

# UNDERSTANDING THE LAW:

## AN OVERVIEW OF NEW BRUNSWICK'S WELLFIELD PROTECTED AREA DESIGNATION ORDER

### What is Groundwater?

Groundwater begins as precipitation which falls to earth. Once on the ground, the water may flow as runoff into streams, lakes and rivers, evaporate directly into the atmosphere or become absorbed by vegetation. A substantial quantity, however, seeps or permeates down through soil and bedrock and is stored as groundwater. Groundwater tends to concentrate within thick layers of sand and gravel that were deposited by glaciers thousands of years ago, or to gather along rock fractures. Permeable layers of rock or soil that are saturated in groundwater are called **aquifers** and can be drilled to obtain wellwater. Under normal circumstances, aquifers are replenished regularly by natural processes.

### Wellfield Protection is Everyone's Business

New Brunswickers obtain their water from one of two main sources: inland bodies of surface water such as lakes and rivers; or groundwater. A wellfield is one well or a group of wells that together supply a public water system. Both private wells and municipal wellfields obtain their water supplies from groundwater. Consider these facts:

- More than 150,000 New Brunswickers in over fifty municipalities rely on municipal wellfields that are fed by groundwater.
- It costs much more – sometimes two hundred times more – to clean a seriously contaminated municipal wellfield or to find an alternate water supply, than to protect the well properly in the first place.
- Some New Brunswick communities may not even have an alternate water supply if their existing wellfield becomes contaminated.

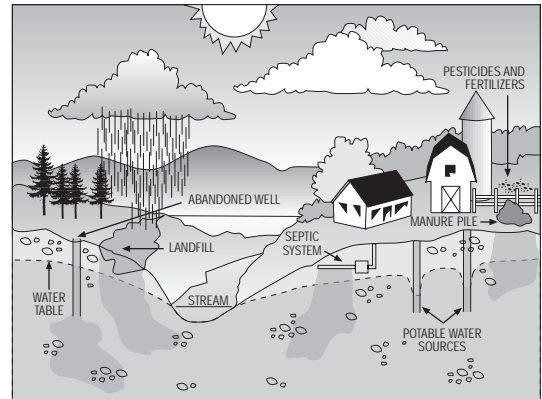
Residential and commercial activities carried out above a well or wellfield can directly influence the quality of drinking water for an entire community. Unfortunately, many land use activities have the potential to contaminate wellfields, most often from chemicals that have been used, discarded, spilled or stored incorrectly.

### How Does Groundwater Become Contaminated?

The area of land that provides water to a wellfield is called the **recharge area**. Contaminants usually enter the aquifer through recharge water from the surface. When harmful bacteria or chemical substances enter the recharge area, the contaminated water can seep into the well and become an issue for those who depend on the wellfield for their drinking water. There are five general groups of contaminants:

- Bacteria and viruses
- Petroleum products and solvents
- Chlorinated solvents
- Pesticides
- Inorganic contaminants including nitrates and salts

#### CONTAMINATION



### How The Wellfield Protected Area Designation Order Works

It makes far more sense to prevent water contamination in the first place, which is why the New Brunswick government developed the Wellfield Protected Area Designation Order. The goal of the Program is the identification and designation of **Protected Areas**, which encompass



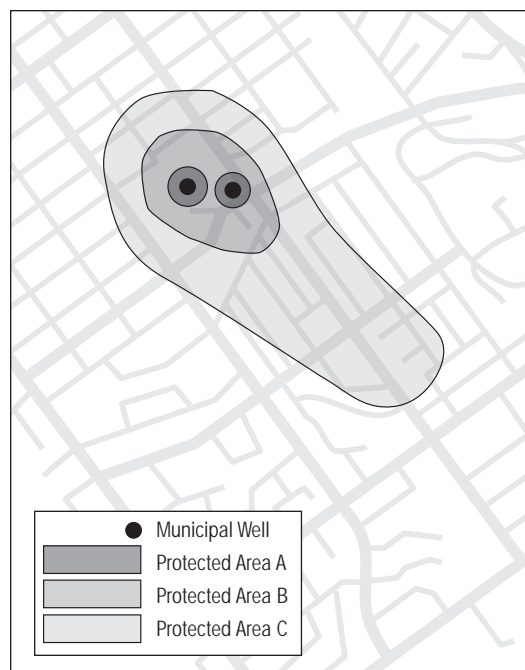
the entire recharge area associated with and surrounding a wellfield. Each Protected Area around a municipal wellfield is divided into three smaller zones: Zone A, Zone B and Zone C. The zones reflect the three most significant types of groundwater contaminants, based on the fact that different contaminants persist in the environment for different time frames, move at different rates and pose different health risks.

**Zone A** lies closest to the wellhead and therefore poses the highest risk of pollution. It consequently has the greatest number of controls on chemical storage and activities that might affect the municipal wellfield. The Designation Order states that septic tanks, sewer lines, petroleum products, chlorinated solvents, pesticides and similar chemicals or activities be controlled or in some cases restricted within this zone. Its outer boundary surrounds the area where the potential for living organisms such as bacteria or viruses exists. Potential bacterial contaminants such as manure or new septic tanks are more restricted in this zone.

**Zone B** lies more distant from the wellhead and surrounds Zone A. The risk of bacterial contamination from land use is greatly reduced in Zone B, but significant pollution risks still persist from petroleum products, chlorinated solvents or other persistent chemicals or activities.

**Zone C** surrounds Zones A and B and is located furthest from the wellhead. Controls on some chemicals or activities are much less stringent in Zone C but still are required for chlorinated solvents, petroleum products, and groundwater extraction.

PROTECTED AREAS



## Common Questions

### *Am I Affected by the Wellfield Protected Area Designation Order?*

To find out whether your home or business is in a Protected Area, and how this will affect you, contact the Department of the Environment and Local Government or the local Service New Brunswick registry office. Your property identification number will assist in this process. This number is located on your New Brunswick Property tax form.

For more detailed information on vegetation control, pesticide use, petroleum and home heating oil storage tanks, fertilizers, livestock, manure storage, construction, and other activities in the three zones, please consult *Understanding the Law: A Guide to the Wellfield Designation Order*, or contact the Water Planning Officer at your nearest DELG office.

### *What if I Cannot Comply with the Wellfield Protected Area Designation Order?*

Undoubtedly, some existing developments or activities inside a Protected Area will not conform with the Designation Order. Your recourse in this case is to request an exemption in writing from the Minister of the Environment and Local Government, available by calling the Sustainable Planning Branch at (506) 457-4846. Once you have filled out and submitted your Exemption Form, the Minister will either grant the exemption with specific conditions or refuse the request. A phase-out period will be provided for common non-conforming activities such as home heating oil tanks in Zone A.

### *How Will the Designation Order be Enforced?*

Most New Brunswickers will voluntarily respect the Wellfield Protected Area Designation Order. The Department of the Environment and Local Government will designate municipal inspectors to complement the work of provincial inspectors to conduct audits and spot inspections. If convicted of Designation Order violations, individual offenders may be fined up to \$50,000 and corporations up to \$1,000,000 for each day that the violation continues.

## For More Information

Ultimately, the Wellfield Protected Area Designation Order is for the benefit and well being of all members of the community. If you would like more information, please feel free to contact:

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N.B. Department of the Environment and Local Government  
P.O. Box 6000  
Fredericton, New Brunswick  
E3B 5H1  
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