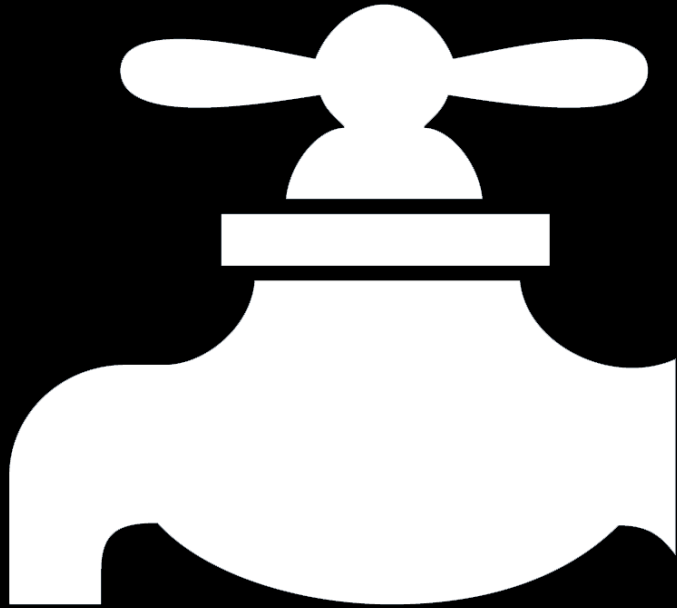


Private Water Supplies



**Your guide to the
Sample Results**

Environmental Services

www.south-norfolk.gov.uk



Guide to the results of analysis of drinking water

The following tables contain information about the chemical and bacterial parameters most frequently tested in the assessment of drinking water quality from Private supplies in the district of South Norfolk. The Prescribed Concentrations of Values (PCVs) are taken from the Private Water Supplies Regulations 1991.

It should be noted that, for well 3 and borehole supplies, protecting the source from contamination is the first line of defence against pollution.

Microbiological Parameters

Water is an excellent medium for the spread of disease. It is important that drinking water is monitored for the presence of Faecal contamination which is the main source of water born disease. This is carried out by looking for the presence of particular organisms which live in huge numbers in the gut of warm blooded animals (Outnumbering any disease-causing organism). These marker organisms are not usually dangerous by themselves.

Parameter	PCV Prescribed concentration or value (Maximum Unless otherwise stated)
Total Coliforms	0/100ml
Faecal Coliforms (E Coli)	0/100ml
Colony Count	No significant increase over what is normally observed
Nitrate	50mg/l

What it means	Remedies
<p>Total Coliforms comprises a range of organisms which may or may not be faecal in origin. Some are capable of growth in water and on fittings. Their presence is not always indicative of faecal contamination but certainly indicates a failure of any disinfectant system.</p>	<p>Protect the source. Install a disinfection system (ultra Violet Light. Chlorination. Silver - Impregnated filters, etc). Thoroughly clean the distribution system (pipework, tanks, etc)</p>
<p>The presence of these organisms indicates faecal contamination and that there is a risk that more dangerous organisms are present. Therefore there is a potential hazard to health.</p>	<p>Protect the source. Install a disinfection system (Ultra Violet Light). Chlorination. Silver - Impregnated filters, etc.)</p>
<p>This is a general indication of the bacterial content, and hence the hygienic quality of the supply. In practice, changes in the pattern of colony counts of samples are usually more significant than the actual numerical count in any particular sample.</p>	
<p>High levels of nitrate can cause a blood condition in young babies known as “blue baby syndrome”. This is very rare and no cases have been recorded in the UK since 1972. Nevertheless, doctors are concerned about high levels of nitrate in the diet generally and recommend precautionary restrictions.</p>	<p>Make up baby feeds using bottled water. Pregnant women also drink bottled water. Treatment not recommended - many supplies do not have the pressure to run a nitrate removal unit.</p>

General & Chemical Parameters

Parameter	PCV Prescribed concentration or value (Maximum Unless otherwise stated)
Iron	200 µg fe/l
Manganese	50 µg Mn/l
Conductivity	1500 micro Seimens/cm @ 20C

What it means	Remedies
<p>High iron concentrations are a common characteristic of borehole water particularly in many areas of South Norfolk where the underlying geology is the main cause. It is not a health hazard but may impart a taste to the water. Dissolved iron will precipitate as a brown solid on exposure to air and deposits are often found on taps.</p>	<p>Consider installing an iron / manganese filter.</p>
<p>High manganese concentrations are a common characteristic of borehole water, and are often found in conjunction with high Iron, particularly in many areas of South Norfolk, where the underlying geology is the main cause.</p>	<p>Consider installing an iron / manganese filter</p>
<p>This a measure of the No. of charged particles (ions) in the water, which is in turn a measure of the mineral salts content. Also often found in conjunction with high iron content.</p>	<p>Deionisation or reverse osmosis</p>

Parameter	PCV Prescribed concentration or value (Maximum Unless otherwise stated)
Turbidity	4 Formazin Turbidity Units (FTU)
Colour	20mg/IPt/Co Scale
Qualitative Odour	Any significant odour should be investigated
Qualitative Taste	Any significant odour should be investigated
pH	9.5 5.5 (minimum)
Calcium	250 mg Ca/l

What it means	Remedies
This is a measure of particles in the water which are too small to sediment out. Disinfection processes do not work well in Turbid Waters.	Filtration. Protect the source.
Some waters have a noticeable yellow colour which can be due to high iron or manganese content or the presence of decaying plant matter. The colour itself is not a health risk but may interfere with disinfection systems.	Activated carbon filter for removal of decaying plant matter. Iron and/or manganese usually requires some form of precipitation followed by filtration.
A noticeable odour indicates a problem with the supply. This may be due to pollution or stagnation.	Protect the source. Aeration. Activated carbon filtration.
This is a highly subjective parameter. If unacceptable to the consumer treatment may be required.	Protect the source. Activated carbon filtration.
pH is a measure of the degree of acidity in the water. PH 7.0 is neutral, <7.0 = Acidic >7.0 = Alkaline.	Installation of a correction unit, usually to reduce acidity.
Too much calcium leads to the furring up of service pipes and kettles etc.	Consider installing a water softener.

Parameter	PCV Prescribed concentration or value (Maximum Unless otherwise stated)
Lead	50 µg Pb/l
Total hardness	If the water has been softened, the total hardness must not be less than 60 mg Ca/l
Alkalinity	If the water has been softened the Alkalinity must not be less than 30 mg HCO ₃ /l
TON Total Oxidised Nitrogen (Sum of Nitrate & Nitrite)	Nitrate = 50 mg/l Nitrite = 0.1 mg/l
Ammonium (Sum of ammonia and Ammonium ions)	0.5 mg NH ₄ /l

What is means	Remedies
Usually caused by leaching of lead from lead pipes, or solder which are very rare nowadays.	Replace pipe work. Cation exchange. Filtration.
This is a measure of the total amount of calcium and magnesium in solution. There is some evidence that low hardness is associated with an increased risk of cardiovascular disease.	Activated carbon filter for removal of decaying plant matter. Iron and/or manganese usually requires some form of precipitation followed by filtration.
This is a measure of the ability of the water to hold a constant pH.	Remineralisation.
These may reach the supply as a result of the application of chemical or natural fertilisers. They can cause the disease methaemoglobinaemia or “blue baby syndrome” in small babies but this is extremely rare.	Protect the source Anion exchange Reverse Osmosis.
Ammonia is formed in decay processes and can indicate stagnation or faecal contamination or contamination by fertilisers. This poses no threat to health in the absence of any bacterial contamination.	Protect the source. Cation exchange Filtration.

Parameter	PCV Prescribed concentration or value (Maximum Unless otherwise stated)
Aluminium	200 µg Al/l
Potassium	12 mg K/l
Sodium	150 mg Na/l

What it means	Remedies
<p>In the forms found in drinking water, aluminium is unlikely to be absorbed by the human body. At levels above the PCV it is likely to be present as a white haze, which may form a sediment.</p>	<p>Activated carbon filter for removal of decaying plant matter. Iron and/or manganese usually requires some form of precipitation followed by filtration.</p>
<p>The probable source of high levels is fertiliser or plant feed. There are no health risks associated with potassium.</p>	<p>Protect the source. Reverse Osmosis</p>
<p>High levels of sodium may be the result of incorrect dosing if a softening unit is being used. It may be caused by salt water incursion in Broadland and coastal areas. If found in conjunction with high potassium and bacteriological failures this can also be an indicator of the presence of sewage in the supply. High levels of sodium/and or over softened water can be undesirable for heart and kidney complaints and may increase incidence of heart disease. Also thought to be responsible for incidence of infantile Hyponatraemia.</p>	<p>Protect the source. Check softening unit dosage if applicable. Demineralisation.</p>

If you have any queries regarding your sample results please contact the Environmental Protection team on 01508 533708 after 1pm.

For further specialist advice regarding remediation measures, please see local directories under the heading “Well Specialists”.

Notes