

# Advice Sheet 1 – Protecting Water Sources



## Introduction

The reason for protecting water supplies is that it is far better to protect water from contamination than to treat it once it has been contaminated.

Natural water drawn from the environment will generally contain some impurities and often these are innocuous and may not need removing. A catchment zone is the whole of the area within which water flows towards the intake. A survey of the catchment area should reveal potential sources of contamination. Both surface waters and groundwaters are at risk from agricultural pollution in rural areas.

## Catchment Protection

It is illegal to carry out any activity, which has a harmful effect on the quality of the water abstracted for drinking. Therefore activities which utilise waste matter, inorganic fertilisers or pesticides should be strictly controlled. Agricultural and horticultural activities should be carried out in accordance with the Code of Good Agricultural Practice for the Protection of Water (the Water Code) published by the Department for Environment, Food and Rural Affairs. This publication is available free of charge from DEFRA Publications, Admail 6000, London SW1A 2XX (Ref PB 0587).

## Springs

Exposed springs are vulnerable to contamination from human and animal activities. The usual method of protecting springs is to collect the water where it rises by enclosing the eye of the spring in a covered chamber or box with an outlet near the bottom to allow water to flow away from the original site of the spring, in this way the natural spring is disturbed as little as possible. To protect the spring the hillside must be excavated to a sufficient depth to tap the aquifer even when the water table is low and, for a gravity spring, to ensure that the collected water does not exert a back-pressure on the eye of the spring. Artesian springs should be protected by a chamber with walls

extending above the maximum static head; a strong sanitary cover should also be provided.

To protect the integrity of a spring supply as much as possible, the following precautionary measures should be undertaken:

- i) raise the top of the chamber above the level of the ground to prevent contamination from surface water run off. Any obvious surface flow of water should be channelled around the outside to carry it away from the source.
- ii) erect a stock proof fence to prevent contamination and damage to the chamber. The location of the fence should be a minimum of 1m distance, but this may need to be extended depending upon factors such as topography, surface geology and land use. The fence should exclude livestock from any surface water drainage system at all points uphill of the source.
- iii) ensure the chamber is sound, sealing all possible points of entry for surface water, animals and insects.
- iv) fit a water-tight, lockable cover.
- v) the source and/or collection chamber cover is clear from overgrowth, decaying vegetation, grass etc.
- iv) protect any overflow with a fine wire mesh.

## **Wells**

In order to protect well water from surface contamination the lining of the shaft should be impervious down to the level at which the groundwater flows into the well and it should extend up to at least 300mm above the ground level. A lockable sanitary cover should be fitted. The area round the well should be sealed with clay and a 1m wide stone or concrete paved collar round the well shaft sloping outwards towards a drainage channel, which should run to a soakaway located away from the well. Additional sanitary protection should be provided by fencing the well site to keep animals out.

## **Boreholes**

Drilling a borehole makes it possible to reach deep aquifers that are less likely to be affected by pollutants originating from the land or surface waters. Water from deep boreholes will normally be free from microbiological contamination, however this can depend upon several factors eg geology of the area, fissures in the rock and velocity of groundwater movement.

To protect the integrity of a borehole, a concrete apron should be laid around the well-head and sloped towards a drainage channel, which should run to a soakaway located away from the well-head. A sanitary chamber should be constructed above the well-head to house the pump

If any possible sources of contamination can be identified then appropriate preventative measures should be undertaken after which the system should be flushed with a hypochlorite solution (correctly diluted) to destroy any bacteria remaining in the system. The system should then be retested to ensure that the preventative measures have been successful.

If the source of the supply is itself polluted, or contamination cannot be successfully eliminated from the supply, then it will be necessary to either find an alternative supply or treat the water to destroy the bacteria.

For further advice or information, please contact:

Environmental Health  
South Hams District Council  
Follaton House  
Plymouth Road  
Totnes  
Devon TQ9 5NE

Telephone: 01803 861234

Fax: 01803 861294

Email: [environmental.health@southhams.gov.uk](mailto:environmental.health@southhams.gov.uk)

[www.southhams.gov.uk](http://www.southhams.gov.uk)

January 2006