waterrings

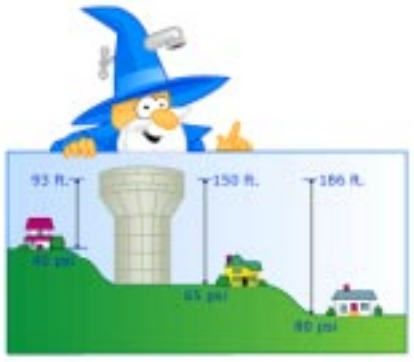
October 2006 Volume 1, No. 3

Understanding Water Pressure

What is water pressure? Pressure is the force that pushes water through pipes. The amount of water pressure in an area determines the flow of water from the tap.

Getting Water to Your Home

The North Wales Water Authority (NWWA) is committed to providing reliable, adequate pressure and water flow for all customers. The NWWA's distribution system is what's known as a gravity-flow system. Gravity is the most efficient way to bring water to your home. Gravity-flow systems also tend to be more reliable during fires or other emergencies that result in power outages because they do not require electrical pumps to operate. Because we operate a gravity-flow system, we are not able to increase or decrease the amount of pressure going to customers' homes.



Factors Affecting Water Pressure

The NWWA service area is divided into five "pressure zones" according to the elevation of the different neighborhoods that make up our service area. All of these pressure zones include one or more treated water storage tanks. Whenever possible, a water storage tank is located higher than the homes it is designed to serve so that the water can flow by gravity. The water pressure at your home will depend on the elevation of your home and your proximity to the water storage tank which serves your home. The closer your home is to the elevation of the storage tank serving you, the lower your pressure will be. Similarly, the lower your home is in relation to the storage tank, the higher your water pressure.

Water pressure can vary at different times of the day. Pressure is normally higher late at night when very little water is being used and most people's taps are closed. In the morning, when everyone is running taps – or on a hot evening when many people are using garden hoses and sprinklers – the pressure in our water mains may be lower.

Many low-pressure problems are created in the home. In such cases, the home has adequate water pressure, but pressure at fixtures drops off when another fixture is turned on. This situation is most commonly encountered when someone flushes a toilet when another person is in the shower. Usually the problem is that the water volume is lowered, therefore reducing the amount of water that comes out of the fixture.

What Is Water Volume?

Water volume or flow refers to the amount of water that a pipe is able to deliver. NWWA water arrives at your home in a 3/4" or 1" service line which can provide a lot of volume and pressure. But, in many homes, internal piping is only 1/2" or less. A 1/2" pipe can only deliver a certain amount of water per minute regardless of water pressure.

Should You Call Us If You Have Low Pressure?

Common causes of low pressure are discussed in detail on page 2 of this newsletter. If you've investigated all these possible causes or you experience a period of prolonged low pressure, please call our Customer Care representatives at 215-699-4836 so that we can investigate.

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This Issue

Common Causes of Low Pressure

If you are experiencing low pressure or volume throughout your entire house, before calling our office check the following:

- Has any plumbing work been done lately? If so, check all your main and shut-off valves to be sure they are wide-open.
- Do you have a pressure-reducing valve (PRV) installed? If so, it may be out of adjustment or need to be replaced.
- Or you home may have a PRV, but not need it.A PRV installed in a low pressure area will greatly restrict volume or flow.
- Is there a water softener in your home? It may be malfunctioning or starting to 'bind-up.' By-pass it to see if flow is restored.
- Do you have a whole house filter? If so, check and/or replace the filter cartridge.

If you experience low pressure at one fixture:

- Has the fixture been repaired or replaced? New fixtures can be more restricted and may make it appear to be flowing slower than older fixtures.
- Check your aerators for debris and clean if necessary.
- If you have low pressure in your shower, the balancing or anti-scald valve may be malfunctioning and restricting flow. Also, some massage-type and hand-held shower heads may restrict and impede flow.

Troubleshooting High Pressure

The symptoms of excessive water pressure in a home include banging pipes, a leaking water heater, a stinging shower spray, and faucets that leak again a few months after washers have been replaced.

If you live in a high pressure area and experience some of these symptoms, you may need a plumber to install a pressure reducer.

If you have a pressure reducer and are experiencing problems, the pressure reducer may need repair. A pressure reducer might not be working properly if:

- You hear a loud or banging noise when fixtures are turned off.
- Water bursts out very strongly when fixtures are first turned on and then returns to normal.

Q: ***Does continual development in this area have an affect on the water pressure in my home?***

A: No.The concerns raised by continued residential and commercial development are related to capacity and optimal flow characteristics of the distribution system and not the pressure. Static water pressure in any area of the system will remain constant regardless of any expansion to the distribution grid.

Sufficient supplies of water must be available to adequately, dependably and safely provide the total requirements of all users under maximum demand conditions while maintaining the highest water quality parameters possible. While we rely on gravity to generate system pressure, many other factors such as storage capabilities, pipe size, valve configurations and flow patterns and velocity must be considered.

Fire demand has the most significant impact on the distribution system. While the total amount of water used for firefighting is small, a fire can put very high demands on the system for short periods of time. The proportional relationship between fire demand and daily potable demand varies greatly, but systems must be designed to efficiently perform under all foreseeable conditions.

Meticulous planning, design and engineering work prior to each individual project ensure that every current or potential customer of the Authority has access to a reliable and abundant source of safe, quality water to satisfy their demands.

Water Rings is published Quarterly to Serve our Customers in:
North Wales Borough and Lower Gwynedd, Montgomery, New Britain, Upper Dublin, Upper Gwynedd, and Whitpain Townships.