

Technical Bulletin

Wells Regulation – Well Abandonment - When to Plug & Seal a Test Hole or Dewatering Well

This technical bulletin is one in a series of seventeen ¹ on well issues created for a person who is considering or needs to abandon a test hole ² or dewatering well ³ or who currently owns a test hole or dewatering well. The purpose of this technical bulletin is to:

- summarize the information found in the *Test Holes and Dewatering Wells – Requirements and Best Management Practices* manual published by the Ministry of the Environment, April 2014 (**hereon in referred to as the “Manual”**) regarding when to abandon (plug and seal) a well, and
- present when Regulation 903 (Wells Regulation), as amended, made under the Ontario Water Resources Act requires a test hole or dewatering well to be properly abandoned.

If a test hole or dewatering well needs to be abandoned, it is important for well owners to consult the Wells Regulation for the abandonment requirements. The *Wells Regulation – Well Abandonment: How to Plug and Seal a Well* technical bulletin provides useful information and an overview of the legal requirements.

¹ A list of the seventeen technical bulletins is shown in the Additional Information Sources section near the end of this technical bulletin.

² A “test hole” means a well that, (a) is made to test or to obtain information in respect of ground water or an aquifer, and (b) is not used or intended for use as a source of water for agriculture or human consumption, subsection 1(1) of the Wells Regulation, e-laws: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_900903_e.htm

³ A “dewatering well” means a well that is not used or intended for use as a source of water for agriculture or human consumption and that is made, (a) to lower or control the level of ground water in the area of the well, or (b) to remove materials that may be in the ground water, subsection 1(1) of the Wells Regulation, e-laws: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_900903_e.htm

Problems Associated with Improperly Abandoned Test Holes & Dewatering Wells

Improperly abandoned wells may pose many problems including any or all of the following:

- They can act as a pathway for the movement of near-surface contaminants into aquifers (groundwater supplies).
- They can compromise the monitoring results of nearby test holes.
- They can pose a threat to children, adults or animals that may fall into large diameter openings and become trapped or injured.
- They can interconnect fresh groundwater with salty, mineralized or contaminated groundwater zones and allow the mineralized or contaminated water to enter into fresh water zones.
- They can present a hazard to equipment and vehicles.
- They can flow uncontrollably at the surface resulting in groundwater waste, nuisance or flooding problems.

Examples of improperly abandoned wells include:

- wells left unused,
- wells that are not maintained,
- forgotten wells, and
- wells that were plugged and sealed using sub-standard methods or materials.

To reduce the risk of improperly abandoned test holes and dewatering wells, the Wells Regulation contains requirements as to when and how to abandon a well. By eliminating both the physical hazards and contamination pathways, well owners are protecting the water quality of existing and future wells and the shared groundwater resources. By properly maintaining wells and ensuring that unused wells are properly abandoned, well owners are reducing potential financial liabilities while making a wise investment in the future.

When to Abandon a Test Hole or Dewatering Well

Unfinished Well: the Person Constructing the Well's Responsibility

If construction is completely stopped (i.e., discontinued) before completion of the new test hole or dewatering well's structural stage⁴ and no other person completes the new well, the person constructing the well must immediately abandon the well.

Dry Well: the Well Purchaser's Responsibility

The well purchaser⁵ of a new test hole or dewatering well that is dry must immediately abandon the well unless the owner of the land on which the well is situated agrees in writing to maintain the well for future use as a well.

Other Conditions Requiring Well Abandonment: the Well Owner's Responsibility

The well owner⁶ must immediately abandon a test hole or dewatering well if it:

- is not being used or maintained for future use as a well,
- contains natural gas or other gas (unless measures are taken by the well owner to manage the gas in a way that prevents any potential hazard),
- permits any movement of natural gas, contaminants or other materials between subsurface formations (e.g. aquifers), or between a subsurface formation and the ground surface, and the movement may impair the quality of any waters (unless measures are taken by the well owner that prevent the movement at all times), or

⁴ A well's structural stage is complete on the day on which the well is capable of being used for the purpose for which it was constructed but for, (a) compliance with section 15; (b) the installation of a pump; or (c) any alterations necessary to accommodate pumping, monitoring, sampling, testing or water treatment equipment, subsection 1(3) of the Wells Regulation, e-laws: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_900903_e.htm

⁵ "Well purchaser" means a person who enters into a contract for the construction of a well with a person who is engaged in the business of constructing wells, subsection 1(1) of the Wells Regulation, e-laws: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_900903_e.htm

⁶ "Well owner" means the owner of land upon which a well is situated and includes a tenant or lessee of the land and a well purchaser, subsection 1(1) of the Wells Regulation, e-laws: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_900903_e.htm

- is constructed in contravention of any provision of the Wells Regulation dealing with the location of wells, the methods and materials used in the construction of wells or the standards of well construction, and the steps taken to immediately rectify the situation have failed.

Unlike for water supply wells, the well owner does not have to immediately abandon (or take other required measures for) a test hole or dewatering well if it:

- produces mineralized water, or
- produces water that is not potable.

In most cases, the well purchaser or well owner will retain a licensed well contractor and well technician to abandon the well. For further information, see the *Wells Regulation – Well Abandonment – How to Plug & Seal a Test Hole or Dewatering Well* technical bulletin.

Remedial Measures

If the well owner takes measures to prevent the movement of contaminants or other substances, or takes measures to prevent hazards from a test hole or dewatering well that contains natural gas or other gas, the Wells Regulation requires the well owner to make sure the measures are functional at all times.

Director's Written Consent Not to Abandon a Well:

The well owner is not required to abandon a test hole or dewatering well if the well owner has sought and obtained the written consent of the Director under the Act to allow for the continued use of the well, for the following situations:

- a well contains natural gas or other gas and the well owner has not taken measures to manage the gas to prevent any potential hazard,
- a well permits any movement of natural gas, contaminants or other materials between subsurface formations (e.g. aquifers), or between a subsurface formation and the ground surface, the movement may impair the quality of any waters and the well owner has not taken measures to prevent the movement, or
- the steps taken by the well owner have failed to rectify a situation where a well has been constructed in contravention of any provision of the Wells Regulation dealing with the location of wells, the methods and the materials used in the construction of wells, or standards of well construction.

How a Well Owner Can Seek the Written Consent from the Director

If a well owner wishes to seek the written consent of the Director under the Act, the well owner may contact the Wells Help Desk:

- In writing to Wells Help Desk, Environmental Monitoring and Reporting Branch of the Ministry of the Environment, 125 Resources Road, Toronto, ON M9P 3V6,
- By fax at: 416-235-5960, or
- By e-mail at helpdesk@waterwellontario.ca.

For further information, the well owner can contact the Wells Help Desk by telephone at 1-888-396-9355 (for Ontario residents only).

Information that Is Needed for a Written Consent

The Ministry reviews each case individually and on its own merits. At a minimum, applicants contacting the Ministry for a written consent should provide a written request with the following information:

- The name of the individual(s)/entity that owns the well
- The location of the well
- Whether the well is new or an existing well
- The purpose of the well
- The reason for the exemption (e.g. contravention of the Wells Regulation or test hole or dewatering well allowing the movement of contaminants)
- Historical and current water quality information
- If applicable, justification as to why the well does not need to be immediately abandoned (e.g. the well should be allowed to stay in contravention of the Wells Regulation if temporary measures are in place to eliminate physical hazards and protect the groundwater until a final rectification is implemented)

If there are well design issues or gas issues, a well owner may be required by the Director under the Act to retain a *Professional Engineer* or *Professional Geoscientist* to prepare a scientific report showing the appropriate scientific rationale to support the well owner's application. The well owner would then submit the report, along with the request for written consent, to the Ministry for consideration.

Depending on the case, and as part of the Director's consideration, the Director under the Act may ask other regulators and interested parties to comment on the request. For example, a municipality may wish to comment on test holes located near their municipal well fields.

Well owners and others should be cautioned that obtaining a written consent will not be an automatic process, since the Ministry has to provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, to promote Ontario's long-term environmental, social and economic well being.

The Director under the Act will review the request, supporting information, and other information generated from internal and external parties with an interest in the application.

Based on the information, the Ministry will contact the well owner in writing indicating the Director's decision.

Exempted Wells & Shallow Works

The Wells Regulation exempts certain types of wells, such as a pond or trench, from the Wells Regulation and from the sections on licensing of the Ontario Water Resources Act that pertain to wells ⁷.

A person who constructs, maintains or abandons a shallow works:

- is exempt from the sections on licencing of the Ontario Water Resources Act that pertain to wells, ⁸ and
- need only meet the requirements found in section 1.1 of the Wells Regulation.

Therefore, the activities exemptions and requirements in the Wells Regulation do not apply to exempt wells and shallow works. The shallow works exemption, however, contained in section 1.1 of the Wells Regulation does not apply to a monitoring well that is constructed as part of a phase one or two environmental site assessment for a record of site condition.

⁷ Sections 36 to 50 of the Ontario Water Resources Act, R.S.O. 1990, c. O. 40, e-laws: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o40_e.htm

⁸ Sections 36 to 50 of the Ontario Water Resources Act, R.S.O. 1990, c. O. 40, e-laws: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o40_e.htm

See the *Wells Regulation – Understanding a Well, Test Hole and Dewatering Well* and *Wells Regulation – Shallows Works* technical bulletins for further information.

Water Supply Wells

Certain licensing and construction requirements for water supply wells are different from the requirements for test holes and dewatering wells as defined by the Wells Regulation. For further information on the requirements for water supply wells see the *Water Supply Wells – Requirements and Best Management Practices* Manual, published by the Ministry of the Environment, December 2009 and the Wells Regulation.

Additional Information Sources

The seventeen technical bulletins on test holes and dewatering wells are:

- Wells Regulation – Understanding the Meaning of Well, Test Hole and Dewatering Well
- Wells Regulation – Shallow Works Test Holes & Dewatering Wells
- Wells Regulation – Exempted Activities Performed on Wells, Including Test Holes & Dewatering Wells
- Wells Regulation – Test Hole and Dewatering Well Licensing
- Wells Regulation – Licensing (Class 5) for Individuals who Perform Tests on Wells
- Wells Regulation – Site Considerations & Initial Planning for Test Holes & Dewatering Wells
- Wells Regulation – Constructing New Uncased Test Holes & Dewatering Wells in Operation for No Longer than 30 Days
- Wells Regulation – Constructing New Test Holes & Dewatering Wells in Operation for No Longer than 180 Days
- Wells Regulation – Constructing New Test Holes & Dewatering Wells
- Wells Regulation – Constructing New Multi-level Monitoring Test Holes
- Wells Regulation – Completing the Structure of the New Test Hole or Dewatering Well
- Wells Regulation – Flowing Test Holes & Dewatering Wells
- Wells Regulation – Test Hole & Dewatering Well Maintenance
- Wells Regulation – Well Record, Reporting & Tagging for a Test Hole & Dewatering Well
- Wells Regulation – Test Hole & Dewatering Well Repairs & Alterations
- Wells Regulation – Well Abandonment - When to Plug & Seal a Test Hole or Dewatering Well

- Well Regulation – Well Abandonment - How to Plug & Seal a Test Hole or Dewatering Well

These technical bulletins are available on Ontario.ca.

Further information on test hole or dewatering well abandonment can be found in Chapter 16 of the Manual: *Abandonment: When to Plug & Seal Test Holes & Dewatering Wells* and Chapter 17 of the Manual: *Abandonment: How to Plug & Seal Test Holes & Dewatering Wells*.

A copy of the *Test Holes and Dewatering Wells – Requirements and Best Management Practices* Manual can be obtained on Ontario.ca.

A copy of the Ontario Water Resources Act, Regulation 903 as amended made under the Ontario Water Resources Act (Wells Regulation) and other regulations can be obtained from the e-Laws website at www.e-laws.gov.on.ca.

The publications are also available by calling the Publications Information Centre at 1-800-565-4923 or (416) 325-4000.

For further information about wells, contact the Wells Help Desk at 1-888-396-9355 (Well) or the nearest Ministry of the Environment office listed in the blue pages of the telephone directory.

Notice: This bulletin is being provided for information purposes only and is not intended, nor should it be construed as providing legal advice in any circumstances. The applicable environmental legislation, including the following, should be consulted.

- ***Ontario Water Resources Act, R.S.O. 1990, c. O. 40***
- ***R.R.O. 1990, Regulation 903 (Wells) as amended made under the Ontario Water Resources Act, R.S.O. 1990, c. O. 40***
- ***Ontario Regulation 153/04 as amended made under the Environmental Protection Act, R.S.O. 1990, c. E. 19***

Legislation and regulations change from time to time so it is essential that the most current versions be used.