

Operational Guideline for Manitoba Water Suppliers

Wellhead Assessment

PURPOSE

A wellhead assessment is a series of actions undertaken to establish the condition of the well, the quality of water produced, its vulnerability to contamination, and what actions are required to ensure the on-going production of safe drinking water.

How is a wellhead assessment conducted?

A wellhead assessment is conducted by completing an on-site inspection of the well and the area surrounding the well and by reviewing historical information related to the well such as the well drillers report and any water quality test results that may be available.

The attached wellhead assessment form has been prepared to assist with the assessment process. In order to assess your water well effectively, every effort should be made to include as much information as you can.

Who is responsible for conducting a wellhead assessment?

The owner of the water well system is ultimately responsible for having a wellhead assessment completed. The assessment can be completed by the owner or an owner may choose to retain the services of qualified and experienced water well professional to undertake the assessment for them.

What does a wellhead assessment accomplish?

A wellhead assessment identifies factors that may be contributing to a water well's vulnerability to contamination. Once identified, actions may be taken to address these factors so that the long-term vulnerability of the well is reduced along with the associated risk to human health.

What information is required?

When a well is drilled, the well driller prepares a well information report (well drillers report or well log). The well information report provides information on the construction details of the well

including the types and depths of soil layers encountered as they drill down to the water bearing zone. Well drillers typically submit their reports to the Manitoba Sustainable Development's Groundwater Management Section. A copy of the report may be requested by calling 1-204-945-6959.

The Wellhead Assessment form includes information gathered during an on-site inspection including; a general description of the condition of the well, pertinent construction details, well head conditions and sources of potential contamination that are near the well. A simple sketch of the location of the water well in relation to property lines, buildings, sewage tanks and/or fields or any other potential sources of contamination indicated on the sketch. A photo of the wellhead itself should also be included.

Water quality information provides an indication of the safety of the well water and how vulnerable the well is to contamination. In addition, it can assist in the selection of water treatment processes that may improve the aesthetic water quality such as the removal of hardness, iron or manganese.

What water quality testing should be done?

The Province of Manitoba has a series of [drinking water fact sheets](#) and videos that provide information on sampling water wells for [bacteria](#), nitrates and trace elements; arsenic, barium, boron, fluoride, and uranium. For private wells, the Office of Drinking Water recommends testing for bacteria at least once per year or when water quality changes (i.e., a change to taste, colour, odour, clarity). The ideal time to collect a sample for bacteria is following a period of significant surface water runoff such as the spring snow melt or a heavy rainfall event. This is when a well is most vulnerable to contamination.

Additional testing recommendations for private well owners include:

- Nitrate every three to five years, or if there is an infant, pregnant woman or woman planning a pregnancy using the well.
- Trace elements every five to ten years if no concerns were previously identified. If any of

the trace elements were previously detected but below maximum acceptable concentrations as defined by Health Canada's Guidelines for Canadian Drinking Water Quality, a sample should be collected every three to five years. If any of the trace elements exceed a maximum acceptable concentration, well owners should consider how they are using this water, and if it will continue to be a source of drinking water, well owners are advised to install treatment to reduce concentrations.

- Common minerals (hardness, iron, manganese, sodium, chloride, etc.) if there are aesthetic concerns with the water such as taste, and staining of plumbing fixtures and laundry, or if the well owner is considering installing a water treatment device.

What should be done if a problem is identified?

It is the owner's responsibility to routinely test, properly operate and maintain, and install water treatment equipment as necessary so that the system provides safe drinking water. If required, the owner may retain a qualified and experienced water well professional to undertake the upgrades for them. The Province of Manitoba has a series of [well water fact sheets](#) that provide information on proper well construction, upgrades and shock chlorination if the well has tested positive for bacteria.

In addition to assisting private water well owners, a wellhead assessment also provides valuable information for provincially regulated drinking water systems.

If you are a **public or semi-public water system owner or operator** undertaking this assessment under the direction of a drinking water officer, and following the assessment the well water requires treatment or disinfection, contact your regional drinking water officer as approval may be required. If works are completed without approval you run the risk of having to remove or modify the installation.

To ensure public health protection related to drinking water, Manitoba introduced legislation for the safe operation of drinking water systems. Regulations, created under [The Drinking Water Safety Act](#), are the [Drinking Water Safety Regulation MR 40/2007](#) and the [Drinking Water Quality Standards Regulation MR 41/2007](#).

Private well owners who have questions about well assessments, testing, treatment, and disinfection, should be directed to the Office of Drinking Water Private Well, Education and Outreach Coordinator at 204-948-1351.

Questions related to well drilling construction, well sealing and maintenance, and obtaining a water well record, should be directed to: 1-204-945-6959.

Office of Drinking Water

Regional [Drinking Water Officers](#) are available for operational and monitoring advice and to provide technical assistance.

After hours please call 204-944-4888

For more information related to Manitoba's drinking water and how it is regulated visit: www.manitoba.ca/drinkingwater