

## Access Utilities – Answering our customer`s questions

**Access Utilities (UK) Ltd** was established in 2012, as a solution based consultancy. We provide bespoke services for all aspects of water treatment including, advice, design, installation and maintenance of water treatment systems for our customers Potable and Private Water Supplies. Our team has over 30 years' experience in the water treatment field and we pride ourselves in offering expert advice to our clients and customers. Below, we have answered some of your more common questions about your Private Water Supply.

### Can you help me please; I've just bought a house on a Private Water Supply?

Of course we can help; this is the service we provide. You can call us, send us an email or we will come out to your home or business and discuss any concerns that you may have. Our advice is free and we can provide very competitive consultation reports for you if needed. From the start of your enquiry right through to completion and handover, we will provide the solution to your water problems and then maintain your system for you.

### Why do I need to have my water tested?

Most private water supplies come from boreholes, wells, streams or rivers and although the water from these source supplies may look clean, they often have harmful minerals and bacteria that need to be treated to the required standards. The **Private Water Supply Regulations** outline the maximum levels of contaminants acceptable for water to be considered wholesome and fit to consume or use at your home or business.

### Can I just treat the water at my kitchen tap?

Unfortunately, the answer is NO. For your Private Water Supply to meet with the required legislation, all the water entering your business or home must be treated.

### How much will a water treatment system cost me?

This will depend on the treatment necessary and whether you will need to store water and boost the water pressure as it enters the property. A simple pre-filter and UV unit will cost anywhere from **£500.00 + VAT** and some complex domestic water treatment systems can cost in excess of **£5,000.00 + VAT**. We always recommend that a full site survey is undertaken so that we can accurately provide you with a quotation for the required treatment system and scope of work.

### Where will the water treatment system be installed?

The system will need to be installed in an area protected from the elements, (freezing and rain). In most cases, a power supply will be required and very often, a free flowing drain point is required too. Normally, the systems are installed in an outbuilding or garage. Sometimes they are installed in a purpose built plant rooms or a utility area. In all cases, easy access will be required for when the system is serviced. We do not recommend that systems are installed in loft spaces or indoors where access could cause damage to carpets, furniture or similar.

### How much will it cost to service my system?

This will very much depend on the equipment that you have installed, the quality of the untreated water passing through the equipment and the amount of water you use per day. On average, each person uses approximately 160 litres of water each day, therefore an average family will use between 480 – 800 litres every day. Simple system's need one service per year with costs starting from as little as **£150.00 + VAT** whilst complex systems requiring more frequent servicing and media recharges could cost in excess of **£600.00 + VAT** per year to maintain. **Access Utilities** have a product called **Water Sure Plus** where we fix your costs for which you simply pay monthly to cover all your servicing needs, spare parts and any call out visits.

### Can I service my water treatment system?

Ultimately, it's your choice. Many of our clients undertake the more routine aspects of maintenance, such as replacing cartridge elements when needed, adding salt to the salt tanks for water softeners, adjusting the times on the filter control heads, cleaning the quartz sleeve and replacing the lamps on UV units, however, unless the system is fully inspected at least annually and all functions checked by a

skilled water treatment engineer the system will not be reliable and the water quality will diminish, often costing much more to fix due to lack of proper maintenance. Ideally, your water should be tested annually too, so unless you have your own water treatment test kit or access to an accredited laboratory, you will not know for sure that your water is safe to use in your property.

### What contaminants are usually associated with borehole waters?

Boreholes are narrow shafts drilled deep into the ground to obtain water from an Aquifer. Sometimes the water pressure is sufficient enough for it to rise to the surface. This is known as an **Artesian** borehole. In most cases, a specialist pump is lowered into the bore and will pump the water to the surface at the required pressure and flow. The most common issues found with borehole waters are the presence of iron, manganese, hydrogen sulphide, low pH, and in some cases, bacteria. Sometimes the water could be brackish. The water tends to be hard and can have a high Total Dissolved Solids count, although these two factors are not normally considered harmful in terms of the **Private Water Supply Regulations**.

### What contaminants are usually associated with surface derived waters such as springs, rivers and shallow wells?

Surface derived waters tend to reach properties under gravity from their source. Well waters will usually have a surface mounted or submersible pump installed to enable the water to be extracted. Surface waters are more likely to be affected seasonally and the quality of the water can often vary depending on the amount of rainfall. Over winter periods it's not uncommon for surface derived waters to freeze over in particularly cold conditions. In terms of the common issues associated with surface derived waters, they can be quite acidic, (low pH), suspended particles are often present, the water can be coloured and it's very likely that bacteria and harmful pathogens, such as **E.Coli and Cryptosporidium** are present from animal faecal matter. Other less common issues associated with surface derived waters are the presence of Nitrates from farming activities. Aluminium is sometimes present as are other natural minerals. Waters can be soft which adds to the problems related to acid erosion of pipework, hot water tanks and boilers in homes.

### How do I test for contaminants in my Private Water Supply?

The **Private Water Supply Regulations** require that all private water supplies for business and homes need to meet satisfactory standards in terms of mineral and bacterial levels. Risk assessments on your supply are often undertaken along with an accredited water testing. Depending on the volume of water used each day and the type of property served by the supply; your **Local Council EHO Department** will undertake periodic testing and advise if treatment is necessary. These surveys and tests are chargeable and if you ignore the recommendations following the test results, the EHO department has powers of enforcement and can impose fines.

### Why must I have my water treated, it looks fine and to my knowledge no one has ever been ill from drinking the water?

If you and your family have lived at the property for most of your lives, you will have built up some immunity to the harmful bacteria. Very often, if you have become ill with an **upset stomach and diarrhoea** you tend to blame the illness on something you have recently eaten or a stomach bug that you have caught from work or your children caught at school. Anyone visiting your home would not have that built in immunity. If the water supply is being used for a business such as catering or in a small hotel, legislation dictates that suitable treatment needs to be in place to protect you and your customers. If you just consider the short and long term **Health Risks** associated with harmful bacteria and other possible mineral and toxic contamination, surely knowing your water is safe has to be one of the most important factors for your home or business.

### Does treating the water supply alter the taste?

Potable water supplied by a water utility company will very often taste of chlorine, but private water supplies do not normally use chemicals as part of the treatment process. If the treatment only involves the use of a pre-filter and Ultraviolet Unit, then these items will not affect taste in any way. Other types of treatment may cause some subtle taste changes. A pH unit used to correct acidity may cause the water to taste slight different as the calcium based media used also increases the hardness which will then taste different but not objectionable. Usually, the treatment

reduces or removes the contaminants that affect taste such as iron present in borehole water or tannings in moorland waters for example. In any event, treated natural waters will always taste more wholesome when compared to chemically treated potable waters.

### **I have iron and manganese in my borehole water, can you treat this?**

Iron and manganese in borehole waters are quite common. Once we know the levels of these contaminants, we can provide suitable treatment. The iron can be seen as orange brown deposits or staining on sanitary wear or the grouting on tiled surfaces and the water will most likely taste metallic. Manganese is usually noticed as black particles in the water supply. Both contaminants will block pipework, shower heads, taps and damage boilers and hot water heaters. To reduce iron and manganese an automated backwashing Iron removal filter with a specific treatment media inside it is used. The filter needs connecting to a power supply and a drain point is required to allow the filter to backwash its media periodically to clean it. Sometimes an aeration filter is also installed to assist with the removal of the contaminants. If the levels of contaminant are particularly high, a two stage system may be required. These systems have been used for many years in for the treatment of iron and manganese and are robust units if serviced regularly.

### **My private water supply is corroding my copper pipework and hot water cylinder and I have green staining evident on my toilet bowl and sink, what is causing this?**

Your water will be acidic, (when measured on the pH scale), and will most likely be lower than pH 6.6. Springs and rivers very often are acidic originating from acid rain. Boreholes are sometimes found to be acidic too. Acidic water will corrode metallic items, especially copper pipework. It will also react with soaps and can even turn dyed blonde hair green. If you have lead pipework in your property, this will also be corroded and is extremely hazardous to your health and wellbeing if consumed. Ideally your water should be treated to increase the pH using a pH correction filter, a relatively simple and cheap form of treatment using a particular media which dissolves as the acidic water passes over it, raising the pH value and curing your problem.

### **My borehole water is very hard and causing scale to build up on my shower heads and damage to my boiler and washing machine, what can I do to stop this happening?**

It's quite common for borehole water to be hard. Hardness comes predominantly from calcium and magnesium carbonates dissolved in the water supply. Hardness in water isn't actually hazardous to consume and in terms of the **Private Water Supply Regulations** isn't really considered. Hardness will cause scaling on many household items, even more so in hot water systems. It can be reduced by installing a **Water Softener**. A Water Softener uses a specific type of resin in the sodium form, which is automatically regenerated periodically using a brine solution made from salt which is added to the softeners brine tank. As the hard water passes over the resin the hardness salts are exchanged for sodium, effectively softening the water preventing further scaling issues. Care must be taken when installing a Water Softener as sodium levels are monitored under the regulations; the maximum prescribed value should not exceed 200mg/l. We would always recommend that if a Water Softener is installed, it should ideally be fitted after the main cold water tap in your kitchen leaving this tap untreated and remaining on hard water, which can then be used for consumption and food preparation.

### **I've been told that I have E.Coli bacteria in my water supply, how can I treat this problem?**

E.Coli is a harmful bacterium known as a pathogen and is found inside animals intestines and animal faecal matter. If your water is a surface derived supply, it's quite common for many different bacteria to be present including the harmful pathogens such as E.Coli E0157. These harmful pathogens need to be destroyed and for **Private Water Supplies** Ultraviolet Units are typically used. An **Ultraviolet Unit** consists of a stainless steel chamber and quartz sleeve into which an ultraviolet lamp is installed. When the lamp is switched on it emits a specific UV wave length capable of destroying the DNA of any bacteria that may be present when passing water through the UV chamber. For an Ultraviolet unit to work effectively the water must be clear, meeting a specific UVT level and pre-filtration cartridges must be installed with the final element providing particulate filtration to less than 10microns. UV units are also flow rate critical.

### Surely borehole waters don't contain bacteria?

Most borehole waters come from ground water which has been drilled deep into rock below the surface until an aquifer is located, so you wouldn't expect bacteria to be found here. Surprisingly at least 20% of boreholes can be unsafe, containing bacteria and harmful pathogens. Usually if bacteria is present in a borehole it's due to a fault with the original construction of the bore, possibly from a dirty drilling rig, a borehole that hasn't been grouted correctly allowing surface water to find its way down onto the aquifer or even a poorly constructed borehole cap. In rare cases the borehole has been drilled downhill from a septic tank or effluent soak away or similar. When you consider the cost of drilling a borehole in the first place, the extra costs to install an Ultraviolet unit and pre-filter is negligible in comparison, so for peace of mind, it's best practice to install them anyway.

### What are sediment or particulate filters?

Simple sediment or particulate filters consist of a plastic filter housing with a filter bowl and fixing bracket which will hold different types of filter elements inside the bowls. Two common sizes are known as 10" and 20" which refers to the length of the filter housing bowl. They are often known as standard or big blue housings. The big blue housings provide higher flow rates through them. The function of sediment filters is to assist in cleaning dirty water by removing suspended particles in the water. The filter elements that fit inside the housings come in various micron ratings, the most common being used for **Private Water Supplies** are 100, 50, 25, 10, 5 and 1 micron. As the elements trap the suspended particles in the water supply, they become more fouled and dirty and ultimately they need to be replaced. If you have to replace or clean your filter elements often, this may indicate that you need a more suitable back washable **Turbidity Filter** to work alongside your sediment filters. Other types of filter element can be installed such as carbon. These can remove chlorine in **Potable Water Supplies** or reduce organics/colour from **Private Water Supplies**; however, flow rates through them are very low.

### My borehole water smells like rotten eggs, what causes this and can it be treated?

The rotten egg smell is from a gas known as **Hydrogen Sulphide H<sub>2</sub>S**. It's often produced by sulphate reducing bacteria in the bore. Although the gas and bacteria isn't

normally considered harmful. Hydrogen Sulphide gas in large volume is dangerous and usually the smell and taste are so repulsive, you wouldn't want to use or drink the water anyway. Hydrogen Sulphide gas can be reduced in a number of ways such as **aerating** the water to effectively "blow off" the gas. Low levels can be removed by passing the water through a carbon media and chlorine dosing can also be effective but using chlorine means that you have introduced a chemical into your supply which then needs to be monitored in terms of correct dosing rates.

### My water supply gravity feeds to my home but the pressure is really low, how can this be improved?

Water supplied from hillside springs or surface supplies often flow naturally to properties via gravity derived from the hillside. However, unless the water source is very high up on the hillside the resultant water pressure is generally very low. (For every 10 metres vertical height you would obtain approximately 1Bar pressure). The minimum pressure for most homes needs to be at least 1.5Bar, but with many homes now having numerous bathrooms and kitchens with many white goods using water, pressure requirements can be circa 3-4Bar. If you have water treatment equipment involving back washable filters, they need at least ideally 2Bar to function correctly and pressure losses will occur through the equipment on route to your property. A simple solution to remedy this problem is to install a **Booster Pump** which can be sized to provide the required flow and pressure. For pumps to function correctly and to limit damage from foreign objects sometimes found in the water supply such as small pieces of grit, we would always recommend that a break tank is installed before the pump. The break tank has added benefits of storing sufficient volume of water for your peak demand periods that wouldn't be available if the pump was connected directly to the water supply pipe. To protect the pump you should also install a suitably sized pressure vessel and pressure control. These stop the pump from running too frequently and control the pressure inside your property. We provide a variety of pump models and makes and all the supporting equipment to improve your water pressure and flow. All we need from you is space and power to run the pump.

**If you still have some questions that need answering, please feel free to call us on: 08442 412 717**