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HOW WELL IS YOUR WELL? PART 1

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In this article, different types of wells are described, along with how these wells are meant to perform.

A dug well is the most common older style of well. Original dug wells were excavated by hand. The older wells are lined with brick or cobble stone, so that water can trickle into the cylindrical excavation at different elevations – where ever a saturated layer is present. The advantage of dug wells is that they could be constructed inexpensively with digging tools. Dug wells have a significant amount of storage, so that water is available for peak times of the day. The disadvantage of dug wells is that the abundance of groundwater often depends on seasonal rainfall, so that well water may be limited in the summer and early fall.

Where topography and geology do not allow for a dug well, then a drilled well is the best alternative. Water well drill rigs use several methods to drill through the geological layers that were deposited by the glacier. Modern methods result in a well of steel pipe, usually 15 centimetres in diameter. If a water bearing zone, or aquifer, is encountered in sand or gravel, then the driller will place a stainless steel screen at the bottom of the steel pipe, so that the groundwater can enter thE well, but the sand is held back in the formation. Even with the best installation, there is always a little bit of sand or silt that gets into the well.

Sometimes the driller has to go into the bedrock for a reliable groundwater source. The Amabel Formation lies under the Town, and this bedrock has a reputation as a reliable regional aquifer. In this case, the steel well pipe would be turned into the upper several centimetres of the bedrock to seal off a connection with the loose materials above. The driller will then proceed with the drilling into the bedrock, until a fracture or bedding plane is encountered, that provides sufficient water. When drilling for a well, there is no guarantee of obtaining sufficient potable water, but the odds of a good well in the Town of Erin are very high.

Under the Ontario Water Resources Act, a dug well or a drilled well has to be a minimum of 30 metres and 15 metres, respectively, away from any potential source of contamination. This includes septic systems, manure piles, pesticide storage areas or fuel tanks. The condition of a well should be maintained, so that the lid prevents the entry of insects or foreign materials, and that the ground is sloped away from the well so that run off is directed from the well.

All wells require maintenance. Some wells accumulate mineral scale on the screen, and silt/sand at the bottom. This could impede the entry of water into the well, and a licensed drilling contractor is required to rehabilitate the well. This could be accomplished at the same time as replacement of a pump.

Next month will describe groundwater quality.

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