Water Resources Management in Minnesota

Drinking Water Safety

Management Roles

In Minnesota, the federal government, state agencies, and local units of government have responsibility for regulating drinking water. At the federal level, the Environmental Protection Agency (EPA) is involved by administering the Safe Drinking Water Act. At the state level, the Department of Health (MDH) is the primary agency regulating drinking water. The other agencies involved are the Department of Agriculture (MDA), Pollution Control Agency (PCA), and Board of Water and Soil Resources (BWSR). Local entities are also involved, including counties and municipalities, and Soil and Water Conservation Districts (SWCDs). In Minnesota, regulations are imposed through statutes, rules, ordinances, and permits and state agencies directly regulate activities or delegate regulatory responsibility to local entities.

Federal Government

The Safe Drinking Water Act & Environmental Protection Agency. The Safe Drinking Water Act (SDWA) was passed to regulate the nation's public drinking water supply. The law requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells (does not regulate private wells which serve fewer than 25 individuals). The original law focused primarily on treatment to provide safe drinking water. The 1996 amendments added source water protection, operator training, funding for water system improvements, and public information responsibilities. The SDWA authorizes the EPA to set national health-based standards for drinking water. These National Primary Drinking Water Regulations set enforceable maximum contaminant levels in drinking water, and requirements for water systems to test for contaminants. The EPA, states, and water system suppliers are responsible for making sure standards are met. The most direct oversight of water systems is conducted by state drinking water programs that must adopt standards at least as stringent as the EPA's.

Department of Health. The MDH is the main agency designated to protect drinking water supplies under the SDWA. These responsibilities include:

- testing and inspecting public water supplies
- setting state standards for drinking water supplies
- evaluating health effects of contaminants in drinking water
- providing advice on drinking water treatment devices
- testing bottled water

Drinking Water Standards

To regulate drinking water quality of public water supply systems, the MDH enforces standards set by the EPA and health risk limits set by the MDH. Public water suppliers are responsible for taking some of the required water samples, according to a schedule determined by the MDH. MDH staff collect the remainder of the required samples. Certified laboratories test the water samples for a broad variety of possible contaminants and information is reported to the MDH. Systems are tested on a regular basis for:

- Bacterial contamination
- Pesticides and industrial contaminants
- Nitrate
- Inorganic chemicals and radiological elements
- Disinfection by-products
- Lead and copper

A water supplier must take corrective actions which include notifying its water users of a problem if a contaminant level exceeds standards and implementing corrective actions.

The MDH administers a mandatory certification program for public water supply system operators under M.S. Chapter 115 and Minnesota Rules Chapter 9400. Operators are trained on operating procedures, treatment processes, equipment and maintenance, management, and state law and rules relating to water. Operator certifications are valid for three years and can be renewed at expiration.

Source Protection

In order to protect public drinking water supplies from contamination, the MDH operates Minnesota's Source Water Protection Program under the SDWA. Wellhead Protection and Source Water Assessments are the two primary parts of this program.

Wellhead Protection is a regulation to protect the water quality in public water supply wells (M.S. 103I.101). States are required to have wellhead protection programs under the provisions of the 1986 amendments to the federal Safe Drinking Water Act. The MDH administers the state wellhead protection rule (Minnesota Rules, Chapter 4720.5100-4720.5590) that sets standards to protect wellheads thorough wellhead management plans. Public water suppliers are required to delineate, inventory, and manage an inner wellhead management zone. They must also create a formal wellhead protection plan, which has two parts:

- Delineation of the wellhead protection area and drinking water supply area, and assessment of the vulnerability of the well or well(s) to contamination

- Creation of a wellhead protection plan itself, including goals, objectives, plan of action, evaluation program, and contingency plan

The wellhead protection area is determined by using geologic and hydrologic criteria, such as the physical characteristics of the aquifer and the effects which pumping has on the rate and direction of ground water movement. Through this process a well capture area is designated and a management plan for possible contamination sources is developed and implemented. The MDH assigns staff to assist public water suppliers with preparation and implementation of plans.

Source Water Assessments are reports that provide a description of the water source used by a public system and discuss contamination susceptibility of the source. The 1996 amendments to the federal Safe Drinking Water Act require states to produce source water assessments for all their public water systems, and to make the results available to the public. These assessments include an analysis of the sensitivity of a source water body by studying the:

- physical properties of the geologic setting or landscape within the watershed
- topography, hydrology, geology, vegetation, and the distribution of various soil types within the sub-watersheds

These assessments are completed by public water suppliers in partnership with the MDH and other entities depending on the water source. For example, the City of St. Paul Regional Water Services completed their assessment in partnership with the Ramsey Conservation District, Metropolitan Council, US Geological Survey, Rice Creek Watershed District, Vadnais Lake Water Management Organization, Mississippi River Defense Network, and Rivers Council of Minnesota. Assessments have been completed for all of the approximately 7,000 public water supply systems, ranging from small businesses with their own wells to large city water systems using several sources of water. These reports are updated as new information is added, such as well construction data, to the databases used to generate the assessments, and are posted for public viewing on the MDH's Website.

<u>Well Regulations</u>

About one million people in Minnesota rely on private wells for their water and about three million are served by public water systems which provide ground water from public wells. Under M.S. 103I.101 the MDH regulates and oversees well construction and sealing procedures. The MDH's Well Management Program, through the Minnesota Well Code (M.S. 103I):

- Establishes standards for construction and sealing of wells and borings
- Licenses contractors who construct, repair, and seal wells and borings

- Administers permits and notifications to construct and seal wells and borings
- Inspects the construction of new wells and borings, and the sealing of old wells and borings
- Assures that unused wells are sealed following property transfers
- Maintains records on wells and borings
- Provides information, training, and technical assistance to contractors, other professionals, and the public
- Responds to well and well water quality problems caused by ground water contamination events and natural disasters such as floods

All wells must be installed by contractors licensed by the MDH (all well drilling contractors must be licensed by the state), except that an individual may construct a drive point well for personal use on land owned or leased by that individual, and used for farming or agriculture or for the individual's residence. In either case, the well must be constructed according to the requirements of Minnesota Rules Chapter 4725 which describe the necessary procedures for wells. Retail sellers of drive point wells must provide buyers with notification forms and informational materials including requirements regarding wells, their location, and construction. A notification form and fee must be submitted to the MDH by the well owner or contractor before well drilling begins. The well contractor must have a water sample tested for bacteria and nitrate by a MDH certified laboratory and send results to the well owner. A well boring record that describes well attributes such as depth, depth to ground water, geology, well components, and pump information is sent to the MDH and given to the well owner. Well information is compiled into the County Well Index Online which is developed by the Minnesota Geological Survey and the MDH. The index is a database that contains information such as location, depth, and static water level for existing wells. Mapping of wells onto aerial photos allows users to visually identify well locations.

The MDH also regulates wells by administering M.S. 103I.235 which requires the process of well disclosure during a property transfer. The property seller must provide information about the location and status of all types of wells to the buyer and the MDH. Any unused wells must be put back into use, sealed, or have a maintenance permit (allows an unused well to remain unsealed if it is properly maintained). If one of these steps is not taken at the time of the property transfer, it is the responsibility of the buyer to implement one of these actions.

Department of Agriculture. New wells and existing wells used for irrigation with pesticides or fertilizers (chemigation) are required to be approved by the MDA. Under M.S. 18B.08 and M.S. 18C.205, the MDA requires permits for chemigation and that the system be fitted with effective antisiphon devices or check valves that prevent backflow of pesticides or fertilizers into water supplies during irrigation failure or equipment shutdown.

Pollution Control Agency. The PCA administers the Closed Landfill Program which is a voluntary program to properly close, monitor, and maintain closed municipal sanitary landfills. PCA staff develop land management plans that are required under M.S. 115B.412 of the Landfill Cleanup Act. Local government's land use designations and zoning ordinances must follow the PCA's land management plans and may restrict new well instillation within the landfill's permitted boundaries. If ground water supplies become contaminated, the PCA under M.S. 103H.251 and M.S. 103H. 275, is responsible for investigating the pollution source and minimizing or preventing the pollution to the extent possible.

Board of Soil and Water Resources. Through the State Cost-Share Program, BWSR grants funds to SWCDs for sealing unused wells.

Local Entities

Counties & Municipalities. The MDH has delegated the responsibility of regulation of water wells, monitoring wells and/or dewatering wells to some local boards of health under M.S. 103.111. Cities or counties that have responsibility for wells within their jurisdictions are the cities of Bloomington and Minneapolis, and the counties of Blue Earth, Dakota, Goodhue, LeSueur, Olmstead, Wabasha, Waseca, and Winona. Municipalities and counties have the same requirements for regulating public water supply systems as the MDH under the SDWA. Municipal drinking water suppliers are required to monitor water supplies for contaminants, prepare and distribute annual reports including information on contaminants detected, possible health effects, and the water source.

Soil and Water Conservation Districts. SWCDs work through the State Cost-Share Program to seal unused wells.