

# Case Study 5

## Treating a bore hole supply near Basingstoke

In early 2011 we were asked by Basingstoke plumbing company, F J Soper & Son, if we would look at treating a private water supply on a farming estate near Basingstoke. John Soper was concerned about the potability of the water from the farms bore hole. A survey showed the current ultra violet equipment to be inadequate and in very poor condition. We advised a complete revamp of the set up which would change completely how water was supplied to the two main residences.

The bore hole was once a well, back in the 1700's. The bore hole is situated in an extension on the side of the main Jacobean farm house. An electric submersible pump, which replaced an earlier diesel engine pump, lifts water from the 200ft bore hole up to a reservoir, on a hill, above the property. This stores several thousand gallons. From here the water, under gravity, flows at about 1 bar pressure back to the house and up to storage tanks in the roof.

The proposed new equipment needed to be housed close to the main farm house but also near to where the reservoir supply pipe emerged. It was decided that everything should be located in an insulated shed

which would be erected at the back of the farm house.

Some water treatment equipment requires a consistently good water pressure to operate. For this reason most of the private supplies we have treated have involved the fitting of a pressurised pump which is set at around 3.5 bar. This enables the house to function as if it were on a mains water supply.

Once John Soper's team had erected the shed and reorganised the pipe work we were then able to spend two days assembling the water treatment equipment. As the main concern was potability and as an ultra violet (UV) system is an excellent 'bug killer', this provided the 'centre piece' of the new set up. As the water was very hard (300mg/l of CaCO<sub>3</sub>) and as the internal quartz tube of a UV can scale badly, affecting its performance, it was agreed that a water softener should be installed. Also as UV must have particulate free water a filter must be fitted upstream.

In previous bore hole jobs we have fitted a separate filter preceding the water softener. With this installation we recommended The Hague 'Maximiser' 700 softener from a new range of highly salt efficient machines. These have an integrated, self back



The smaller picture shows where the bore hole is located next to the Jacobean farmhouse. The main picture shows the shed located to rear of the property in which the water treatment equipment is located.

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washing, 20 micron, prefilter. Although not fine enough for UV use (a 5 micron filter is needed) this concept is working well. The water is fairly dirty and therefore the separate 5 micron filter, we have installed in front of the UV, has to work less hard and the filter sleeves require to be changed less often than we would have expected.

The set up, as shown in the photograph below, shows the incoming supply passing through a Lowara variable speed drive pump. At this point there is a tee off to an outside tap. The water then passes through the softener, 5 micron filter and UV before being divided off to the two properties. Most pipe work is 28mm and suitably lagged. The system is capable of running at a peak of around 60 litres a minute if required. The shed is being fitted with lighting and a



The layout inside the shed shows the incoming and outgoing pipes in blue (centre). The softener is to the right. The pressurised pump (with blue pressure tank) is located left with the 5 micron filter mounted on the wall below the window. The stainless steel UV is mounted on the floor.

thermostatic heater for winter use.

We would like to thank the owners of the farm for allowing us to publish this case study of the project.



Aqua-Nouveau used a Hague water softener for the first time on this bore hole treatment project. It is the only softener in the UK to have a built-in 20 micron prefilter. It's also proved to be the most salt efficient water softener that you can buy. At 80% it uses almost half the amount of salt of a competitive softener.