tap Water, New Scrutiny Falls on the Economic and Environmental Costs of a Billion Dollar Industry." *Democracy Now* [Radio Program]. 1 August 2007. <<http://www.democracynow.org/print.pl?sid=07/08/01/1435240>>.

<sup>13</sup> Probe Research Inc. "A Clear Perspective: A National syndicated Study of Americans and their Drinking Water." 2005.

<sup>14</sup> Probe Research Inc.

<sup>15</sup> Arnold, Emily and Janet Larsen. "Bottled Water: Pouring Resources Down the Drain." *Earth Policy Institute*. 2 February 2006. <<http://www.earth-policy.org/Updates/2006/Update51.htm>>.

<sup>16</sup> LeChevallier, Mark. American Water, Water Science and Research Division Chair. Personal Interview. 14 August 2007.

recommended eight glasses of water a day from the tap would only set you back about 49 cents a year, while purchasing the same amount in bottled water could add up to \$1,400 annually.<sup>17</sup> Depending on the brand, bottled water costs 250 to 10,000 times what tap water costs.<sup>18</sup>

What this country spends annually on bottled water really puts the value of tap water into perspective. Today, all customers in the United States pay about \$48 billion a year for tap water. Of that amount, about \$29 billion is used to operate and maintain all of the water systems. In contrast, Americans spend about \$21 billion a year on bottled water. That is, they spend almost as much on bottled water, for an amount of water that would meet less than eight hours of total water demand, as we do on operating and maintaining the systems that meet the other 8,752 hours in a year. Think of what could be accomplished if we put that \$21 billion into repairing and replacing the country's water infrastructure.<sup>19</sup>

In addition to examining spending practices, consumers should consider the resources that go into producing bottles. Each year, 17 million barrels of oil are used to make the plastic water bottles used in the U.S., in addition to the significant amount of fuel used to transport water to consumers.<sup>20</sup> Since tap water is derived from local sources, it can be brought into American homes in a more cost- and energy-efficient manner. The plastic bottle packaging is also of concern to the environment since plastic bottles are a growing source of litter and garbage. Americans throw away 38 billion water bottles a year - over \$1 billion worth of plastic<sup>21</sup> - which could take up to 1,000 years to biodegrade in our landfills.<sup>22</sup> According to the Container Recycling Institute, 85 percent of plastic water bottles end up in the trash, even though they are made of recyclable material.<sup>23</sup> Americans can adopt more environmentally-friendly practices by using a reusable container as a solution for taking tap water on-the-go. The seemingly small decision to drink tap water rather than bottled can have a dramatically beneficial impact. Recognizing the imminent need for change, the June 25, 2007 U.S. Conference of Mayors resolved to further investigate the impact of bottled water on environmental waste.

### PUBLIC INVOLVEMENT

For clear financial and environmental reasons, government officials are favoring tap water and beginning to educate their constituents about its benefits, as well. On July 1, 2007, San Francisco Mayor Gavin Newsom banned the purchasing of bottled water with public funds for city departments, and in doing so will save nearly \$500,000 annually.<sup>24</sup> Santa Fe Mayor David Coss also banned the purchase of bottled water by the city after determining that the environmental costs of bottled water were not worth the convenience, as the city landfill was filling up at twice the rate originally projected and plastic water bottles were part of the problem.<sup>25</sup> In June, New York initiated the "Get Your Fill" campaign to urge New Yorkers to drink tap water,<sup>26</sup> and cities including Salt Lake City, Minneapolis, Los Angeles, Ann Arbor and others are taking the lead in advocating tap water consumption in hopes that residents will follow suit in changing their drinking habits. Some local officials are concerned that if Americans come to solely depend on bottled water for

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<sup>17</sup> "In Praise of Tap Water." *The New York Times*. 1 August 2007.

<<http://www.nytimes.com/2007/08/01/opinion/01wed2.html?ex=1343620800&en=3fd5112a36375434&ei=5090&partner=rssuserland&emc=rss>>.

<sup>18</sup> Standage, Tom.

<sup>19</sup> Fishman, Charles. "The Big Thirst" pg. 135, 2011.

<sup>20</sup> Pacific Institute. [http://www.pacinst.org/topics/integrity\\_of\\_science/case\\_studies/bottled\\_water\\_factsheet.pdf](http://www.pacinst.org/topics/integrity_of_science/case_studies/bottled_water_factsheet.pdf)

<sup>21</sup> Fishman, Charles.

<sup>22</sup> Arnold, Emily and Janet Larsen.

<sup>23</sup> Gitlitz, Jennifer and Pat Franklin. "Water, Water Everywhere: The growth of non-carbonated beverages in the United States." Container Recycling Institute. February 2007. <<http://container-recycling.org/assets/pdfs/reports/2007-waterwater.pdf>>.

<sup>24</sup> Goodman, Amy.

<sup>25</sup> Tremblay, Tami. "Water bottles on mayor's hit list". *KRQE-TV News 13*. 31 July 2007. <<http://www.krqe.com/Global/story.asp?S=6868281>>.

<sup>26</sup> Elejalde-Ruiz, Alexia. "Bottled Water Awash in Ecological Outcry." *Chicago Tribune*. 10 August 2007. <[www.chicagotribune.com/news/local/chicago/chi-bottledwater10aug10,1,1933042.sory](http://www.chicagotribune.com/news/local/chicago/chi-bottledwater10aug10,1,1933042.sory)>.

drinking, there will be less political support for investing in needed infrastructure upgrades and maintenance for water systems many already take for granted.<sup>27</sup>

In an attempt to increase confidence in and support for public water systems, consumer advocate groups have also developed pro-tap water campaigns and other consumer education initiatives. The “Only Tap Water Delivers” campaign developed by the non-profit organization American Water Works Association helps utilities and public officials communicate the value of tap water service and the need to reinvest in water infrastructure to support access to affordable, reliable water.<sup>28</sup> Industry and environmental groups have also committed themselves to releasing studies and information to discredit invalid information in favor of the bottled water industry in an effort to keep consumers informed.<sup>29</sup> Likewise, citizen groups nationwide have organized to keep water-bottling companies out of their communities, and a growing list of restaurants nationwide are taking a green approach by serving tap water in lieu of bottled.<sup>30</sup>

### CONCLUSION – EDUCATION IS KEY

Appreciating that real change lies with the consumer, Americans are encouraged to save money and save the planet. An additional and equally meaningful goal is to educate Americans about the quality and value of the water in our taps. According to Jack Hoffbuhr, executive director of the American Water Works Association, “compared to other countries, America has one of the best water systems in the world.”<sup>31</sup> However, the country’s general access to affordable and reliable tap water is undervalued, and the water systems often under-funded. While there is a cost to providing high-quality drinking water, investing in our infrastructure is a far more valuable and less costly endeavor than coming to depend on bottle water. With appropriate education and awareness, consumers will be able to make better-informed water consumption decisions and ultimately learn about the value of investing in one’s community by supporting local water systems.

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<sup>27</sup> “Keeping Cool, Clear Tap Water.” *The New York Times*. 18 July 2007. <[http://www.nytimes.com/2007/08/18/opinion/18sat1.html?\\_r=2&th&emc=th&oref=slogin&oref=slogin](http://www.nytimes.com/2007/08/18/opinion/18sat1.html?_r=2&th&emc=th&oref=slogin&oref=slogin)>.

<sup>28</sup> American Water Works Association. “Only Tap Water Delivers.” <<http://www.awwa.org/advocacy/onlytapwater/>>.

<sup>29</sup> Abboud, Nadia. “Bottled Water vs. Tap.” *Water and Wastes Digest*. October 2002.

<sup>30</sup> Williams, Alex. “Water, Water Everywhere, but Guilt by the Bottleful.” *The New York Times*. 12 August 2007. <[http://www.nytimes.com/2007/08/12/fashion/12water.html?\\_r=1&oref=slogin&pagewanted=print](http://www.nytimes.com/2007/08/12/fashion/12water.html?_r=1&oref=slogin&pagewanted=print)>.

<sup>31</sup> Carpenter, Traci E.

