



STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



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TO: Water Well Drilling Contractors
Pump Installers

FROM: Michael S. Gaber, Chief
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Drinking Water and Environmental Health Section

DATE: April 11, 2007

SUBJECT: **Advisory on Bacteriological Sampling of New & Repaired Water Wells**

The Michigan Water Well Construction and Pump Installation Code (well code), requires that before a new, repaired, or reconditioned water supply system using a water well is placed into service, and after all traces of chlorine have been flushed out, a water sample or samples shall be collected and found to be free of coliform bacteria. The water supply owner is responsible for collecting the water sample(s) or shall arrange for the owner's designated representative to collect the sample. Well drilling contractors must notify the owner of the owner's responsibility to collect the sample(s).

The goal of the bacteriological water testing provisions in the well code is to reduce exposure to pathogenic (disease-causing) microorganisms from drinking water. Waterborne disease outbreaks on South Bass Island, Ohio (2004), Walkerton, Ontario, Canada (2000), and Washington County, New York (1999), resulted in nine deaths and over 4,000 cases of gastrointestinal illness, with some cases being permanently debilitating. These disease outbreaks along with outbreaks that have occurred in Michigan are vivid reminders of the health risk associated with pathogenic microorganisms.

The Department of Environmental Quality (DEQ), Water Bureau (WB), advises water well contractors to include the collection of bacteriological samples as part of their well installation package. This approach will help ensure compliance with the well code. Information gathered by the DEQ, WB, from local health departments (LHDs) showed that nearly half of newly installed water wells in Michigan in 2005 were not tested for coliform bacteria before being placed into service.

National waterborne disease surveillance programs recognize that reported waterborne illnesses represent only a portion of the actual number of cases. Most persons suffering from the gastrointestinal symptoms commonly associated with waterborne illness do not seek medical care. Therefore, waterborne illnesses are vastly underreported.

The DEQ, WB, has the following concerns:

- Placing new and repaired wells into service without first assuring that the drinking water is free of coliform organisms increases the health risk of the consumer.

- Consumer confidence in water wells is damaged when well owners discover that their water is bacterially contaminated, particularly after they begin using the water system.
- Well owners may incorrectly assume that either the well drilling contractor or the LHD collected the water sample before the system was put into service.
- Water samples collected by well owners can be more prone to sample collection error and false-positive results due to their unfamiliarity with proper sampling techniques.
- Sampling by the well driller or pump installer reduces contractor liability and demonstrates product safety for the consumer.
- Once a water system is placed into service and a new home is occupied, gaining access to the premises to collect a water sample may be difficult.

If a well is intended for potable use, the water shall meet the requirements of R 325.1604(3) of the well code (which defines “potable water”). The absence of coliform bacteria and suitable partial chemical quality demonstrate adherence to the water quality provisions of the well code.

In summary, the DEQ, WB, recommends that Michigan registered water well contractors collect bacteriological samples before placing new, repaired, or reconditioned water supply systems into service, to satisfy the requirements of R 325.1604(3), R 325.1621(2), and R 325.1661 of the well code. Sample results showing the absence of coliform bacteria (after all traces of chlorine have been flushed out) should be given to the LHD and to the well owner along with the water well record. *(Note: In counties where the LHD performs water sampling in conjunction with their well permitting program, water well contractors are advised to follow LHD advice regarding water sample collection).*

Ensuring the safety of ground water is an investment in protecting the future of Michigan’s well drilling industry.

cc: Environmental Health Director, LHDs
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