



# NWO Well Services Ltd

*Honesty, Experience, Quality*

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## Decommissioning & Abandoning Residential Wells

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The following was prepared by Brett MacAskill of NWO Well Services Ltd, for use by Northwestern Ontario well owners, and it is based off of his experience working on wells in the region. It may be applicable to other areas, but you should check with your local experts before you use chlorine in your well.

**After reading this article it is my hope that you will gain a better understanding of:**

- What does decommissioning or abandoning a well mean.
- Why we decommission or abandon wells.
- How we decommission residential wells.
- Alternatives to a decommission.
- Why a homeowner should probably hire a well contractor to decommission a well.

**What does decommissioning or abandoning a well mean.** Decommissioning a well is the process of properly removing an existing well and converting the borehole back to a state that will protect the water table, while abandoning a well is similar except that abandoning a well in Ontario legislation refers to decommissioning an attempted wellbore - that is to say a well that was not finished and used as a well. Ontario law differentiates between decommissioning and abandoning because abandoning an unfinished wellbore, in some cases may require less strict actions (for instance a 10 foot bore that has no water present could quickly and easily be abandoned, without any significant risk to the water table, but a well that is connected to a water table that others use, must be carefully decommissioned in order to avoid harming the water table.

In Ontario, well contractors who decommission or abandon wells must fill out a record detailing every action they took, similar to the well construction record. As a homeowner, it is this piece of paper that you are paying for when you purchase decommissioning services, as it proves that you took the proper steps on your end, to protect the public, thereby removing liability from you and passing it to the well contractor. Even if you have no original well construction record, it is still expected that you, through the well contractor you hire, create and hand in a well decommission record. You do not need a construction record in order to create a decommission record.

**Why we decommission wells.** There are many reasons to decommission a well. A well that is not properly maintained, and that is connected to a shared water table is a direct conduit for surface material to enter the water table. Through overland flooding, poor well construction, failed well structures, or simply forgotten and unmaintained wells, contaminants like: impurities (silt, sand, debris), hydrocarbons (oil, gasoline, diesel), nitrogen and phosphate (fertilizer, rotten vegetation), and pathogens (bacteria, viruses, and protozoa) can find their way down the wellbore and into the shared water table. Old and or compromised wells that cannot be repaired or properly monitored/maintained should

always be decommissioned. The financial liability alone always outweighs any benefit from ignoring an old well or improperly backfilling it.

**How we decommission residential wells.** The decommissioning process is done with the use of bentonite, a form of industrial clay, that is pumped into a well from the bottom up, to ensure that all previously exposed surfaces from the bore are thoroughly covered and saturated with with the bentonite material. The bentonite product is selected and mixed such that once set, any future water that comes into contact with the bentonite will cause the bentonite to absorb the water and further expand- shutting off any new attempt of a water source to erode the seal and enter the water table.

Once we have a column of bentonite to the surface, we will excavate and remove the casing to a depth of at least 6 feet, leaving a cement plug to protect the old bore location. We would then backfill the bore location with local material or suitable fill, and finish the surface in such a way that it will not bowl and collect water above the old well site - this is usually accomplished by mounding and packing the area directly above the now decommissioned well.

We collect the old well tag if it was present, record and gather some data, and send all of that onto the Ontario Ministry of Environment and Climate Change on a record along with the old tag. At this stage we should be done, but if you notice the ground settling into a bowl shape, you should contact us or another well contractor to correct the problem.

**Alternatives to a decommission.** There is only one other means of avoiding a decommission. If your well is un-used, but is of sound structure, you can monitor and maintain that well for future use. We do not mean cap it and forget about it, but rather you will have to regularly inspect the well structure, we suggest once every 5 years for drilled wells and annually for dug wells. A residential camera inspection in a drilled well that has no pump is about 1/3 the cost of decommissioning it, and a dug well inspection is about 1/10 the cost of decommissioning it but should be done annually (as it is much easier for a dug well structure to fail quickly).

**Why a homeowner should probably hire a well contractor to decommission a well.** Hiring a contractor to decommission your old, damaged, or unused well is often the most cost effective approach to dealing with an unwanted well. Wells take a few thousand dollars to decommission properly, our average decommission cost for 2016 was \$1,900.00 for a drilled well, and \$3,100,00 for a dug well. We have seen cases in Ontario where the combined costs and fines to “re-decommission” a well that was improperly decommissioned cost a homeowner \$50,000 - and that case the water table was not significantly damaged. It is easy to damage a water table, and nearly impossible to repair them.

In our experience, the only complaint from homeowners is the cost of a decommission. Homeowners have a difficult time grasping the concept that they must pay for something that will never benefit them, and to those homeowners we would say a decommission is like a lifetime insurance guarantee. Should anything ever happen to the water table because of your now decommissioned well that you hired a licensed contractor to decommission, your position is as liability free as one can get.

We often tell homeowners, that the cost of properly maintaining a well will equal the cost of decommissioning it in 3 years. We have always and will always offer interest free payment plans for well decommissions. There are few reasonable reasons to not decommission a well.

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This document has been prepared by Brett MacAskill, a licensed well technician with NWO Well Services, and posted on NWO Well Services website.

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