TABLE OF CONTENTS

8.0 ON-SITE SEWAGE TREATMENT AND EFFLUENT REUSE

8.1 BACKGROUND

The functional requirements of on-site sewage treatment systems are that they be designed, operated and maintained to:

- ensure that wastewater effluent reuse practices do not create a mode of transmission for disease;
- encourage the application of wastewater effluent to the landscape in the most efficient and sustainable method;
- bring about simple, safe and cost-effective operation and routine service requirements;
- ensure soil condition is not degraded;
- ensure that by-products are disposed in an hygienic manner which is not detrimental to the environment or public health; and
- ensure that the wastewater effluent is maintained within the boundary of the property from which it is produced so that off-site impacts are minimised or prevented (eg contamination of surface water and groundwater by nitrogen and phosphorus from the effluent, environmental nuisance, etc).

The purpose of this Chapter is to identify those key water quality-related issues that must be addressed in development of on-site sewage treatment and effluent disposal systems and to identify the existing policies, standards and guidelines governing such systems.

For guidance on the reuse of treated sewage treatment plant effluent on *large* areas such as golf courses, refer to the Department of Natural Resources' *Interim Guidelines for Reuse or Disposal of Reclaimed Wastewater* (DNR, 1996).

8.2 KEY ISSUES/DESIGN CRITERIA

These guidelines apply to on-site domestic systems with wastewater effluent flows of up to 20 persons in a single residence (ie approximately <4000 litres/day)[1].

- On-site systems must be provided in accordance with the specific requirements of:
  - Council's *On-Site Domestic Wastewater Treatment and Disposal Systems Policy* dated 1997 (or later version);
  - AS1547 - *Disposal Systems for Effluent from Domestic Premises*; and
  - Department of Natural Resources' *Interim Code of Practice for On-Site Sewerage Facilities* (DNR, 1998).
- Permissible systems for on-site treatment currently include:
  - septic tanks;
  - dry vault units (composting toilets);
  - grey water collection wells;
  - aerated wastewater treatment systems (AWTS);
  - sand media and alternative filters; and
  - sullage pump wells.
- Approved disposal systems currently include:
  - evapotranspiration areas; and
  - sub-surface irrigation to a fixed landscape area.
- Effluent from on-site systems must not be reused by spraying unless the biological quality of the water meets the specific requirements of the Department of Natural Resources' *Interim Code of Practice* (DNR, 1998) and can be demonstrated to comply through a mechanism of performance measurement.
- Reuse areas should be physically separated from any areas used for passive or active recreation.
- Installations must comply with the *Sewerage and Water Supply Act 1949* and with Department of Natural Resources' and Department of Health's licence conditions that are made pursuant to this Act[2].
- Approval (via a permit/licence) must be obtained from Council prior to the installation of any aerated wastewater treatment system, septic tank, chemical toilet or dry vault (composting toilet) system. In accordance with the *Sewerage and Water Supply Act 1949,* Part 4 – On-site sewerage facility, S. 72.1, a person must gain approval from Council to install, change or take away an on-site sewerage facility from a premise. The permits (licences) required under this Act include:
  - State Government approval for installing an on-site sewage treatment facility in Queensland;
  - Council's approval for installing an on-site sewerage treatment facility within Brisbane; and
  - Council's approval for an annual operating permit.

1 Note that an on-site system may require licensing under the *Environmental Protection Act 1994* if the facility is deemed to be a "sewage treatment plant" that has a peak design capacity of 21 or more equivalent persons.

2 The Queensland *Sewerage and Water Supply Act 1949* states that approval is required to install, change or take away an on-site sewerage treatment facility from a premise. It also sets standards for on-site sewerage facilities, including model requirements and type specifications, with reference to the "on-site sewerage code" and AS 1547.

8.3 REFERENCES

1. Brisbane City Council, 1997. *On-Site Domestic Wastewater Treatment and Disposal Systems Policy.* Brisbane City Council, Brisbane.
2. Department of Natural Resources, 1996. *Interim Guidelines for Reuse or Disposal of Reclaimed Wastewater*. Department of Natural Resources, Brisbane.
3. Department of Natural Resources, 1998. *Interim Code of Practice for On-Site Sewerage Facilities*. Department of Natural Resources, Brisbane.
4. Queensland State Government, 1949. *Sewerage and Water Supply Act, 1949*. State Government Printer, Brisbane.
5. Standards Australia, 1994. *AS1547-1994 - Disposal Systems for Effluent from Domestic Premises.* Standards Australia, Sydney.
6. Urban Water Research Association of Australia, 1993. *Research Report No. 60 - Domestic Greywater Reuse: Preliminary Evaluation.* Melbourne Water Corporation, Melbourne.
7. Urban Water Research Association of Australia, 1994. *Research Report No. 73 - Domestic Greywater Reuse: Overseas Practice and its Applicability to Australia*. Melbourne Water Corporation, Melbourne.