

New Website Provides Essential Drinking Water Information

The United States National Academy of Sciences and the Global Health and Education Foundation, along with more than 125 science, engineering and medical academies around the world have joined forces to provide comprehensive and informative Web resources aimed at providing essential information related to safe global drinking water. The website is titled *Safe Drinking Water is Essential* and can be found at www.drinking-water.org. It promises to provide an excellent resource for drinking water treatment and safety

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professionals and even has a *Technologies Decision Tool* to aid in the identification of treatment options for specific drinking water source contaminants.

Launching a valuable resource

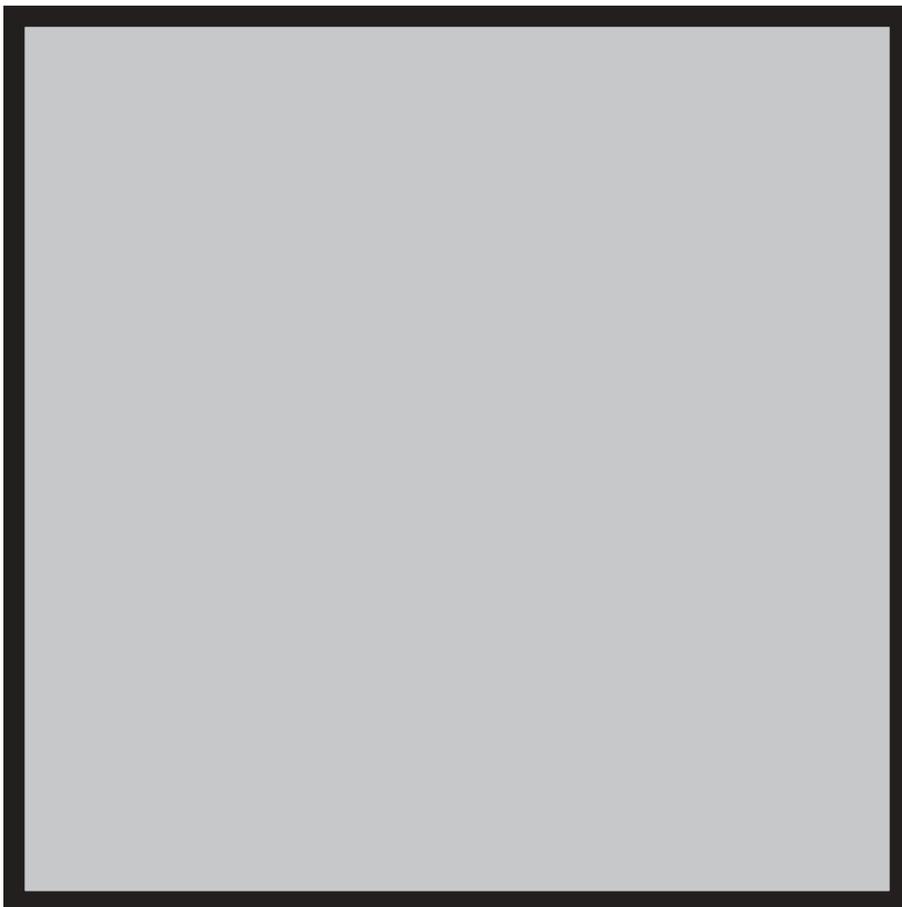
Funded by Kenneth E. Behring, founder of the Global Health and Education Foundation, whose mission, in

part, is to, "advance the health and well-being of the world by improving access to clean water, public health and primary care, basic education and economic development opportunities," the site's credentials are also strengthened by the involvement of the National Academy of Science and other National Academies. NAS was founded in 1863 and is defined as, "an honorific society of distinguished scholars engaged in scientific and engineering research," and is, "dedicated to furthering science and technology for the general welfare." In other words, while the information posted is easily read and often presented in an entertaining visual format, the data originates from hard science, not fluff.

The site is simple to navigate in any one of five languages (English, Spanish, French, Arabic and Chinese) and presents information in the form of video documentaries as well as short and to-the-point text format listing the primary points of: 1) global water pollution, in the *Overview* section; 2) the Earth's water *Sources*, including type, availability and regenerated hydrologic cycle; 3) *Treatment* technologies, including municipal and point-of-use (POU) processes, natural and introduced contaminants and specific agricultural and industrial impacts; 4) drinking water *Distribution* and cultural differences related to drinking water supply; and finally 5) a worldwide *Atlas* of the current use, access and pollution patterns of global regions.

Water quality needs

Some of the well-documented facts you will find at the website center around the need for better water quality. Although water is a basic human need, the minimum requirement of 20-50 liters of clean water per person/per day for cooking, drinking and personal hygiene is not met for a large portion of the population:



approximately 700 million people in 43 countries live below the water-stress threshold. Sources need to be better managed with regard to use and municipal and POU treatments need to be utilized.

The population of the earth is expected to increase by three billion people in the next 50-75 years, further burdening an already scarce water supply in many regions. The magnitude of additional impacts of contamination, flooding, drought and other climatic events are uncertain. Today alone, 5,000 children will die as a result of diarrhea, a preventable illness given proper treatment and the availability of clean water and sanitation. In the US, waterborne disease rarely results in death; however, estimates of waterborne illness due to microbial contamination alone range from 12 million to 19.5 million per year.^{1,2}

Water pollutants come from agriculture (pesticides, nitrates), industrial processes (cyanide, mercury, lead) or are naturally occurring (arsenic, radon). Centralized treatment is more cost effective provided there is the availability of a quality distribution system for treated water delivery. In the US there is a need for significant investment in installing, upgrading or replacing infrastructure for delivering and storing drinking water at

an estimated 20-year cost of \$208.4 billion.^{3,4} Approximately 26 percent of the distribution pipes in the US are in poor condition.⁵ Leaks and breaks in the distribution system can lead to intrusion of contaminants, post-municipal treatment. This is perhaps the greatest argument for POU treatment in developed countries.

Tools for decision making

Consumers are sometimes confused about harmful water contaminants and aesthetic markers of water quality. In addition, the non-professional often does not have enough information available to them that is scientifically sound yet still easily accessed and understood. The *Safe Drinking Water is Essential* site helps to present pertinent information on water quality-related issues. Especially useful is the clear and concise description and visual aids describing various *Treatment Processes* under the *Treatment* link on the home page. The *Technology Decision Tool* helps to match treatment needs with specific contaminants. If used properly, this tool will help identify what treatment options are available for single contami-

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nants while defaulting to the suggestion of using multiple treatment technologies, in series, for multiple contaminants.

According to site promoters at the NAS, the resource is intended to be the, "first tool of its kind to provide international decision makers with peer-reviewed scientific and technical information about drinking water distribution and treatment options." A public briefing to introduce this valuable web resource was held on Wednesday, September 12, 2007 in Washington, D.C. with simultaneous broadcast via the Internet at www.nationalacademies.org. DVD versions may also be available by request. The briefing stressed the point that the information on the website is intended to make science more available to the global population so that public awareness of these often preventable water quality



conditions can improve. In addition, unlike some websites, the viewer is assured that the content has been peer-reviewed by the scientific community.

Conclusion

For a crash course on drinking water contaminant and treatment concerns in the US and worldwide, take the time to do a self-guided tour of the information provided at www.drinking-water.org. Although the *Safe Drinking Water is Essential* site presents a preponderance of information on global water issues, there are many valuable tools available to POU consumers and manufacturers that explain well the variety of contaminants and treatments available for ensuring a high quality product.

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