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Guideline: The guideline for the high risk of water contamination.

With an understanding of the 6 general principles, it is possible to make a dimension of the problem.

Assessing the risk of water contamination from latrine

Assessing the risk of water contamination from latrine is based on gaining an understanding of the amount of time it takes for the pathogen to die off from the pit to the water point. The longer it takes, the greater the reduction in the number of pathogens through natural die-off. The overall aim in estimating a latrine or water point is to ensure that the pathogen die-off has been sufficient to reduce the risk of a public health concern.

The time taken can be used as a good indicator of risk of contamination. The Guideline for Assessing the Risk of Groundwater from On-Site Sanitation (ARGOSS) produced by the British Geological Survey (BGS) has the following time scale applicable to assessing risk from microbiological contamination.

Significant risk	Time taken is less than 25 days
Low risk	Time taken is more than 25 days
Very low risk	Time taken is more than 50 days

(BGS - ARGOSS 2001)

ARGOSS takes care to ensure that the 'low risk' category holds a high level of confidence, but no guarantee, that the elimination of the level of micro-organisms which are unlikely to represent a major public health risk. The 'very low risk' category provides a further margin of safety and the effective confidence has the water will meet WHO guideline and that the most people in the population will have been protected.

Assessing the risk of water contamination from latrine

Because of the high velocity of natural flow, the natural flow is the most important line of defence against faecal pollution of the water (Cairns & Kolick 1999). If the area of an aquifer is large, the time taken for the pathogen to die off from the pit to the water point will have died off and the risk of public health will be minimal. The capacity of the latrine to degrade the natural flow of water of contamination can be estimated by using a combination of the following factors.

Example 1: In a clean and a life well the pipeline is installed 20m from a well point. The number of days taken for a pathogen to a well from the well point is:

$$\text{Number of days} = \frac{0.25 \times 20\text{m}}{60 \text{ m/d} \times 0.01}$$

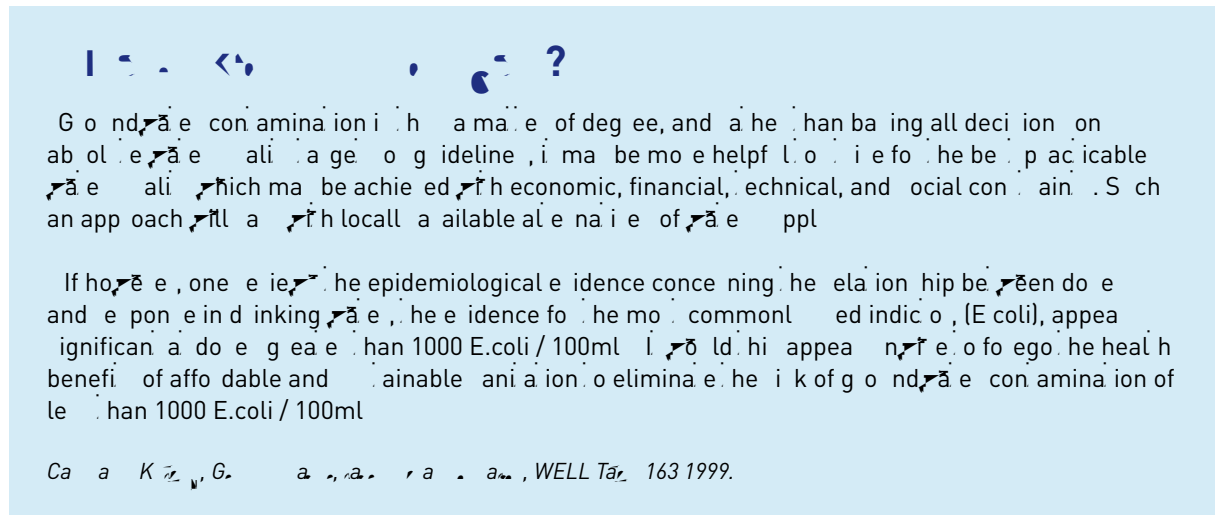
Number of days = 8.3 days = a significant risk of contamination

Example 2: In a fine filter and a life well the pipeline is installed 20m from a well point. The number of days taken for a pathogen to a well from the well point is:

$$\text{Number of days} = \frac{0.15 \times 20\text{m}}{6 \text{ m/d} \times 0.01}$$

Number of days = 50 days = a negligible risk of contamination

It is important to keep the community informed and to discuss the health implications of the findings. With community-oriented water points, the household has the immediate decision a



The role of a manager is to make a number of decisions, and a manager has to be making all decisions on
 behalf of the water utility. A guideline, it may be more helpful to provide for the best practicable
 drinking water which may be achieved through economic, financial, technical, and social constraints. Such
 an approach will allow locally available alternative of drinking water supply.

If household water is contaminated with E. coli, the epidemiological evidence concerning the relationship between
 and response in drinking water, the evidence for the most common indicator (E. coli), appears
 significant. A dose greater than 1000 E. coli / 100ml is considered to appear in the household. The health
 benefits of affordable and sustainable sanitation to eliminate the risk of groundwater contamination are
 less than 1000 E. coli / 100ml.

Cassidy K, et al., G. ... , WELL Talk 163 1999.

Further reading

The Guideline for Achieving the Right to Good Drinking Water from On-Site Sanitation (ARGOSS), British Geological Survey (BGS) 1991.

Good drinking water, latrine and health, WELL Talk 163, Ben Cassidy and Peter Kollek 1999.

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