

# WATER SOURCE PROTECTION AND MANAGEMENT

## For Household, Livestock and Farm Use

### Why should you be concerned?

Rural Manitobans get their drinking water from various sources, such as wells, dugouts, cisterns, reservoirs, streams and lakes. If these sources are not developed or maintained properly, water quality could be compromised. To best protect your family's health, all water for domestic or household use should be tested and treated as required.

Fuels, bacteria, pesticides, fertilizer or other contaminants may get into the water and make it unfit for human or farm use. If your water becomes contaminated, it can affect the health of your family and your livestock. It may also affect the quality of the water in nearby lakes, streams, dugouts or other wells.

Many farm activities can create risks to the quality of your farm water supply and the environment. Livestock yards, septic systems, manure storage, fuel storage, and fertilizer or pesticide use can all contaminate your water and affect the use of water by you and your family.

The degree of risk depends on the condition of your water source, and how close it is to any potential source of contamination. If a water well is not properly sealed around the outside of the well casing it is possible for contaminants to enter the well easily. The well location should be upslope and protected from potential sources of contamination. Mounding soil around the well directs surface water and potential contaminants away from the well head. Well pits, unused or abandoned wells, can create an easy pathway for contaminated water to enter the groundwater. Abandoned wells should be properly plugged and sealed by a knowledgeable and experienced contractor. In addition, wells that inter-connect aquifers of differing quality can degrade water quality in the higher quality aquifer. In addition, wells need to be drilled properly to prevent intermixing of water layers and to protect water quality.

Your dugout could be contaminated by a pesticide spill if it receives its water supply from a contaminated source or if you store, mix or load pesticides near it. Handling and storage of hazardous materials on your farmstead also poses a risk to nearby streams and lakes if not sited and operated appropriately.

Regular water testing (nitrate-nitrogen and bacteriological) provides valuable information on the quality and health of your water supply as well as indications of changes and/or problems. Additional chemical tests may be done if one suspects water quality problems. The Livestock Manure and Mortalities Management Regulations 42/98 and 52/04 requires producers with 300 or more animal units of any one species of livestock to annually submit analytical results from samples of the drinking water provided to their livestock for the following parameters:

- Total and fecal coliform bacteria (MF method)
- Conductivity
- Chloride
- Ammonia nitrogen
- Total Kjeldahl nitrogen
- Nitrate-nitrogen

A Water Rights Licence is required in Manitoba if you withdraw more than 5,500 Imperial gal/day (25,000 L/day) from a specific legal land description. A Water Requirement Table is supplied later in this chapter to enable you to determine whether you require a Water Rights License or not.

The exclusion of livestock from dugouts and surface water protects water quality. Dugouts supplied by surface runoff are also affected by surrounding land use. The ability to control water entering a dugout can protect water quality as can grass cover filters. Aeration of dugouts has been used to greatly improve and maintain dugout water quality.

Subsection 36(3) of the *Fisheries Act* states "No person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substances or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water." Some examples of deleterious substances are: fuel, pesticides and livestock feces and urine.

Surface waters such as streams, creeks, lakes and rivers are an important resource. The vegetated land running alongside waterbodies is called a riparian area. Bank vegetation filters out more than 50% of nutrients and pesticides and more than 75% of upland sediment in these areas. Healthy riparian areas decrease stream flow, slow snowmelt and reduce downstream flooding risks. Riparian areas are also key for protecting fish habitat and serve as important wildlife corridors.

It's a lot easier and less expensive to prevent contamination than to clean it up. Contamination can also have legal implications. Remedial treatment of contaminated water, drilling a new well, or getting water from another source are all inconvenient and expensive options.

### What can you do?

1. Test your water regularly. Treat your domestic water as necessary to protect your family's health.
2. Make sure potential contaminants are stored, handled and disposed of in such a way that water sources are protected.
3. Protect your water sources. Ensure your well is properly located and constructed to protect the ground water resource. Well head protection prevents contamination.
4. Seal all abandoned or unused wells as they can be conduits for aquifer contamination.
5. Protect your dugout. Upstream land use, drain condition and management can affect dugout water quality.
6. Keep livestock out of dugouts, spring areas, streams, lakes and rivers. Use alternate off site watering systems.
7. Know and understand the legislation that pertains to water use and management.
8. Use this worksheet to assess how you protect and manage your water sources.
9. Contact your local GO Office for additional information and support, or other appropriate agricultural extension specialist.