Glossary

aquifer: a geological area that produces a quantity of water from permeable rock.

biofilm: microbial populations that grow on the inside of pipes and other surfaces.
biotest: biological testing using test organisms (in vivo) or modified cell tissues (in vitro).

Cryptosporidium: A protozoan commonly found in lakes and rivers that is highly resistant to disinfection. *Cryptosporidium* has caused several large outbreaks of gastrointestinal illness, with symptoms that include diarrhoea, nausea and stomach cramps. People with severely weakened immune systems (ie severely immunocompromised people) are likely to have more severe and more persistent symptoms than healthy individuals (adapted from United States Environmental Protection Agency).

cyanobacteria: Bacteria containing chlorophyll and phycobilins, commonly known as 'blue-green algae'.

disinfection: the process designed to kill most microorganisms in water, including essentially all pathogenic (disease-causing) bacteria. Chlorine is the disinfection method most frequently used in water treatment.

disinfection by-product: products of reactions between disinfectants (particularly chlorine) and naturally occurring organic material.

direct recharge: injection of water into an aquifer via injection wells.

Escherichia coli: a bacterium found in the gut, used as an indicator of faecal contamination of water.

exposure: contact of a chemical, physical or biological agent with the outer boundary of an organism (eg through inhalation, ingestion or dermal contact).

exposure assessment: the estimation (qualitative or quantitative) of the magnitude, frequency, duration, route and extent of exposure to one or more contaminated media.

Giardia lamblia: a protozoan frequently found in rivers and lakes. If water containing infectious cysts of *Giardia* is ingested, the protozoan can cause a severe gastrointestinal disease called giardiasis.

groundwater: water contained in rocks or subsoil.

hazard: a biological, chemical, physical or radiological agent that has the potential to cause harm.

hazard analysis critical control point (HACCP) system: a systematic way to control safety hazards in a process, by first identifying hazards, their severity and likelihood of occurrence; then identifying critical control points and their monitoring criteria to establish controls that will reduce, prevent, or eliminate the identified hazards.

health impact assessment: the estimation of the effects of any specific action (plans, policies or programmes) in any given environment, on the health of a defined population.

heterotrophic plate count (HPC): the number of colonies of heterotrophic bacteria grown on selected solid media at a given temperature and incubation period, usually expressed in number of bacteria per millilitre of sample.

indicator: a specific contaminant, group of contaminants or constituent that signals the presence of something else (eg *Escherichia coli* indicate the presence of pathogenic bacteria).

indicator organisms: microorganisms whose presence is indicative of pollution or of more harmful microorganisms.

indirect recharge: involves spreading surface water on land so that the water infiltrates through the vadose zone (the unsaturated layer above the water table) down to the aquifer.

multiple barriers: use of more than one preventive measure as a barrier against hazards.

pathogen: a disease-causing organism (eg bacteria, viruses and protozoa).

pH: an expression of the intensity of the basic or acid condition of a liquid (natural waters usually have a pH between 6.5 and 8.5).

raw water: water in its natural state before any treatment; or the water entering the first treatment process of a water treatment plant.

reference dose: The estimate of the daily exposure to the human population that is likely to be without appreciable risk of deleterious effects over a lifetime (Dictionary of terms, 2002).

risk: the likelihood of a hazard causing harm in exposed populations in a specified time frame, including the magnitude of that harm.

risk assessment: the overall process of using available information to predict how often hazards or specified events may occur (likelihood) and the magnitude of their consequences (adapted from AS/NZS 4360:1999).

risk management: the systematic evaluation of the water supply system, the identification of hazards and hazardous events, the assessment of risks, and the development and implementation of preventive strategies to manage the risks.

source water: water in its natural state, before any treatment to make it suitable for drinking.

surface water: all water naturally open to the atmosphere (eg rivers, streams, lakes and reservoirs).

toxicology: study of poisons, their effects, antidotes and detection.

turbidity: the cloudiness of water caused by the presence of fine suspended matter.

vadose zone: the unsaturated layer above the water table.

wastewater reclamation: the treatment or processing of wastewater to make it reusable.

wastewater (or water) reuse: the beneficial use of treated water.