

led to intensive study of their potential estrogenic effects on humans and wildlife. Technological improvements now allow field staff to measure the occurrence of pharmaceuticals in surface water and groundwater and to examine their fate in wastewater.

- Improved analytical tools were developed to analyze herbicide and pesticide degradation products, which can exist in the environment at greater concentrations and higher frequencies than their parent compounds.
- Recent discoveries of emerging disinfection byproducts (DBPs) such as nitrosodi-methylamine (NDMA), halonitromethanes, and iodinated DBPs (including iodo-acids) were made in drinking water. NDMA also has been found as a contaminant in groundwater.
- National security issues have spurred advancements in methods for rapid detection of chemical and biological warfare agents.

*The newsletter is available at www.clu-in.org/products/newsletters/mandt/view.cfm?issue=0105.cfm#1, and also lists Web sites containing related information on emergent contaminants. Complete results of the review are available in Richardson, S. D., 2004. *Environmental mass spectrometry: Emerging contaminants and current issues*, Analytical Chemistry, 76(12): 3337-3364.*

\$1 Million Prize for Arsenic Removal Technology

In February, The National Academy of Engineering (NAE) announced the establishment of the Grainger Challenge Prize for Sustainability. This prize will award \$1 million for a practical technology that can treat arsenic contamination of drinking water, particularly in the developing world.

The goal of the prize is to encourage development of a household- or community-scale water treatment system to remove arsenic from contaminated groundwater. The system must have a low life-cycle cost and be robust, reliable, easily maintainable, socially acceptable, and affordable. As a sustainable technology, the system must also be within the

manufacturing capabilities of a developing country and not degrade other water quality characteristics or introduce pathogens.

The Grainger Challenge Prize is administered and managed by the National Academy of Engineering, a private, nonprofit institution that provides technology advice under a congressional charter.

More information about the Grainger Challenge Prize for Sustainability is available at www.graingerchallenge.org. The Grainger Challenge criteria and judging procedures will be posted in June 2005; applications will be due in June 2006.

Sewage Recycling Catching on in California

Communities in California are recycling their sewage and wastewater into fertilizer. In fact, the South Lake Tahoe Public Utility District now recycles 100 percent of both, according to the *Tahoe Daily Tribune*. Sewage is dried into a light cakey material and shipped to Bently Agrowdynamics, where it is blended with carbon, nitrogen, wood chips, and straw to make compost that fertilizes about 5,000 acres of its farmland, reported the paper. The process of converting sewage to compost takes about three months. Wastewater is treated and then shipped out of the basin into a reservoir the utility district owns in Alpine County, where it is used for irrigation, said the *Tribune*.

In Sacramento County, a processing plant recycles about one-third of the wastewater solids from the Sacramento Regional County Sanitation District into sand-like fertilizer pellets, reported the *Sacramento Bee*. Synagro then sells the material under the name of Granulite to golf courses, Florida citrus farmers, and Home Depots, according to the paper; however, the material initially won't be sold locally. The recycling process, said the *Bee*, involves an initial digestion of the biosolids by bacteria; the material then is rolled through a furnace that kills pathogens and germs, making it safe for food crops.

Visit www.tahoe-dailytribune.com and www.sacbee.com.

New Web Site for California Waterways Data

A comprehensive access point for data related to the health of California's waterways has been created at www.baydelta.ca.gov, thanks to a joint effort by four state agencies and the Moss Landing Marine Laboratory (MLML).

The California Resources Agency (CRA) in partnership with the California Environmental Protection Agency (Cal/EPA), the Department of Water Resources (DWR), the State Water Resources Control Board (SWRCB) and MLML have created a central location where waterways data may be retrieved. Previously, this information had been dispersed among various agencies, making data difficult to locate and retrieve. Inconsistent formats also required users to merge the data before analyses could be done.

Working together, the five entities implemented a data management and sharing system that consolidated environmental data into a consistent format in a single location. More than 50 other organizations currently contribute data to the Web site. In addition, the state agencies and MLML are using their combined resources to include information from more groups throughout the state in an ongoing effort to expand data-sharing.

Each of the five entities contributes to the Web site in different ways:

CRA's CERES system (ceres.ca.gov/) oversees the process by cataloging the various environmental monitoring programs throughout the state. Cal/EPA is working with the U.S. EPA to integrate the state's environmental regulatory data. DWR manages data sharing for the network and provides distribution services.

SWRCB created the Surface Water Ambient Monitoring Program (SWAMP) that along with MLML is gathering and combining data on surface water quality. SWAMP has developed standards required for state

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water boards or any group collecting environmental monitoring data. More information on the SWAMP Program is available at www.swrcb.ca.gov/swamp.

This effort will expand the information currently available through the California Data Exchange Center, which makes available data on river flow, snow survey, weather, and Delta water quality and related information at cdec.water.ca.gov.

USGS System Aids Invasive Aquatic Species Control

How many new species have been found in your state in the past six months? Where has the latest sighting of snakeheads occurred? The answers to these and other questions are available from the new USGS Nonindigenous Aquatic Species (NAS) Alert System.

USGS developed the NAS Alert System to track the spread of invasive species nationwide. Users can now report nonindigenous and invasive aquatic species they sight, automatically receive email alerts, or perform searches on aquatic species. The system is flexible, providing two different perspectives—one for users interested in an area, the other for users interested in a species.

Nonindigenous aquatic species are members of a species that enter a body of water outside of their historic native range. An invasive species is a nonindigenous species whose introduction causes, or is likely to cause, harm to the economy, environment, or human health.

Before the alert gets to your inbox, the information is checked against the National Nonindigenous Aquatic Species database that tracks aquatic introductions to make sure it is a new location. After that, NAS database researchers verify the information. An alert is then sent to those who signed up for that taxonomic group and species. If the species is new to the state, the alert is sent to anyone who signed up for that state. Those who signed

up for alerts on a specific species will get alerts to any new movements of the species into a state, county, or drainage.

To sign up for the free service, go to nas.er.usgs.gov/AlertSystem/register.asp. Archives of past alerts are available at nas.er.usgs.gov/AlertSystem and can be queried by state, date, and taxonomic group.

Texas A&M CDT Systems Partner to Study Desalination

Texas A&M University (TAMU), the Texas Agricultural Experiment Station, and the Texas Water Resources Institute (TWRI) have signed a five-year partnership with Dallas-based CDT Systems Inc. to develop programs to maximize efficiency in desalination and water treatment technologies. They plan to develop, test, and evaluate desalination technologies, and to disseminate their results to cooperating industries and the scientific community.

TWRI and CDT Systems participated in a study for an alternative cost-effective technology for the desalination of brackish water in 2004. Capacitive Deionization Technology (CDT) was tested with funding provided by the Texas Water Development Board. This study is continuing under the direction of the Global Petroleum Research Institute.

CDT Systems Inc. is the manufacturing, engineering, and marketing licensee for the patented carbon aerogel-based CDT, a \$40 million program developed by the U.S. Department of Energy's Lawrence

Livermore National Laboratory. TAMU will become the Water Test Laboratory for CDT clients' water analysis and CDT Systems' enhanced technology.

With TAMU's support, CDT Systems is finalizing plans to locate its initial manufacturing center in the Bryan/College Station area, where TAMU's main campus is located.

Visit cdtwater.com.

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