

Contributions of Local Public Health Labs in Wisconsin July 2009

Local public health laboratories respond to the unique needs of their communities by promoting healthy lifestyles, protecting the public from environmental hazards, and preventing disease. Here are some examples of how public health laboratories are making a difference in Wisconsin.



Brown County Health Department Contact: John Paul (Paul_JH@co.brown.wi.us)

The Brown County Health Department runs the coastal beach program in their County. Federal funding passed through the WI DNR allows Lake Michigan and Lake Superior coastal communities to test water quality at their beaches on a pre-determined schedule relating to their priority level (determined by beach usage and shoreline length). The health department monitors the following beaches: Bayshore Park Beach, Communiversity Park Beach, and Longtail Beach. Information on water quality at these and other Wisconsin beaches can be found at: www.wibeahces.us.

The Brown County public health lab has also been involved in testing many wells in the "karst" area of our county, i.e. Town of Morrison. Karst is an area of irregular limestone in which erosion has produced fissures, sinkholes, underground streams, and caverns. The "karst" issue, with respect to potable water, is driven by the land formation in sections of Brown County where the topography of the land allows pollutants to quickly gain entrance to the underground water systems thereby increasing the chance for contamination of drinking water wells. A particular area of public health concern is the land application of potentially hazardous materials, such as fertilizers, when the ground is frozen which reduces the natural absorption process.



Eau Claire City-County Health Department

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Recent initiatives by the Eau Claire City-County Health Department include:

1. In coordination with the Eau Claire County Groundwater Advisory Committee, the Environmental Health/Laboratory section designed and distributed a water testing promotional ad that was placed in several area publications. Subsequent to the ad, the committee also worked with the Health Department, UWEC-hydrogeology dept., and the Land Conservation department to provide reduced-priced kits and coupons at the election polls on November 4, 2008. Hydrogeology and Environmental Public Health students volunteered or received service learning/internship credits for participating in the event. The students also developed a poster and pamphlets that were distributed for information. One hundred and nineteen (119) kits and 645 coupons were distributed on Election Day. Data from the project indicate approximately 17% of wells were coliform positive and 7% of wells exceeded the nitrate standard.

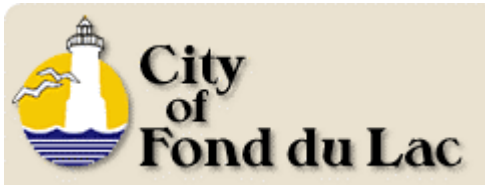
2. Environmental health specialists responded to and provided consultation onsite at the June 22, 2007 WRR Environmental Services fire in Eau Claire, WI. After the fire, a collaborative effort between the health department laboratory, the Department of Natural Resources, Lowes Creek Estates homeowners, and WRR resulted in our chemistry laboratory collecting and analyzing private well drinking water samples for Volatile Organic Compounds (VOCs) to ensure no immediate contamination to the drinking water supply. All water supplies were clear of contamination. The chemistry lab also analyzed collected particle matter from the filter of the PM10 monitor to check for airborne contaminants from the fire.

3. In 2005, the Eau Claire Environmental Health and Laboratory staff worked with the County Parks and Forest Department to assess methods to reduce the high levels of *E. coli* bacteria in beach sand and beach water. The high number of ducks, geese and gulls at the beach caused significant problems resulting in periodic beach closures. Application of lime, along with removal of waterfowl feces, appears to have been successful in improving the beach sand and water quality. Assessment on the value of applying lime to the beach sand to improve beach conditions will continue into the future.

4. In 2008, the Environmental Health/Laboratory section obtained a minigrant for 2008-2009 as provided by The Wisconsin Department of Health and Family Services, Bureau of Environmental and Occupation Health (BEOH) for the testing of blue-green algae in surface water. This issue has come up the past few years regarding McFaul Bay on Lake Altoona. Collaborative meetings were held between Environmental Health, Land Conservation, County Parks and Forest,

and the Department of Natural Resources to determine a plan of action for Lake Altoona water sampling and the design and distribution of public information (media, posters, flyers). Copies of materials were distributed to both the City and County parks departments and preliminary sampling began in 2008 with a project end date in late spring/early summer of 2009.

5. In 2008, the Health Laboratory organized and completed another successful Eau Claire Rabies clinic in cooperation with the Eau Claire County Veterinarians. The clinic was held at Eau Claire Memorial on April 26-27, 2008. The Augusta Rabies clinic was held concurrently on April 26th. There were 47 community members who volunteered to help fill syringes, register animals, and collect payment at the clinics. Other volunteers were also provided from the Eau Claire County Humane Association and the White Pine Animal Rehabilitation Center. A total of 1,457 dogs, cats, and ferrets were vaccinated between the two clinics. Revenue from the vaccinations supports the cost of the clinic with extra revenue being donated to the previously mentioned organizations for their participation. Thank you letters were sent to all cooperating groups from the Health Department.



Fond du Lac County Health Department

Contact: Gloria Smedema (Gloria.Smedema@fdlco.wi.gov)

Following the floods of 2008 the Fond du Lac County Health Department was able to provide free bacteria tests for private wells for a period of two weeks. Press releases helped to make well owners aware of the concerns of flooded wells. This increased awareness led to a significant increase in the amount of samples submitted to the Health Dept Laboratory for analysis during 2009. The health department is also working with several areas of the county to educate residents on the importance of safe drinking water, not only in response to natural disasters. The WI DNR recommends annual safe water tests for all individuals whose primary drinking source is a well.



La Crosse County Health Department

Contact: Jim Steinhoff (steinhoff.jim@co.la-crosse.wi.us)

In 2008, the La Crosse County Health Department Laboratory conducted 65,000 urine drug tests for the Justice Sanctions Department and County Courts. The drug testing program helps individuals deal with their dependency and allows for monitoring their progress. Drug and alcohol addiction is a major public health problem in Wisconsin that needs more solutions than the prison system. We are pleased to play a critical role in this process.



Healthy people and places

Public Health - Madison & Dane County

Contact: Dr. Kirsti Sorsa (KSorsa@publichealthmdc.com)

Located amidst the Yahara chain of lakes, the Madison-Dane County Public Health Department is very engaged in water quality testing, both potable and surface water.

Private Well Testing. Following the merger of the City of Madison and County of Dane Health Departments into Public Health Madison and Dane County (PHMDC), the Health Department has expanded the services in Dane County. We have educated the citizens about the importance of periodic testing of their well water quality. Automated calling system has been used to reach out and encourage the general public in the selected area to collect a sample from their private well and deliver it to a designated location for pick up. Thus far, PHMDC Laboratory has been testing over 700 private wells in 13 communities within Dane County. The well samples were tested for nitrate, coliform, *E. coli* and heterotrophic plate count (HPC). During these efforts, we have increased citizen awareness, provided interpretation of the well testing results and assisted in resolving water quality problems of well owners whose samples were not acceptable for bacteria and/or nitrate.

Recreational Water Quality. Cyanobacteria (blue-green algae) can exert adverse health effects from the cyanotoxins, including liver-, skin- and neurotoxins that some species can produce. Cyanotoxins have sometimes been found at high levels, associated with blooms in Madison and Dane County. The Public Health Madison and Dane County Laboratory monitors proliferation of cyanobacteria blooms at the area beaches to evaluate the occurrence of potential problems and to assess health threats. The program goals are to protect the public, assure water safety for recreational activities and minimize a possibility of adverse impacts from exposure to a toxic bloom. Chemical analysis is required to assess whether a cyanobacteria bloom has produced cyanotoxins. Their laboratory has acquired instrumentation for a sensitive, rapid, near real-time detection of several cyanotoxins and is currently evaluating the feasibility of this type of screening tools to assess bloom situations faster and more reliably to reduce public health risk.



City of Racine Health Department

Contact: Dr. Julie Kinzelman (Julie.kinzelman@cityofracine.org)

Surface water quality testing is hampered in its ability to adequately protect public health. Current culture-based methods or their defined substrate equivalents require a minimum of 18 hours from receipt of sample to reporting of results to coastal beach managers. The EPA, as well as academic researchers, have developed more rapid bacterial indicator methods (enterococci and *E. coli*) based on quantitative, real-time polymerase reaction (QPCR). These methods have the advantage of providing laboratory results within two (*E. coli*) or three (enterococci) hours of sample receipt. Although this is a significant improvement with regard to timeliness, there may be disadvantages, i.e. cost or lack of technical expertise, which could cause resistance to implementing this technology in state or local public health facilities. Another consideration for implementation, specific to the Great Lakes, is the lack of QPCR data for *E. coli*. Current Great Lakes water quality standards are based on an *E. coli* standard and there may be resistance to switching not only testing methodologies but indicator organisms as well, in spite of the fact that recent Great Lakes NEEAR study sites demonstrated a correlation between elevated levels of enterococci and an increase in illness among bathers versus non-bathers. Current studies under way in Racine are an attempt to provide useful information to the EPA and other interested parties regarding the ability of local public health laboratories to implement QPCR for routine surface water quality monitoring and the correlation between *E. coli* concentrations and exposure risk (in the absence of current epidemiological studies at Great Lakes beaches).



Waukesha County Environmental Health Lab

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The Waukesha County Environmental Health Lab is certified for bacteriological and nitrate analysis of drinking water. In 2008, nearly 1,900 samples were submitted for bacteriological analysis. This is an increase of more than 15% from the previous year, perhaps due to the June 2008 floods. Four hundred sixty transient non-community water systems, i.e. restaurants, gas stations, churches, parks, and campgrounds, were sampled for bacteria and nitrates in 2008. The Environmental Health Lab also analyzes surface water quality, at least once weekly, at six Waukesha County owned and operated beaches. This service has also been used by several additional municipally operated beaches in Waukesha County.

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