

Health risks associated with switching from a public to a private water supply

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HSE cautions commercial and public enterprises about the health risks associated with switching from a public water supply to a private well.

During 2009 and 2010, Environmental Health and Public Health staff from the HSE encountered a number of instances where commercial premises, particularly hotels, had been using water from a private well. This was not known to the Water Services Authorities or to the HSE and was not part of their regular monitoring programme for Small Private Supplies (SPSs). Existing private wells were used to supplement or replace a functioning public water supply. Some of these arrangements were associated with outbreaks of human illness. The HSE did not encounter any instance where a new borehole/well was drilled to replace a public supply but businesses may be contemplating doing this in the future.

If the owner of a commercial or public enterprise including hotels, schools, hospitals, B&Bs and sporting organisations decides to provide drinking water to the public from a private source such as a well, they are legally required to ensure that the water is wholesome. Before considering such a step, the owner of the drinking water supply should have a full understanding of the monitoring and maintenance requirements of a groundwater well and a full appreciation of the potential danger to human health in the event of something going wrong.

It is important to understand the following:

Serious Illness

Drinking water contaminated with microorganisms may cause acute infectious gastroenteritis. Specifically, verotoxin producing E.coli poses an immediate health risk to clients with potential long term consequences for kidney function, especially in young children. Infection with cryptosporidium is a particular threat to people whose immune system is weakened. Serious illness may also occur if contaminated water is used for making ice, preparing food and brushing teeth.

Contamination of wells

Not all wells are deep pristine groundwater supplies. Some may not have been adequately bored, lined or protected from surface water runoff. Some may be underground springs flowing through permeable limestone rock with only a small amount of soil cover. Rainwater can run directly off farmland into these shallow water sources. There is a risk of contamination if wells are built too close to and/or down gradient of septic tanks, farmyards and fields on which slurry is spread. Some deep wells may even be vulnerable to contamination due to seepage of pollutants through permeable layers of rock. Chemical contamination of wells from fertiliser containing nitrate, oil spills and pesticides is also possible.

Monitoring and vigilance

If a commercial or public enterprise provides drinking water from a private source to its clients it becomes a regulated supply and is subject to the 2007 EC drinking water regulations. Water Services Authorities are required to have a monitoring programme in place. Alternatively a supplier can have their water tested privately. It is important to remember that all monitoring is only a snapshot in time: a satisfactory sample result does not guarantee that the well water will not be contaminated a short time later. Any change in clarity, colour or

taste in well water following heavy rainfall is a sure indicator that the supply is vulnerable to surface contamination. A supplier must be constantly vigilant to possible contamination due to weather changes, a change in farming activity, new building works, oil spills etc.

Maintenance of treatment

If a business has on-site treatment facilities such as filtration, ultraviolet light or chlorination these treatment plants should be maintained by an experienced person. The owner is responsible for ensuring this happens. All treatment methods have some limitations and can be overwhelmed if the water source becomes heavily contaminated for example after heavy rainfall.

Siting and construction of a new well/borehole

If a business is considering drilling a new well, siting and construction should be done in such a way as to minimise the potential for contamination with micro-organisms and chemicals. Planning permission is required and prior consultation with the Water Services Authority is strongly advised. The Institute of Geologists of Ireland provide guidance on the siting and construction of wells (www.igi.ie).

Contamination of the public supply

A private well/borehole should not be connected to a distribution network or internal plumbing system in such a way that it can compromise a public supply. If non-return valves are used to separate the two supplies there is still a risk of contamination if the valve fails. Also, if a service provider wishes to collect and use grey water (for flushing toilets, watering gardens etc) great care should be exercised with non-return valves in order to prevent mixing grey water with the drinking water supply.

In summary

1. The HSE cautions commercial and public enterprises about the health risks associated with switching from a public water supply to a private well.
2. If a business or service chooses to supply drinking water from a private well it has legal obligations to ensure that the water is safe to drink.
3. Serious illness may occur from drinking contaminated water.
4. A private well with any commercial or public function must be monitored regularly.
5. It is advisable that private wells are sited, constructed, and maintained by suitably qualified persons.
6. Monitoring and maintenance is not enough. Private suppliers must be vigilant to any change in conditions that puts the well at risk.
7. A well or grey water system should not be connected to an internal plumbing system in such a way that it can compromise a public drinking water supply.

The Environmental Protection Agency provides guidelines on the EC Drinking Water Regulations for private water suppliers (www.EPA.ie).

Contact Water Services in your local authority about monitoring or establishing a private well with a commercial or public function.

Contact the HSE Environmental Health Service for advice on the use and monitoring of a private water supply in a food business operation.