

MAITLAND CITY COUNCIL

CITY WIDE DEVELOPMENT CONTROL PLAN

ON-SITE SEWAGE MANAGEMENT SYSTEMS

This chapter comprises part of the Maitland City Wide Development Control Plan and has been prepared in accordance with the provisions of the Environmental and Planning Assessment Act, 1979. This chapter is to be read in conjunction with the whole document.

This chapter was amended on 24 January 2006 to be included in the City Wide Development Control Plan.

A handwritten signature in black ink, appearing to be 'B. Smith', written in a cursive style.

**Signed:
Group Manager Service Planning & Regulation**

Date: 24 January 2006

This plan shall be known as:

ON-SITE SEWAGE MANAGEMENT SYSTEMS

OBJECTIVES

This Development Control Plan aims to achieve the following:

- (a) The prevention of the spread of disease by micro-organisms.
- (b) The prevention of the spread of foul odours.
- (c) The prevention of contamination of water.
- (d) The prevention of degradation of soil and vegetation.
- (e) The implementation of measures to discourage insects and vermin.
- (f) To ensure that persons do not come into contact with untreated sewage or effluent (whether partially treated or not) in their ordinary activities on the premises concerned.
- (g) To encourage the re-use of resources (including nutrients, organic matter and water).
- (h) To minimise any adverse impacts on the amenity of the land on which it is installed or constructed and other land in the vicinity of that land.

This Development Control Plan (DCP) may be amended from time to time by Council. Proposed amendments are required to be advertised and exhibited in draft form and any submissions received must be considered by Council before the amended plan is adopted. People using this DCP should ensure that they have the current copy of the plan, including any amendments. If in doubt, please check with Council's Customer Service Centre.

Adopted as per council resolution Effective: 26 th November 2003	Dated 25 th November 2003 _____	Amendment: _____
Certified in accordance with the Environmental Planning and Assessment Act 1979 and Regulations	General Manager _____ Date:	

TABLE OF CONTENTS

INTRODUCTION	6
1.0 ADVISORY	6
1.1 What is this Plan called?	6
1.2 Where does this Plan apply?	6
1.3 What are the aims of this Plan?.....	6
1.4 How does this plan relate to Planning Instruments and legislation?	7
1.5 What other standards apply?	8
1.6 What are the objectives of this Plan?.....	7
1.7 What does this plan contain and how is it used?.....	8
2.0 PERFORMANCE CRITERIA	9
2.1 Performance objectives.	9
2.2 Prevent the spread of disease by micro-organisms.	9
2.3 The prevention of the spread of foul odours.	9
2.4 Preventing contamination of water.....	10
2.5 Preventing degradation of soil and vegetation.	10
2.6 The discouragement of insects and vermin.	10
2.7 Ensuring that persons do not come into contact with untreated sewage or effluent (whether treated or not) in their ordinary activities on the premises concerned.....	10
2.9 The minimisation of any adverse impacts on the amenity of the land on which it is installed or constructed and other land in the vicinity of that land.....	11
3.0 SYSTEM SELECTION	12
3.1 What current technologies are available to me to dispose of effluent on site?	11
3.2 Conventional septic tank and absorption systems	11
What Size does my septic tank have to be?	12
Do I need a Filter in my septic tank?.....	12
Soil absorption systems.....	13
How Does an Absorption Trench Work?.....	13
What Size Does My Absorption Trench Have To Be?.....	13
3.3 How Does an Evapo-Transpiration Area Work?	13
What Size Does My Evapo-Transpiration Area Have to be?	14

3.4	Aerated Wastewater Treatment Systems (AWTS).....	14
	How does an aerated wastewater treatment system work?.....	14
	What size does my aerated wastewater treatment system have to be?.....	15
	Does my aerated wastewater treatment system need a filter?.....	15
	Disposal options for aerated wastewater treatment systems.....	15
3.5	What is surface irrigation?	15
	What size does my surface irrigation area have to be?	16
3.6	What is sub surface disposal?.....	16
	What size does my surface irrigation have to be?.....	18
3.7	Recirculating Sand Filters	17
	What is a Recirculating Sand Filter?	17
	How does a sand filter work?	17
3.9	Other Alternative Systems	19
3.10	Accreditation of Waste Treatment Devices	19
4.0	SITE AND SOIL INVESTIGATION	19
4.1	Residential Land Category Assessment	19
4.2	High risk category site and soil assessment.....	20
4.3	Low risk category site and soil assessment.....	20
4.4	Commercial, Tourist and Agricultural Developments and Residential Developments with occupancies greater than 10 persons assessment.....	20
5.0	INSTALLATION, OPERATION AND MAINTENANCE	21
5.1	Installation	21
5.2	Operation	21
5.3	Maintenance	21
5.4	General	21
5.5	System reporting.....	22
5.6	Conventional septic tank systems.	22
5.7	Aerated Waste Water Treatment Systems	22
5.8	Composting Toilets.....	23
5.9	Sand Filters	23
5.10	Council Auditing	23

APPENDIX 1	25
TYPICAL DOMESTIC - WASTEWATER FLOW DESIGN ALLOWANCES	25
APPENDIX 2	29
PULSATING POP UP SPRINKLERS	27
APPENDIX 3	28
SUITABLE VEGETATION FOR LAND APPLICATION AREAS	28
APPENDIX 4	31
RISK ASSESSMENT FORM.	31
APPENDIX 5	33
MODEL SITE REPORT	33
APPENDIX 6	37
STANDARD CONDITIONS	37
APPENDIX 7	48
SEWAGE MANAGEMENT FACILITY - AUDIT REPORT	48

INTRODUCTION

Local Government and catchment boundaries rarely coincide. The catchments of the Hunter River, Lake Macquarie and Tuggerah Lakes are split between a number of Local Government Areas. The adoption of uniform standards for the control of sewage management systems will afford consistency to all service providers and consultants within this region.

As a region of natural beauty with a significant tourist industry it is important to protect our lakes, rivers and creeks from pollution. As Council is a regulatory stakeholder in this area it is legally obliged to ensure that development does not detrimentally impact on the environment. Many waterways suffer environmental damage as a result of incremental pollution rather than from one pollution event. Both groundwater and surface water influenced by discharged effluent are a prime example of this.

Development Control Plan 44 is a resource tool as well as a working document that aims to protect our waterways from pollution and in particular pollution from on site effluent disposal, by setting minimum standards for the disposal of effluent on site in conjunction with relevant guidelines and legislation.

1.0 ADVISORY

1.1 What is this Plan called?

This plan may be cited as Maitland City Council Development Control Plan No 44. – On-Site Sewage Management Systems.

1.2 Where does this Plan apply?

This DCP applies to all land within the Maitland City Council Local Government Area that is not capable of being connected to a reticulated sewerage system of Council.

1.3 What are the aims of this Plan?

In recent years, there has been an increasing concern with the cumulative environmental impacts, and local public health risks that may be associated with on-site sewage management systems. On-site sewage management systems often fail due to the inability of the site to cope with effluent absorption due to impermeable clay soils, overloading of the systems with large volumes of wastewater, inappropriate design and lack of proper maintenance.

Where connection to a reticulated sewage system is not practical, installation of an on-site sewage management system is often the only acceptable alternative. Pump-out systems will not be approved for new dwellings, and are not considered an alternative system due to improper use of these systems and the unsustainable nature of their operation. Existing pump out systems will be phased out at every opportunity.

It is recognised however that not all sites have natural characteristics suitable for on-site disposal of effluent. Excessive slope, flood potential, high ground water and other features may be considered as site limitations when undertaking a site report. In these cases, the site may need to be improved, or an alternative system employed (see section 3.9).

Council acknowledges that the development of land for residential purposes in areas not serviced with reticulated sewerage can present potential environmental and public health risks as a result of inadequate on-site disposal of effluent.

The major aims of this plan are therefore to:

- Protect the health of people within the Maitland City Council local government area through proper on site effluent disposal and
- Protect the natural environment from excessive impacts from on site effluent disposal.

This policy describes Council's requirements for on-site disposal of effluent. The policy has been developed after considering legislative requirements of the Local Government (Approvals) Regulation 1999 (LGAR), The On-site Domestic Wastewater Management AS 1547, and relevant experience.

1.4 How does this plan relate to Planning Instruments and legislation?

This Development Control Plan is prepared and adopted pursuant to the provisions of the Environmental Planning and Assessment Act 1979 (EP&A Act 1979) and also forms part of the Local Approvals Policy adopted as provided by the provisions of the Local Government Act 1993. It is a policy document for the general guidance of Council in the exercise of its duties and functions under these acts.

This DCP should be read in conjunction with the relevant provisions of

- Maitland City Council Local Environmental Plan 1993 (MCCLEP):

MCCLEP outlines the requirements for the use of land and the operating standards for development within the Shire.

- The Local Government Act 1993 (LGA):

The Local Government Act section 68 requires that the approval of Maitland City Council is to be granted prior to the installation, construction or alteration of a waste treatment device or a human waste storage facility or a drain connected to any device. It also requires the approval of Council to operate a sewage management system.

- The Local Government (Approvals) Regulation 1993 (LGAR):

Part 4 Division 2 of the regulations to the Local Government Act set out the requirements relating to the approval for the management of waste. Part 4 Division 7 outlines the requirements required to operate a sewerage management system. Details regarding the

installation and operation of a sewage management system are also outlined in Council's On Site Sewage Management Strategy.

- The EP&A Act 1979:

The EPA and Act identifies procedures for assessment of certain activities identified as "Designated Development" in its accompanying Regulation. These activities must be assessed via the submission of a Development Application accompanied by an Environmental Impact Statement (EIS).

- The EP&A Act Regulation 2000:

Schedule 3 of the Regulation identifies sewerage systems that:

- 1 Treat sewage and:
 - i) Have an intended processing capacity of more than 2500 persons equivalent capacity or 750 kilolitres per day, or
 - ii) Have an intended processing capacity of more than 20 persons equivalent capacity or 6 kilolitres per day and are located:
 - a) on a flood/plain, or
 - b) within a coastal dune field, or
- 2 Incinerate sewage or sewage products, or
- 3 Temporarily or permanently store sewage, sludge or effluent:
 - i) With a capacity of more than 1000 tonnes of material, or
 - ii) At a location:
 - within 100 metres of a natural water body or wetlands, or
 - in an area of high watertable or highly permeable soils,
 - within a drinking water catchment, or
 - on a flood plain, or
 - within 250 metres of a dwelling not associated with the development, or

4) Release or reuse more than 20 persons equivalent capacity or 6 kilolitres per day of sewage, effluent or sludge at a location:

i) in or within 100 metres natural water body, wetlands, coastal dune fields or an environmentally sensitive area, or

in an area of

- high watertable, or
- highly permeable soils or
- acid sulphate, sodic or saline soils

- Protection of the Environment Operations Act 1997 (POEO Act)

The POEO Act Schedule 2 outlines the licensing requirements prescribed by the Environment Protection Authority for sewage treatment systems.

1.5 What other standards apply?

- AS/NZS 1547-2000 (On Site Domestic Waste Water Management) – On-site Sewage Management for Single households

This Combined Australian New Zealand Standard provides guidelines for designing maintaining and installing disposal systems.

- Environment & Health Protection Guidelines for single Households (1998) (EHPG)

These guidelines produced by the NSW Department of Local Government also provide guidelines for the design, installation and maintenance of disposal systems.

- AS/NZS 3500.5:2000 National Plumbing and Drainage Domestic Installations

This Combined Australian New Zealand Standard provides guidelines for the design and installation of sanitary plumbing and drainage within buildings.

1.6 What are the objectives of this plan?

The DCP has been developed to assist with the implementation of the following objectives: -

- (a) The prevention of the spread of disease by micro-organisms.
- (b) The prevention of the spread of foul odours.
- (c) The prevention of contamination of water.
- (d) The prevention of degradation of soil and vegetation.
- (e) The implementation of measures to discourage insects and vermin.
- (f) To ensure that persons do not come into contact with untreated sewage or effluent (whether partially treated or not) in their ordinary activities on the premises concerned.
- (g) To encourage the re-use of resources (including nutrients, organic matter and water).
- (h) To minimise any adverse impacts on the amenity of the land on which it is installed or constructed and other land in the vicinity of that land.

1.7 What does this plan contain and how is it used?

This plan contains five (5) sections identifying requirements for on site sewage management in unsewered areas within the Maitland LGA.

Section 1 – The ADVISORY section provides information on the preparation of this plan.

Use this section to identify when and how this plan applies.

Section 2 - The PERFORMANCE CRITERIA section provides the minimum standards to which an onsite sewage management system must be installed and be required to operate.

Section 3 - The SYSTEM SELECTION section identifies current on-site disposal methods, sizing and design requirements of systems in unsewered areas.

Use this section to familiarise yourself with technologies available for the disposal of effluent and design requirements for systems and disposal areas.

Section 4 - The SITE AND SOIL INVESTIGATION section establishes site specific requirements.

Use this section to determine what design criteria is applicable to your land to enable you to apply to Council to install and operate an on-site sewage management system.

Section 5 - The INSTALLATION, OPERATION and MAINTENANCE section details specific requirements about your approved On Site sewage Management system.

Use this section to make yourself aware of Council's general requirements once an approval to install and operate your on-site sewage management system has been granted.

The Appendices - provide additional information regarding sewage management systems and approvals.

2.0 PERFORMANCE CRITERIA

An Application to install and operate an on site sewage management system must be primarily assessed against the performance objectives outlined in this section of the DCP. The performance objectives stipulate a standard at which an on site sewage management system must operate and be maintained.

It should be noted that a system designed and maintained to meet the prescriptive

requirements in sections 3 and 5 are deemed to meet the performance objectives in this section.

2.1 PERFORMANCE OBJECTIVES.

2.2 Prevent the spread of disease by micro-organisms.

An on site sewage management system must prevent the spread of disease by: -

- (a) Its design being appropriate to the site and soil conditions.
- (b) Treating effluent in an accredited sewage management system appropriate to the intended loading of the system.
- (c) Conveying sewage to a suitable area for disposal of effluent appropriate to the intended loading of the application area.
- (d) Maintaining the system to enable operation in accordance with the manufacturers specifications and the approvals to operate and install issued by Council

2.3 The prevention of the spread of foul odours.

An on site sewage management system must prevent the spread of foul odours by: -

- (a) Ensuring the system is specifically designed and is considered consistent with its function and its use.
- (b) Managing liquid and solid inputs so as to not affect the viability and sustainability of the sewage management system.
- (c) Maintaining the system to enable operation in accordance with the manufacturers specifications and the approvals to operate and install issued by Council.

2.4 Preventing contamination of water.

An on site sewage management system must prevent the contamination of water by: -

- (a) Ensuring the system is specifically designed and is considered consistent with its function and its use.
- (b) Its design being appropriate to the site and soil conditions.
- (c) Managing liquid and solid inputs so as to not affect the viability and sustainability of the sewage management system.
- (d) Maintaining the system to enable operation in accordance with the manufacturer's specifications and the approvals to operate and install issued by Council

2.5 Preventing degradation of soil and vegetation.

An on site sewage management system must prevent degradation of soil and vegetation by: -

- (a) Ensuring the system is specifically designed and is considered consistent with its function and its use.
- (b) Its design being appropriate to the site and soil conditions, having also considered the potential for mass movement or slope failure.
- (c) Providing adequate erosion and sedimentation controls before, during and after construction /installation of the sewage management facility.
- (d) Installing appropriately positioned diversion drains around the land application area.
- (e) Maintaining the system to enable operation in accordance with the manufacturers specifications and the approvals to operate and install issued by Council.

2.6 The discouragement of insects and vermin.

An on site sewage management system must discourage insects and vermin by: -

- (a) Ensuring the system is specifically designed and is considered consistent with its function and its use.
- (b) Maintaining the system to enable operation in accordance with the manufacturers specifications and the approvals to operate and install issued by Council.

2.7 Ensuring that persons do not come into contact with untreated sewage or effluent (whether treated or not) in their ordinary activities on the premises concerned.

An on site sewage management system must be designed to ensure that persons do not come into contact with untreated sewage or effluent (whether partially treated or not) in their ordinary activities on the premises concerned by: -

- (a) Ensuring the system is specifically designed and is considered consistent with its function and its use.
- (b) Managing liquid and solid inputs so as to not affect the viability and sustainability of the sewage management system.
- (c) Maintaining the system to enable operation in accordance with the manufacturers specifications and the approvals to operate and install issued by Council.

2.8 The re-use of resources (including nutrients, organic matter and water).

An on site sewage management system must facilitate the re-use of resources by: -

- (a) Carefully identifying and selecting areas for the disposal of effluent whilst taking into account the local climate, surface and ground

water hydrology, soil characteristics, and vegetation type.

- (b) Maintaining the system to enable operation in accordance with the manufacturers specifications and the approvals to operate and install issued by Council.

2.9 The minimisation of any adverse impacts on the amenity of the land on which it is installed or constructed and other land in the vicinity of that land.

An on site sewage management system must minimise any adverse impacts on the amenity of the land on which it is installed or constructed and other land in the vicinity of that land by: -

- (a) Ensuring the system is specifically designed and is considered consistent with its function and its use.
- (b) Its design being appropriate to the site and soil conditions.
- (c) Managing liquid and solid inputs so as to not affect the viability and sustainability of the sewage management system.
- (d) Maintaining the system to enable operation in accordance with the manufacturers specifications and the approvals to operate and install issued by Council.

3.0 SYSTEM SELECTION

3.1 What technologies are available to dispose of effluent on site?

The following is a summary of some of the more commonly known on-site wastewater treatment technologies on which these guidelines are based. Included are general operating and sizing requirements for each particular system.

3.2 Conventional septic tank and absorption systems

Traditionally, in unsewered areas, effluent from dwellings has received primary treatment in a conventional septic tank before being absorbed in underground trenches. This system has relied on the soil completing the treatment process as the effluent moves through the strata. Not all soils or sites are suitable for absorption trenches, particularly in village areas with small blocks and soils with poor soil structures. In the past in some areas, a pump-out system has been provided whereby the effluent is pumped out by a road tanker, transported and treated at a sewage treatment works. Pump out systems will no longer be approved by Council and all existing systems will be phased out at every opportunity.

Even on large allotments, the soils must have the correct characteristics to satisfactorily treat the effluent. Unsuitable landscapes may cause effluent to reach the surface and/or groundwater and adversely affect receiving water bodies. Certain landscapes within Maitland City Council region do not have the characteristics necessary to treat effluent from septic tank systems without having a cumulative adverse impact on the receiving environment.

Areas of this nature may be limited in terms of development density, due to the environmental characteristics and the outlined objectives of this DCP.

How does a septic tank work?

A Septic Tank system usually comprises two chambers. These chambers can be separate or within the one tank. The first or primary chamber allows some of the solids to settle to the bottom of the tank and oils and fats to rise to the surface to form a scum layer.

The solids that have settled to the bottom of the primary chamber undergo anaerobic bacterial digestion producing sludge. During this bacterial action the composition of the effluent changes producing lower levels of chemicals and pathogens.

The second chamber or holding well accumulates smaller amounts of solids and scum prior to the effluent leaving the tank for discharge to the land application area (LAA). To ensure that solids do not reach the LAA an approved in tank filter must be installed in such a manner to enable easy removal for cleaning on a regular basis. The tank must provide a retention time of at least 24 hours so that the effluent undergoes adequate anaerobic bacterial digestion and the flow of effluent to the LAA is controlled to avoid flooding. A cross section of a septic tank is depicted in figure 1, below.

Total Nitrogen (N)	55-60mg/l
Total Phosphorous (P)	10-15 mg/l
Faecal Coliforms	1000000-10000000 cfu/100ml

Source: EHPG (1998)

For Council to be able to approve the installation and operation of a septic tank the applicant must supply the NSW Health’s certificate of accreditation. In addition the tank itself must clearly indicate the day, month and year of manufacture, the manufacturers name or registered trademark and the capacity of the unit in litres.

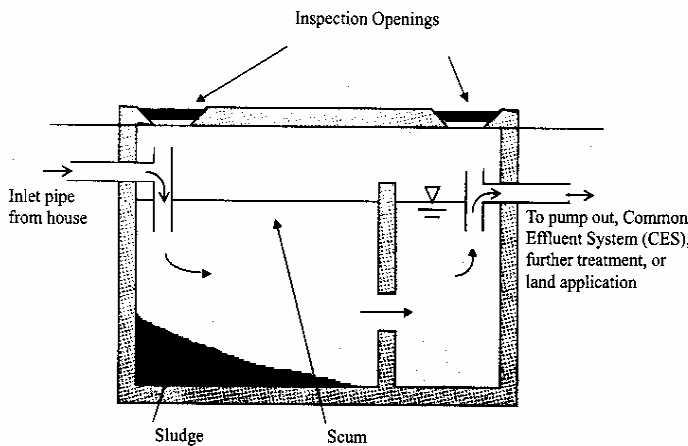


Figure 1: Cross-section of Septic Tank

What Size does my septic tank have to be?

The minimum size of a domestic septic tank accredited in NSW is 2300 litres however, the Hunter and Central Coast Region of Council’s require a 3000 litre tank as the minimum size for a three-bedroom dwelling.

The following equation can be used to determine a specific tank size relevant to the number of persons (max) residing in your dwelling.

$$STC = HLR \times N + BA$$

Where

STC = Septic tank capacity (litres)

BA = Basic allowance for sludge = 1550 litres

HLR = Hydraulic loading rate (litres /person /day)

N = Number of persons (max) in dwelling

Note:

Appendix 1 (AS/NZS 1547:2000 p141) outlines the hydraulic loading rate. The minimum number of people taken to reside in a dwelling is 5. Occupancy loading is calculated at the rate of 2 persons per bedroom.

The wastewater from a septic tank is not disinfected and has high nutrient levels therefore it poses a potential health risk and may be environmentally hazardous. Table 1 provides a general overview of the expected effluent quality from a septic tank before it is discharged to the LAA. As the discharge is considered potentially hazardous all primary treated effluent is disposed of below ground. It is therefore important to maintain and monitor your LAA to ensure that water from the trench or transpiration area does not resurface.

Table 1: Septic Tank Expected Effluent Quality

Parameter	Concentration
Biochemical Oxygen Demand (BOD)	150 mg/l
Suspended Solids (SS)	50mg/l

Do I need a Filter in my septic tank?

To ensure that solids do not reach the LAA an approved in tank filter must be installed in such a manner to enable easy removal for cleaning on a regular basis. A number of in-tank filters are

currently available on the market. The preferred type device is a conical filter that has an aperture of not greater than 1mm and is fitted to the outlet square of the tank. It is recommended that the filter be cleaned at 6 monthly intervals.

Soil absorption systems

There are two types of soil absorption systems commonly used to dispose of effluent from a septic tank. They are Absorption Trenches and Evapo-transpiration areas. These are outlined below.

How Does an Absorption Trench Work?

The absorption or sullage trench receives primary treated effluent from the septic tank. The role of the trench is to evenly discharge this effluent to the subsoil. The subsoil then filters the effluent as it percolates through. It is therefore essential that the permeability of the soil in the LAA is limited to between 5mm/day (silty Clay) and 80mm/day (sandy loam). If a seasonal or permanent water table is within 1 metre of the surface of the proposed LAA the land is not considered suitable for absorption trenches. If the site conditions are not within these parameters the effluent may impact on the health and amenity of the environment.

What Size Does My Absorption Trench Have To Be?

The following equation sourced from AS 1547:2000 shall be used to determine the length of an absorption trench in lineal metres.

$$L = \frac{HLR}{DLR \times W}$$

Where

- L = Length of trench (metres)
- HLR = Hydraulic loading rate (litres)
- DLR = Design loading rate (litres)
- W = Width of trench (metres)

Note

Appendix 1 (AS/NZS 1547:2000 p141) outlines the hydraulic loading rate. The DLR figure can be found in AS/NZS 1547:2000 pp 116 - 117 table 4.2A1.

A depiction of a typical absorption trench is shown in figure 2, below.

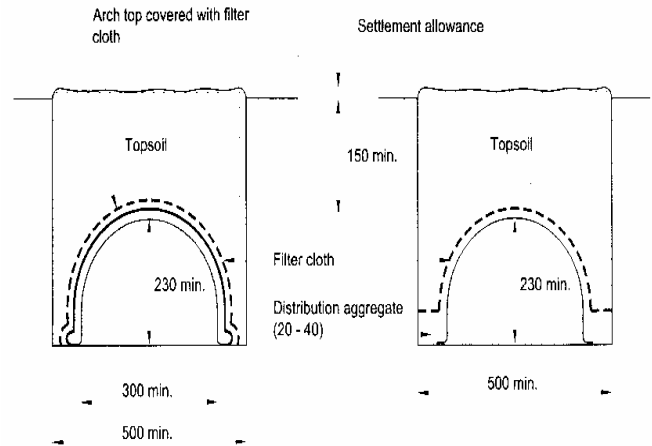


Figure 2: Typical Absorption Trench Design

3.3 How Does an Evapo-Transpiration Area Work?

An Evapo-transpiration Area (ETA) is a LAA of a predetermined size that is surrounded on all sides by impervious bunding usually consisting of clay. The base of the ETA is also lined with impervious clay.

Across the high side of the bed is a distribution trench which discharges along its length to the bed of the ETA. The base of the bed has a minimum cross fall of 1%. On top of the base is a layer of 40mm to 50 mm diameter stones. Over this is laid geo-textile fabric on which sandy loam is placed. This top layer is then planted out with a nutrient tolerant grass.

The effluent enters the ETA via the distribution trench and from there into the bed. The hydraulic content of the effluent is evaporated or transpired by the grass into the atmosphere.

What Size Does My Evapo-Transpiration Area Have to be?

The following equation shall be used to determine the size of an ETA in Square metres.

$$A = \text{HLR} \div \text{ETR}$$

Where

A = Area in Square metres

HLR = Hydraulic Loading Rate (L/Person/Day)

ETR = Evapo-Transpiration Rate (L/Square Metre/Day)

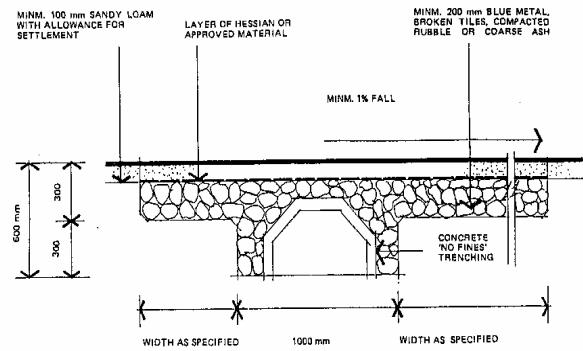
Based on:

The HLR is calculated using Appendix 1 (AS/NZS 1547:2000 p141) of this document and the ETR using a standard figure of 4.25 litres/square metre/day. It should be noted that the standard ETR figure given is conservative. If it is considered by the designer that the local conditions in conjunction with the vegetation chosen for the ETA will provide a better ETR then a water balance analysis over a twelve monthly cycle must be undertaken.

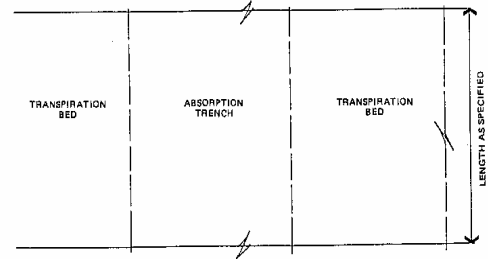
Note

- An additional 93 square metres shall be added to the calculated size of the ETA if an automatic washing machine is installed in the dwelling.
- Further concessions may also be granted where water saving technologies are installed in the dwelling.

A Standard detail of an ETA is shown in figure 3.



SECTION



PLAN

NOTES:— Drainage disposal areas (absorption trenches and transpiration beds) are to be constructed to the sizes and in positions specified on Drainage Layouts.
 The absorption trench is to be located in the transpiration bed in the position indicated on the layouts and the bottom of the transpiration beds are to be level throughout.
 Drainage disposal areas are to be finished with sufficient sandy loam to allow for settlement and after settlement are to have minimum fall necessary to shed surface water. The natural ground forming the lower side of the bed is to be graded level. Impervious retaining walls may be required to achieve this objective.
 Any concentrated flow of surface water is to be diverted clear of drainage disposal area to Council satisfaction.
 Disposal areas should be turfed as soon as possible following construction. Turfing of disposal areas is to be carried out at the time of construction of disposal areas when directed.

Figure 3: Evapo-Transpiration Area

3.4 Aerated Wastewater Treatment Systems (AWTS)

How does an aerated wastewater treatment system work?

The aerated wastewater treatment system (AWTS) is an alternative to the conventional septic system. This effluent is treated to a level known as tertiary treatment with the effluent undergoing disinfection by chlorination or ultra violet light in various chambers of a tank to remove bacteria and other micro-organisms.

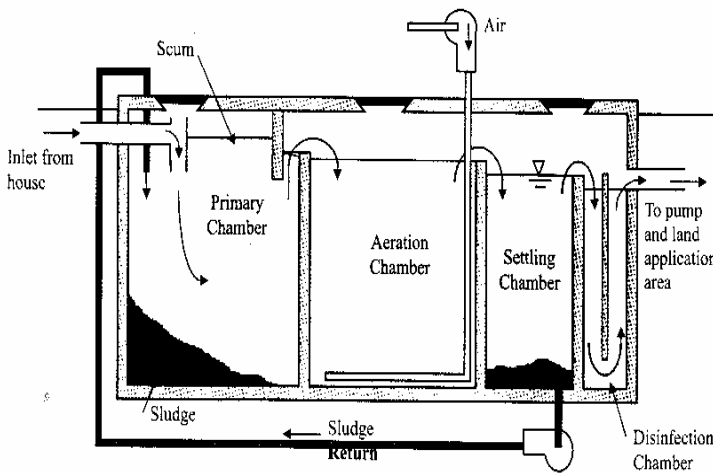


Figure 4: Aerated Wastewater Treatment System

This level of treatment allows the effluent to be spray irrigated above ground or discharged in a shallow sub surface bed and, if operated and maintained correctly, without any major health risk. Table 2 outlines an overview of expected effluent quality from an AWTS.

Table 2: AWTS Expected Effluent Quality

Parameter	Concentration
Biochemical Oxygen Demand (BOD)	<20 mg/l
Suspended Solids (SS)	<30mg/l
Total Nitrogen (N)	15-35mg/l
Total Phosphorous (P)	10-15 mg/l
Faecal Coliforms	Up to 30 cfu/100ml

Source : EHPG (1998)

Because the effluent is treated to a higher standard than the conventional septic tank, it contains fewer potential harmful pathogens and as such its impact on the health and amenity of the local environs is not considered as great.

The exception is when an AWTS is not properly operated or regularly maintained. Without regular maintenance by a suitably qualified person, significant public health and pollution problems can eventuate.

What size does my aerated wastewater treatment system have to be?

All AWTS are required to have NSW Health accreditation. All AWTS accredited in NSW have a 10 person capacity (expressed as a 10 EP system). An AWTS of this size will cater for most residences. Should your situation require a system greater than 10 EP a special design would be required. This is covered later in this chapter under alternative systems.

Does my aerated wastewater treatment system need a filter?

As with septic tank absorption systems a filter is required to be installed to all AWTS to restrict solids and sludge from finding its way to the disposal nozzles whether they be sprayers, drippers, or the like. Should solids find their way to these nozzles they will block causing localised inundation of the disposal area and irrigation pump burn out. It is also essential to ensure that the filter does not block, as blockage will also result in the same problems.

Disposal options for aerated wastewater treatment systems.

3.5 What is surface irrigation?

Surface irrigation utilises a specific area of your land. The irrigation being the LAA area that the site assessment process has determined as being the most appropriate space to dispose of effluent on the site. Within this area is laid the distribution line that comes from the outlet of the AWTS. Along this line is a series of sprayers, drippers or soaker attachments that discharge the treated effluent.

The most common method of application for surface irrigation is by sprayers or sprinklers. Sprayers or sprinklers are usually low pressure devices. To ensure wind-blown or drift effluent does not detrimentally effect the environment and public health the spray head plume radius of the device should not exceed 2 metres and have a plume height of not greater than 400 mm.

This standard ensures that the prescribed buffer distances outlined in Appendix 4 protect the environment and public health.

In addition to standard sprinklers used for surface irrigation, alternative designs may be assessed. Appendix 2 outlines the requirements for a specific type of pulsating pop up sprinkler.

Effluent dispersed by irrigation is either absorbed by the soil, taken up by vegetation or evaporated. Suitable vegetation for land application areas can be found in Appendix 3.

Surface irrigation of effluent has drawbacks particularly when the LAA is inadequate to deal with the effluent or where the prevailing conditions are not favourable. Poor soil, land slope, overland water flows and inclement weather may cause effluent to leave both the LAA and the site. This effluent may be discharged into the neighbouring environment and have detrimental environmental and/or public health effects.

The installation of shallow bed subsurface irrigation may overcome this constraint where local conditions permit and is Council's preferred option wherever possible.

What size does my surface irrigation area have to be?

Over recent years there has been conjecture as to the correct method in sizing the LAA where the disposal method is by surface irrigation. These methods include determining the hydraulic and nutrient outputs of an AWTS and applying these characteristics to an equation.

In most cases a determination based on the total nitrogen concentration will be the limiting factor. Accordingly, the following method can be used to determine the appropriate size of the irrigation area in square metres:

$$\text{SIA} = \frac{\text{TN} \times \text{N} \times \text{HLR}}{\text{CLR}}$$

Where:

SIA = Surface irrigation area (square metres)
 TN = Total nitrogen output of AWTS (mg/l)
 HLR = Hydraulic loading rate (L/person/day)
 N = Number of persons (max) in dwelling
 CLR = Critical loading rate = 25 mg/Sqr m/d (EHPG pp152-153)

Note:

Appendix 1 (AS/NZS 1547:2000 p141) outlines the hydraulic loading rate. The minimum number of people taken to reside in a dwelling is 5. Occupancy loading is calculated at the rate of 2 persons per bedroom. The total nitrogen output of an AWTS is taken to be the figure stated in the NSW Health accreditation document for the system in question. The critical loading rate is a nominal value. Should a revised rate be used in this calculation then supporting evidence will need to be submitted to justify the case.

Further the preferred method may be substituted by alternative solutions however a report must accompany the proposal outlining the aims, objectives, methods and results of the procedure so that Council can undertake an assessment of the procedure.

3.6 What is sub surface disposal?

As its name describes subsurface disposal is the method of discharging effluent below the ground to deal with sewage on site. Subsurface disposal is Council's preferred option wherever possible.

The system entails an arrangement of plastic irrigation pipes designed to discharge effluent evenly along their length (pressure compensating line). The pressure compensating line is similar to that used in agricultural applications for irrigation. The difference however is the inclusion of chemicals to inhibit root intrusion into the pipe work and bacterial growth inside the line. Pressure compensating line used for effluent disposal can be identified by a pink stripe along its length whilst

agricultural irrigation line is identified by a purple stripe.

The principle of AWTS sub surface disposal (SSD) is similar to that of an ETA in that the effluent is evaporated from the ground and transpired by the vegetation on the surface area. It is essential that the pressure compensating line is situated at the right depth being 150 mm below the surface. As an ETA is a closed disposal system there is no loss of effluent outside the LAA however SSD does allow the export of effluent from the LAA through percolation.

In New South Wales the technology of discharging effluent from an AWTS below the ground is a relatively recent occurrence. Prior to this all AWTS effluent was spray irrigated within a designated disposal area. In some circumstances this produced problems for the safe disposal of effluent in an environmentally responsible manner and the likelihood that effluent leaving the site would effect sensitive areas. Subsurface irrigation overcomes some of these constraints and enables more difficult sites to be able to deal with effluent on site.

Subsurface irrigation has an additional economic advantage in that effluent discharge is not required to be chlorinated. The savings over the life of a system on this point alone can be considerable.

What size does my sub surface disposal area have to be?

The following equation shall be used to determine the size the LAA for sub surface irrigation in square metres.

$$A = \text{HLR} \div \text{DDR}$$

Where:

A = Area (Square metres)

HLR = Hydraulic Loading Rate (L/Person/Day)

DDR = Design Disposal Rate (L/Square Metre/Day)

Note:

An additional 93 square metres shall be added to the calculated size of the LAA if an automatic washing machine is installed in the dwelling. In addition concession may be granted should water saving technologies be installed in the dwelling.

Based on:

The HLR is calculated using Appendix 1 (AS/NZS 1547:2000 p141) of this document and the ETR using a standard figure of 5 litres/square metre/day. It should be noted that the standard DDR figure given is conservative. If it is considered by the designer that the local conditions in conjunction with the vegetation chosen for the LAA will provide a better DDR then a water balance analysis over a twelve monthly cycle must be undertaken.

3.7 Recirculating Sand Filters

What is a Recirculating Sand Filter?

A recirculating sand filter (RSF) is an enhanced effluent treatment device that is situated between a septic tank or an AWTS and the land application area. They are usually constructed utilising a container such as a large concrete or reinforced plastic tub. The tub is filled with a specified grade of sand to the level of the outlet manifold. The manifold has outlet or orifice shields placed over the openings from which the effluent is pumped. The manifold is covered with either a courser sand grade or pea gravel to enhance and protect the system (figure 6). An RSF is required to have NSW Health accreditation.

How does a sand filter work?

Effluent from the treatment tank is pressure dosed by a pump over the surface area of the sand filter. The effluent then percolates through the sand. A percentage of this effluent is returned to the pump chamber and then reapplied to the sand filter. This gives the device

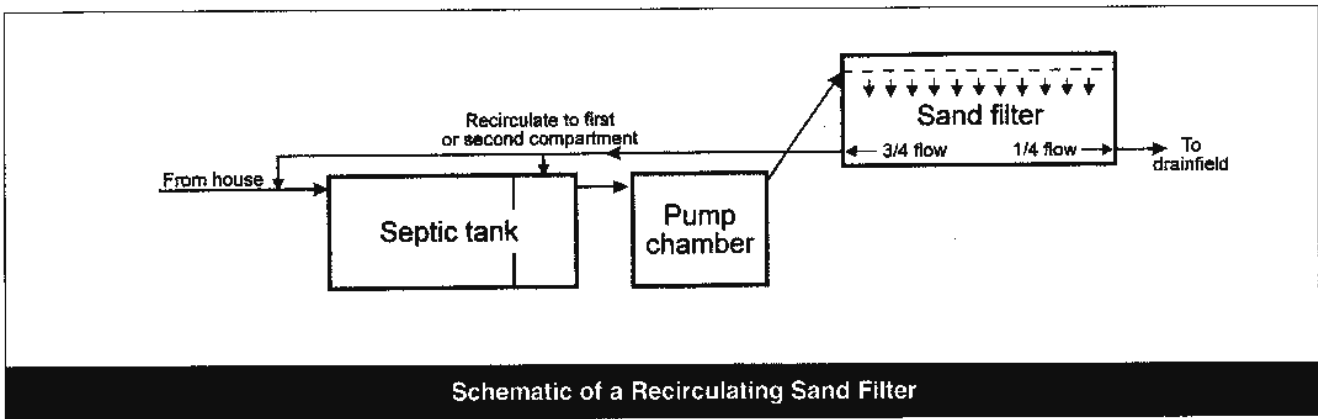
its name. The remaining effluent is conveyed to the land application area for disposal.

Sand filters are a system to enhance the quality of effluent that is produced. Sand filters under normal conditions will decrease nitrogen by converting nitrates into nitrogen gas. In some situations nitrogen levels could be decreased to below 5mg/l.

De - nitrification from this process has also led to phosphorous levels of less than 10 mg/l. In addition sand filters promote the growth of aerobic bacteria due to the filter's environment. A food source (nutrient rich effluent) for the

bacteria is supplied to the bacteria on a regular basis throughout the day. Aerobic bacteria are essential in dealing with the treatment of *e-coli* and *faecal coliforms* present in the effluent.

Like most effluent treatment systems sand filters require regular maintenance. The method and considerations for servicing a sand filter is located in clause 5.3.2.4 of this document.



Schematic of a Recirculating Sand Filter

Figure 6: Sand Recirculating Filter

3.8 Composting Toilets

There are two types of composting toilets currently available in New South Wales, dry composting and wet composting. They function with a no flush toilet pedestal or alternatively with moisture from cistern flushing.

In these systems, toilet wastes pass from the pan down a chute and into a chamber similar in size to a conventional septic tank. All faecal matter and other compostable matter produced in the dwelling, such as toilet paper, may be disposed of to this system where it is broken down into compost by natural decomposing organisms. When fully broken down, the compost may be used in gardens but must be buried and covered.

A fan connected to a vent pipe produces negative air pressure within the composting chamber. The fan aims to draw odours away from the toilet pan and evaporate excess liquid from the composting chamber in dry composting toilets.

A cross section of a composting toilet is depicted in figure 6.

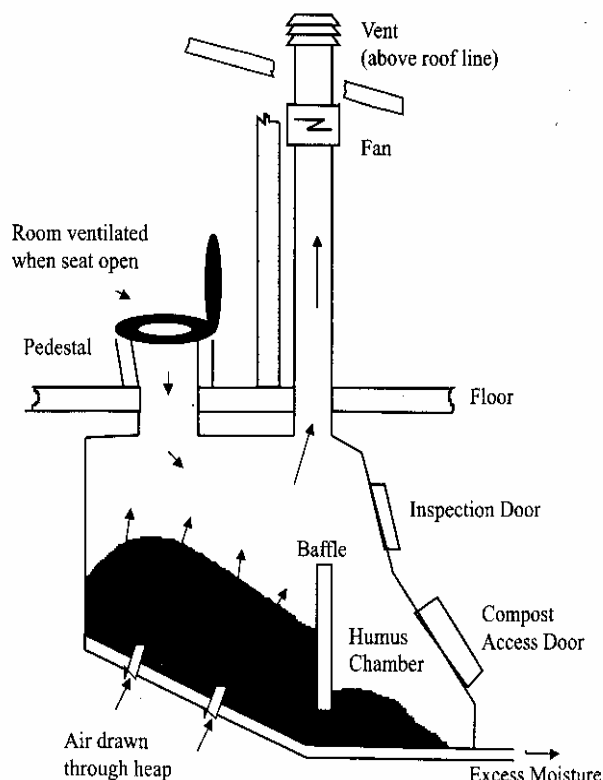


Figure 7: Composting Toilet

These systems treat only toilet wastes, and all other liquid wastes from the shower, kitchen and laundry (sullage wastes or grey water) must be disposed of via a separate grey water system. These systems discharge to subsurface disposal areas such as absorption trenches or evapo-transpiration areas. The dry composting toilet itself produces only a small amount of liquid wastes where operated in accordance with the manufactures specifications.

3.9 Other Alternative Systems

Increasing awareness of environmental issues has seen significant changes to domestic effluent disposal in the last decade. This trend is likely to continue with new products coming onto the market.

As such, certain installations are not described in the above information. This does not mean that Council will not assess an application for an alternative system, however, it does mean that Council must assess the proposal on its merits.

In such cases the applicant must provide designs and reports by suitably qualified professionals in the field of effluent disposal, demonstrating how the system will meet all relevant standards and legislation and the objectives of this DCP.

3.10 Accreditation of Waste Treatment Devices

Clause 43 of the Local Government Approvals Regulation, 1999, provides that Council cannot approve an application to install an "off the shelf" waste treatment device unless the Council is satisfied that the device has been accredited by the Director General of the NSW Department of Health.

4. SITE AND SOIL INVESTIGATION

4.1 Residential Land Category Assessment

All existing systems within the Maitland local government area have been classified based on

their location of either within or not within an environmentally sensitive area, as to the risk they pose to health, amenity and their likely effect on the environment. For the purposes of sewage management systems, environmentally sensitive areas within the Maitland City Council area are the same as those defined in accordance with State Environmental Planning Policy Number 60.

4.2 High risk category site and soil assessment located within an environmentally sensitive area

- Demonstrate the measures incorporated in the system design to deal with the hydraulic load as the result of site constraints identified in the risk assessment such as limited allotment size.
- Demonstrate the measures incorporated in the system design to decrease nutrient output, namely total nitrogen and phosphorous of not more than 5mg/l as the result of site constraints identified in the risk assessment.
- Site-specific information by way of report on how the system can operate to a level that provides adequate health and amenity as well as having minimal effect on the environment given the site constraints.
- Detail of mitigative measures regarding protection of the system in the event of flood if the land is susceptible.
- A report to indicate the feasibility of the site and soil to accept and dispose of effluent in the form as outlined in Appendix 5.
- Decrease nutrient output by 5% or better dependant on site analysis.

4.3 Low risk category site and soil assessment located outside of an environmentally sensitive area

- A report to indicate the feasibility of the site to accept and dispose of effluent in the form outlined in Appendix 5.

4.4 Commercial, Tourist and Agricultural Developments and Residential Developments with occupancies greater than 10 persons assessment.

Sewage management systems proposed for developments of this nature must produce effluent quality of at least a secondary standard.

A development application for development within these categories will require a report addressing the following heads of consideration:

- Outline the type and configuration of system proposed for the development including tank capacities, the method of construction of tanks and the like.
- Provide information including calculations as to how the system will cater for the proposed loading. The information must reference hydraulic and solid capacities in the system design.
- Provide a water balance analysis for the site.
- Advise of the expected influent quality.
- Advise of the proposed outputs of the treated effluent prior to disposal in the LAA.
- Advise of any adverse chemical or biological inputs into the system and how the treatment device will process these inputs and achieve the accepted effluent quality.
- Demonstrate that the sewage management system meets the objectives of this DCP and related legislation.
- Provide a design including sizing calculations and construction methods regarding the LAA.
- Detail the mitigative measures proposed regarding protection of the system in the event of flood if the land is susceptible.
- Submit a report to indicate the feasibility of the site and soil to accept and dispose of effluent in the form outlined in Appendix 5.

5.0 Installation, Operation and Maintenance

5.1 Installation

Once you have received the consent of Council you should make yourself aware of all requirements of the approval by looking over the stamped plans, details and specifications and by reading the conditions outlined in the Notice of Determination.

This Notice of Determination prescribes the conditions that must be followed when installing and operating your sewage management system. In most cases the standard conditions imposed are pertaining to the particular system you have chosen, however, in some circumstances site and system specific conditions may be imposed. Council's standard conditions are outlined in Appendix 7.

To determine compliance with these conditions Council Officers may carry out various inspections during system installation and on completion of all works. A final inspection is mandatory prior to the system being used.

Once the final inspection has been satisfactorily completed the conditions of approval to operate the system come into effect.

5.2 Operation

To ensure that your new system performs to the designed standard there are a few basic rules to follow.

In short what you put into your system effects what comes out.

Therefore:

Don't:-

- Place stain removers, nappy soakers, etc down your sink.
- Other than toilet paper put any items such as condoms, nappies, sanitary napkins and the like into the system.

- Put large quantities of bleach, or other foreign material into the system.
- Put oils and fats down the sink as they don't mix with water and will clog your system.
- Install a garbage grinder in your house.
- Use antiseptic such as medical and cleaning solutions as they will have the result their name suggests. They kill all the bacteria in your sewage management system.

Do

- Use only disinfectants that state they are septic friendly.
- Avoid laundry detergents that contain a high sodium content. Most laundry powder manufacturers use sodium as a bulking agent to give the appearance of value for money.
- Try using a phosphorous free laundry detergent. Products that are phosphorous free indicate this fact on their packaging.
- Use a sink strainer on your kitchen sink to stop food wastes from entering the system.

5.3 Maintenance

5.4 General

In conjunction with the installation of your sewage management system Council will issue an "Approval to Operate". This approval outlines the requirements that must be complied with throughout the life of your system. The Approval to Operate does this by imposing conditions pertinent to the type of system that you have.

A large part of operating a sewage management system is the general maintenance that must be undertaken and this is reflected in the conditions of approval.

For instance, you will be aware from the description given earlier in this DCP that an AWTS has a number of elements that allow it to operate. It is essential that regular checks be undertaken by suitably qualified persons to ensure that all parts of the system are operating to the optimum level. If you have an AWTS your approval to operate the system will require

that this maintenance check be carried out on a regular basis in accordance with the manufacturer's specifications.

In addition to general servicing of sewage management systems Council also may also carry out on-the-spot checks of selected systems according to the site's land category.

A copy of an Audit Report checklist can be found at Appendix 7.

5.5 SYSTEM REPORTING

5.6 Conventional septic tank systems.

Conventional septic tank systems are not maintenance free. Solids levels will build up in septic tanks over a number of years and accordingly, these systems require regular "desludging". The frequency of desludging is dependant upon the number of people using the system but generally systems will be required to be desludged at least every three to five years.

In addition, the in tank filter located in the outlet square of the system should be checked and cleared of any solid matter at periods of not less than six months.

Council from time to time may also require a report from a suitably qualified expert that details the operating standard of the system and makes recommendations to correct any system faults.

This report shall address the following criteria:

- Tank size;
- Condition of internal baffle if installed;
- Condition of grease trap if installed;
- Height of tank above surrounding ground level;
- Condition of tank lid;
- Whether the lid and inspection openings in the lid are appropriately sealed;
- The state of repair of the tank;
- The condition of the inlet and outlet squares;
- The level of sludge in the tank;

- The level of scum in the tank;
- Whether there is evidence of effluent resurfacing on the site; and
- Whether there are odours present.

5.7 Aerated Waste Water Treatment Systems

AWT systems are by nature of their design complicated and have the propensity to break down if they are not checked regularly to ensure that all aspects of the system are operating to the required standard.

Subsequently, the system's approval to install and operate requires that a regular maintenance regime be implemented. A regular service is carried out by a suitably qualified service provider, normally at not less than three monthly intervals. A service report that indicates there is any evidence of non-compliance with Council's conditions of consent must be forwarded to Council within seven days. The owner/operator must keep a log book of all service reports and record the date and result of every service.

A service report must address the following criteria:

- Condition of internal baffle if installed;
- Condition of grease trap if installed;
- Height of tank above surrounding ground level;
- Condition of tank lid(s);
- Whether the lid and inspection openings in the lid are appropriately sealed;
- The state of repair of the tank;
- The condition of the inlet and outlet squares;
- The level of sludge in the tank;
- The level of scum in the tank;
- Operating standard of the pump;
- Operating standard of the blower;
- Operating standard of the electrical component;
- Operating standard of the alarms;
- Operating standard of the air lines;
- Operating standard of the clarifier;
- Whether the sludge return is operating;

- Operating standard of the chlorinator;
- Whether there are signs of effluent resurfacing on the site;
- Whether there are odours present;
- Levels of total nitrogen being discharged from the system;
- Levels of total phosphorous being discharged from the system;
- Total free chlorine;
- PH levels;
- Number of irrigation sprinklers;
- Operating standard of the irrigation sprinklers; and
- Whether effluent is running off the site.

5.8 Composting Toilets

From time to time Council may require that a report from a suitably qualified expert be submitted to Council to advise of the operating standard of the system.

The report shall address the following criteria:

- Fan operation and maintenance;
- Filters to air intakes;
- Any heating elements;
- Any rotation or turning of the compost;
- Levels of composted material;
- Presence of flies or other disease transmitting insects within the composting chamber;
- That wastes have been allowed to compost for the period recommended for the type of unit;
- That the permanent construction notice is still affixed within the closet compartment;
- Any liquid discharge from the unit and accompanying disposal location; and
- The grey water disposal system including inspection of the disposal area.

5.9 Sand Filters

Like a septic tank and an AWTs, sand filters are not maintenance free. Although they form a different step in the treatment of effluent they are still subject to conditions that may cause

them to fail. Constant effluent supply to the filter is imperative to ensure its proper operation. Accordingly, it is essential that the pump and supply manifolds are free of foreign matter and are working correctly.

Likewise, the sand bed must also be monitored to ensure that the applied effluent is evenly distributing over and through the sand.

The life of your sand filter and frequency of proper and effective maintenance is also dependant on the state of repair and effectiveness of the initial treatment system.

An assessment is to be undertaken on a 12 monthly basis and must include:-

- The state of repair of the container housing the sand filter;
- Height of the sand filter above the surrounding ground level;
- Operating standard of the dosing pump;
- Operating standards of the electrical components;
- Operating standards of the alarms;
- Whether the return line to the treatment tank is operating;
- Levels of total nitrogen being discharged from the filter;
- Levels of Phosphorous being discharged from the filter;
- Whether there are odours present;
- Is the filter free of vegetation whether alive or dead; and
- Whether there are signs of effluent re surfacing in the filter bed.

5.10 Council Auditing

Council's On-site Sewage Management Strategy provides for a random auditing system. This means that from time to time Council may inspect your sewage management system. This inspection along with reports from your contractor will enable Council to determine compliance with the approvals to install and operate your sewage management system. If it is found that your system does not comply with these approvals and current legislation,

Council's warning and orders process would then be followed. This form of action by Council is dependant on the severity of your systems departure from its operating standard.

Should compliance not be reached within the prescribed time period contained in a warning letter or order of Council, Council has the option to issue a penalty infringement notice. This offence attracts a fine of 3 penalty units (1 Penalty Unit currently equals \$110). Instances of continued non-compliance may lead to the instigation of court action.

APPENDIX 1

TYPICAL DOMESTIC - WASTEWATER
FLOW DESIGN ALLOWANCES

Source	Typical wastewater flow allowance in L/person/day (see Note 1)	
	On-site roof water tank supply	Reticulated community or a bore-water supply
HOUSEHOLDS WITH STANDARD FIXTURES (INCLUDING AUTOMATIC WASHING MACHINE)	140	180
Households with standard water reduction fixtures (see Note 2)	115	145
Households with full water-reduction facilities (see Note 3)	80	110
Households with extra wastewater producing facilities	170	220
Households (black water only)	50	60
Households (grey water only)	90	120
Motels/hotels		
– guests, resident staff	140	180
– non-resident staff	30	40
– reception rooms	20	30
– bar trade (per customer)	20	25
– restaurant (per diner)	20	30
COMMUNITY HALLS		
– banqueting	20	30
– meetings	10	15
Restaurants (per diner)		
– dinner	20	30
– lunch	15	25
Tea rooms (per customer)		
– without restroom facilities	10	15
– with restroom facilities	15	25
School (pupils plus staff)	30	40
Rural factories, shopping centres	30	50
Camping grounds		
– fully serviced	100	130
– recreation areas	50	65

NOTES:

- 1 These flows are minimum rates unless actual flows from past experience can be demonstrated.
- 2 Standard water-reduction fixtures include dual flush 11/5.5 litre water closets, shower-flow restrictors, aerator faucets (taps) and water-conserving automatic washing machines.
- 3 Full water-reduction fixtures include the combined use of reduced flush 6/3 litre water closets, shower-flow restrictors, aerator faucets, front-load washing machines and flow/pressure control valves on all water-use outlets.

SOURCE: AS 1547:2000

APPENDIX 2

PULSATING POP UP SPRINKLERS

Data Sheet

An impulse or pulsating popup sprinkler is a device that allows the dispersal of liquid in this case effluent over a predetermined area. They are different to the usual sprinkler type used to disperse effluent over the land application area in that they are buried with only the top most cover plate visible and their droplet size is greater. The major advantage of this sprinkler is that it is not susceptible to damage from maintenance of the land application area such as mowing grass and the like as the sprinkler body retracts into the housing located below ground when the supply pump is deactivated. The disadvantage is the increased buffer distances required to those environmentally sensitive features and buildings on or surrounding the land application area.

Sprinkler Type

The type of sprinkler must be an Elgo 2688 or similar with a 3.5 nozzle. A minimum of 4 sprinklers shall be installed.

Sprinkler Throw

A maximum radius of 5 metres is to be set for all sprinklers.

Buffer Distances

At least 20 metres shall be provided between the outer most point of the sprinkler radius and

- Any Dwelling on the site
- Any dwelling on adjoining properties. As such if pop ups are to be used the site analysis shall include details of improvements on adjoining properties.

At least 10 metres shall be provided between the outer most point of the sprinkler throw and any property boundary.

All other buffer distances will be as per the Environment and Health Protection guidelines.

Coverage of Sprinkler

75 % of the area of the sprinkler radius that has direct contact with the ground is taken to be the effective irrigation field. This being the case each sprinkler is taken to cover 78.5 metres square.

Duration of Sprinkler Discharge

A water-rating device shall be installed such that all sprinklers shall discharge at an even rate at alternative cycles throughout the duration of the pumping out of the pump chamber of the AWTS.

Installation of Sprinklers

As the sprinklers form part of the delivery system to dispose of effluent on site they will be required to be installed by a suitably qualified and licensed tradesman.

APPENDIX 3

SUITABLE VEGETATION FOR
LAND APPLICATION AREAS

Botanical Name	Approx Height	Common Name or Variety
Trees		
<i>Acacia floribunda</i>	2 - 4 m	Gossamer Wattle
<i>Angophora floribunda</i>	Large tree	Rough Bark Apple Gum
<i>Callicoma serratifolia</i>	< 4 m	
<i>Casuarina glauca</i>	6 - 12 m	Swamp oak
<i>Elaeocarpus reticulatus</i>	Large tree	Blueberry ash
<i>Eucalyptus amplifolia</i>	Large tree	
<i>Eucalyptus botryoides</i> (coastal areas)	10 - 30	Bangalay
<i>Eucalyptus deanei</i>	Large tree	Blue Mountains blue gum
<i>Eucalyptus longifolia</i>	20 m	Woollybutt
<i>Eucalyptus pilularis</i>	30 - 40 m	Blackbutt
<i>Eucalyptus punctata</i>	< 35 m	Greygum
<i>Eucalyptus robusta</i>	20 - 30 m	Swamp mahogany
<i>Eucalyptus saligna</i> (coastal)	30 - 50 m	Sydney blue gum
<i>Eucalyptus tereticornis</i>	30 - 40 m	Forest red gum
<i>Acmena smithii</i>	10 - 20 m	Lilli pilli
<i>Hymenosporum flavuum</i>	3 - 6 m	Native frangipani
<i>Melaleuca armillaris</i> (coastal)	3 - 4 m	Bracelet honey myrtle
<i>Melaleuca decora</i>	4 - 7 m	
<i>Melaleuca ericifolia</i>	6 m	
<i>Melaleuca linariifolia</i>	4 - 8 m	Snow in summer
<i>Melaleuca quinquenervia</i>	5 - 7 m	Broad paperback
<i>Melaleuca stypheloides</i>	6 - 15 m	
<i>Melia azedarach</i>	15 - 20 m	
<i>Syzygium paniculatum</i>	8 - 10 m	Bush cherry
<i>Viminaria juncea</i>	2 - 3 m	Golden spray
<i>Sloanea australis</i>		Maidens Blush
<i>Cryptocarya glaucescens</i>		
<i>Cryptocarya micronevra</i>		
<i>Endiandra sieberi</i>		
<i>Toona ciliata</i>		Red Cedar
<i>Acacia maidenii</i>		
<i>Acacia longifolia</i> ,		
<i>Ficus rubiginosa</i>		Port Jackson Fig
<i>Ficus coronata</i>		Sand-paper Fig
<i>Ficus macrophylla</i>		Moreton Bay Fig
<i>Rapanea howittiana</i>		
<i>Rapanea variables</i>		
<i>Rhodmanian rubesceus</i>		
<i>Syncarpia glomulifera</i>		Turpentine
<i>Tristoniopsis laurina</i>		Water Gum
<i>Alphitonia excelsa</i>		Red Ash

Botanical Name	Approx Height	Common Name or Variety
<i>Brachychiton acerifolius</i>		Flame tree
<i>Livistona australis</i>		Cabbage Tree Palm
<i>Archontophoenix cunninghamiana</i>		Bangalow Palm
Shrubs		
<i>Baekea linifolia</i>	1 – 2.5 m	
<i>Baekea virgata</i>	< 4 m	
<i>Banksia robur</i>	0.5 – 2 m	
<i>Bauera ruboides</i>	0.5 – 1.5 m	
<i>Callistemon citrinus</i>	50 – 80 cm	Austraflora Firebrand
<i>Callistemon linearis</i>	1 – 3 m	
<i>Callistemon pallidus</i>	1.5 – 4 m	
<i>Callistemon paludosus</i>	3 – 7 m	
<i>Callistemon pinifolius</i>	1 – 3 m	
<i>Callistemon rigidus</i>	1.5 – 2.5 m	
<i>Callistemon salignus</i>	3 – 10 cm	
<i>Callistemon shiresii</i>	4 – 8 m	
<i>Callistemon sieberi</i>	1.5 – 2 m	
<i>Callistemon subulatus</i>	1 – 2 m	
<i>Goodenia ovata</i>	1 – 1.5 m	
<i>Hibiscus diversifolius</i>	1 – 2 m	Swamp hibiscus
<i>Kunzea capitata</i>	1 – 2 m	
<i>Leptospermum flavescens</i>	< 2 m	Tea-tree
<i>Leptospermum juniperinum</i>	1 m	Tea-tree
<i>Leptospermum squarrosum</i>	< 2 m	Tea-tree
<i>Melaleuca squamea</i>	1 – 2 m	
<i>Melaleuca thymifolia</i>		
Grasses		
<i>Carex spp.</i>		
<i>Lomandra longifolia</i>		
<i>Microlaena stipoides</i>		
<i>Oplismenus imbecillis</i>		
<i>Poa lab</i>		
<i>Stipa spp.</i>		
Ground cover/climbers		
<i>Hibbertia scandens</i>		
<i>Kennedia rubicunda</i>		Snake vine
<i>Scaevola ramosissima</i>	Climber	Dusky coral pea
<i>Veronica plebeia</i>		
<i>Viola hederacea</i>		Native violet

Botanical Name	Approx Height	Common Name or Variety
Sedges/ grasses/ small plants		
<i>Baumea articulata</i>	Sedge	
<i>Baumea juncea</i>	Sedge	
<i>Baumea rubiginosa</i>	Sedge	
<i>Baumea teretifolia</i>	Sedge	
<i>Blandfordia grandiflora</i>	30-90 cm	Christma Bell
<i>Blandfordia nobilis</i>	30-90 cm	Christmas Bell
<i>Brachyscome diversifolia</i>	Clump	Native Daisy
<i>Carex appressa</i>	Sedge	
<i>Crinum pedunculatum</i>	< 2 m	Swamp Lily
<i>Dianella caerulea</i>	Low plant	Blue Flax Lily
<i>Gahnia</i> spp.	Tall Grass	Native Iris
<i>Juncus</i> spp.	0.5 m Rush	Native Iris
<i>Patersonia fragilis</i>		
<i>Patersonia glabrata</i>		
<i>Restio Australia</i>	Reed	Rush Lily
<i>Restio tetraphyllus</i>	1 m	Tall Yellow Eye
<i>Sowerbaea juncea</i>	Sedge	
<i>Xyris operculata</i>	< 1 m	

**APPENDIX 4
RISK ASSESSMENT FORM.**

(SAMPLE ONLY)

RISK ASSESSMENT CATEGORIES (*circle below, note U = Unknown*)

Criteria	Low	Medium	High	Comment
Is the property on which the sewage management system is proposed within an environmentally sensitive area	No	No	Yes	
What is the size of property on which the sewage management system is to be installed (hectares) (1 hectare = 2.47 acres).	Greater than 1	Between 1 and 0.5	Less than 0.5	
Is the proposed location of the sewage management system within a flood zone	Flood free	1 in 100 year flood zone	1 in 20 year floodzone	
Is the proposed location of the sewage management system within the recommended buffer distances of Table 5 of the Environment and Health Protection Guidelines, 1998 (extract below)	Complies	Does not comply <10% variation	Does not comply > 10% variation	
How many persons is the dwelling to which the sewage management system is connected, calculated to occupy	<8	>8 <10	>10	
What is the depth of the water table at the property.	< 1.5m	< 1.5m	< 1.0m	
Is the development Dual Occupation (i.e., both residences to one tank)?	No	Yes	Yes	
Risk Assessment Summary	HIGH 1	MEDIUM 3	LOW 5	

RECOMMENDED BUFFER DISTANCES FOR ON-SITE SYSTEMS

(*from Table 5 Environment and Health Protection Guidelines, 1998*)

System	Recommended Buffer Distances
All land application areas	<ul style="list-style-type: none"> • 100m to permanent surface waters (eg river, streams, lakes etc), • 250m to domestic groundwater well, • 40m to other waters (eg farm dams, intermittent waterways and drainage channels).
Surface spray irrigation	<ul style="list-style-type: none"> • 6m if area up-gradient and 3m if area, down gradient of driveways and property boundaries, • 15m to dwellings, • 3m to paths and walkways, • 6m to swimming pools.
Surface drip and trickle irrigation	<ul style="list-style-type: none"> • 6m if area up-gradient and 3m if area down gradient of swimming pools, property boundaries, driveways and buildings.
Subsurface irrigation	<ul style="list-style-type: none"> • 6m if area up-gradient and 3 m if area down gradient of swimming pools, property boundaries, driveways and buildings.
Absorption System	<ul style="list-style-type: none"> • 12m if area up-gradient and 6m if down gradient of property boundary

- | | |
|--|---|
| | <ul style="list-style-type: none">• 6m if area up-gradient and 3m if area down gradient of swimming pools, driveways and buildings. |
|--|---|

**APPENDIX 5
MODEL SITE REPORT**

1. SITE EVALUATION	
Company _____	Names _____
Address _____ _____	
Phone _____	Fax: _____
Date of Assessment: _____	Signature of evaluator: _____ Date: _____
2. SITE INFORMATION	
Address/locality of site _____	Council area _____
Owner/developer: _____ _____	Phone: _____
Address: _____ _____	
Size/shape/layout	
Site plans attached	
Photograph attached	YES/NO
Intended water supply	Rainwater Reticulated water supply bore/groundwater
Expected wastewater quantity (litres/day)	
Local experience (information attached regarding on-site sewage management systems installed in the locality)	YES/NO

IF ANY SITE OR SOIL FEATURES HAVE NOT BEEN ASSESSED,NOTE WHY	
3. SITE ASSESSMENT	
Climate	
Are low temperatures expected (particularly below 15°C)?	YES/NO
Where appropriate:	
Rainfall water balance attached	YES/NO
Land application area calculation attached	YES/NO
Wet weather storage area calculation attached	YES/NO
Flood potential	
Land application area above 1 in 20 year flood level	YES/NO
Land application area above 1 in 100 year flood level	YES/NO
Electrical components above 1 in 100 year flood level	YES/NO
Exposure	
Slope	
Landform	
Run-on and seepage	
Erosion potential	
Site Drainage	
Fill	
Groundwater	
(m) Horizontal distance to groundwater well used for domestic water supply	
Relevant groundwater vulnerability map referred to?	YES/NO/NOT AVAILABLE
Level of Protection (I-VI)	
Bores in the area and their purpose:	
Buffer distances from wastewater	
Management system to:	
Permanent waters (m)	
Other waters (m)	
Other sensitive environments (m)	
Boundary of premises (m)	
Swimming pools (m)	
Buildings (m)	
Is there sufficient land area available for:	
Application system (including buffer distances)	
Reserve application system (including buffer distances)	
Surface rocks	

4. SOIL ASSESSMENT	
Depth to bedrock or hardpan (m)	
Depth to high soil watertable (m)	
Hydraulic loading rate (where applicable)	
Soil structure:	_____
Soil texture:	_____
Permeability category:	_____
Other measures of soil permeability:	_____
Hydraulic loading recommended for soil absorption system (mm/day):	_____
Reasons for the hydraulic loading recommended:	_____
Coarse fragments (%)	
Bulk density (and texture) (g/cm ³)	
pH	
Electrical conductivity (dS/m)	
Exchangeable sodium percentage	
Cation exchange capacity (cmol+/kg)	
Phosphorus sorption index	
Geology & soil landscape survey	
Presence of discontinuities	_____
Presence of fractured subsoil	_____
Soil and Landscape map reference:	_____
Dispersiveness	

5. SYSTEM SELECTION	
Consideration of connection to a centralised sewerage system.	
Approximate distance to nearest feasible connection point:	_____
Potential for future connection to centralised sewerage:	High/Med/Low
Potential for future connection to reticulated water:	High/Med Low/already connected
Type of land application system considered best suited to site?	_____
Why?	_____ _____ _____
Type of treatment system considered best suited to site and application system?	_____

Why? _____

6. GENERAL COMMENTS	YES	NO
Are there any specific environmental constraints?		
Are there any specific health constraints?		
Any other comments? _____ _____ _____ _____		

APPENDIX 6

STANDARD CONDITIONS

(SAMPLE ONLY -)

INSTALLATION OF A SEWAGE MANAGEMENT SYSTEM

Reason: The objectives of the following conditions are to ensure that a safe and healthy environment is maintained at all times for both occupants of the premises and the local environment.

- 1** The proposed septic system is to be installed in accordance with the NSW Department of Local Government Environmental Health Guidelines, NSW Department of Health Guidelines and AS 1547-2000.
- 2** Installation of the plumbing and drainage shall be carried out by persons licensed by the Department of Fair Trading.
- 3** The Septic Tank shall be located no closer than 1.5 metres to any building or 1.0 metres to any allotment boundary.
- 4** The effluent shall be by spray irrigation to an area not less than ... m² of lawn or garden area.
- 5** There shall be no irrigated effluent water run-off from the allotment to adjoining properties, public places or reserves. Discharge or run-off into stormwater easements or other drainage channels is strictly prohibited. All effluent must be disposed of within the boundaries of the property.
- 6** Should more than one disposal area be used, the owner of the premises shall be provided, by the installation firm, with an instruction sheet or manual, showing the position of delivery lines and the setting valves necessary to allow the alternate use of areas. The system should include, where determined necessary, adjustable pressure limiting devices. The valve system shall be designed to ensure that at least one irrigation area is available for use at all times.
- 7** The owner shall maintain the irrigation area with adequate vegetative cover, eliminate weeds, maintain plants and shrubs. The irrigation system and fittings must also be maintained in a serviceable condition at all times.
- 8** Recreational lawn areas shall not be used for the disposal of effluent from septic tank systems.
- 9** Irrigation distribution pipelines and fittings are not to be compatible with taps fitted to the household water supply. Soaker hoses, garden sprinklers and standard water hoses and fittings are not acceptable.

- 10 The effluent delivery line shall be made of durable material and placed at least 100mm under the finished ground surface. In the disposal area the effluent can be distributed by the use of drip feed irrigation fittings, or low volume, low pressure spray irrigation heads.
- 11 The owner shall enter into a service contract with the manufacturer, distributor, or their agents, or any other person so authorised in writing by the Council, for the servicing of the Septic Tank with Treatment Plant at quarterly intervals.
- 12 An operator's manual, incorporating a service record is to be provided for the Septic Tank with Treatment Plant. The date of each service shall be entered on the record sheet.
- 13 Along the boundary of the surface irrigation there shall be at least two (2) warning signs clearly visible to inform that recycled water is used for irrigation. Each sign shall comply with AS 1319 and have
 - (a) lettering visible at 3m, and
 - (b) wording: Recycled Water
Avoid Contact
Do Not Drink
- 14 The service contractor shall make adjustments to each unit, its ventilation and irrigation systems, when directed to do so by the Department of Health, NSW or Council.
- 15 A copy of any service record sheet shall be forwarded by the owner to Council within seven (7) days of each service in any instance where the service report indicates non-compliance with the Local Government (Approvals) Regulations, 1999 or non-compliance with any conditions of this consent.
- 16 Cattle grazed on the area irrigated with effluent water are to be slaughtered only at an abattoir where meat inspection by authorised meat inspectors is carried out.
- 17 No fruit or salad vegetables shall be irrigated with effluent from the Septic Tank with Treatment Plant.
- 18 The installation is to be maintained at all times free of nuisance in accordance with conditions of approval.
- 19 The Septic Tank with Treatment Plant shall not be used until a satisfactory final inspection has been carried out by an Officer of the Council.

- 20 The yard or garden areas of the allotment shall be turfed and/or landscaped to the satisfaction of Council before the Septic Tank effluent is used for irrigation purposes.**

The area must be contained by basic landscaping and have a minimum depth of 100mm of good friable soil capable of retaining moisture. Where the disposal area is on rock or where there is danger of effluent escaping from the area, impermeable membranes or other earthworks to contain the effluent shall be used.

Alternatively, the disposal area may be covered with 100mm depth of pine bark or similar material and plants and shrubs with a known property for taking up water should be planted.

- 21 Prior to commencement of the installation of the Septic Tank with Treatment Plant and Plumbing and Drainage, the owner shall advise Council in writing of the name, address and licence number of the contractor.**
- 22 Invert level of the outlet for the septic tank shall be not less than 150mm above the surface level of the transpiration area.**
- 23 Septic tank effluent shall discharge to a transpiration area constructed to the size and in the position indicated on the approved plans (details attached).**
- 24 Transpiration areas shall be retained by impervious consolidated clay walls founded on clay or by brick or concrete provided with an impervious clay liner founded on clay.**
- 25 Transpiration areas shall retain all effluent water within the disposal area.**
- 26 Transpiration area shall be enclosed with stockproof fence.**
- 27 Surface and subsurface water to be diverted clear of the transpiration area by drains, banks or walls.**
- 28 Roofwater shall be conveyed by sealed pipeline clear of the transpiration area.**
- 29 Automatic clothes washing machine wastes must not be discharged to the septic tank unless correct detergents are used.**
- 30 The septic tank and transpiration area shall not be used until a satisfactory final inspection has been carried out by an officer of the Council.**

- 31 **Permanent underground electricity supply is to be provided to all electrical components and the complete electrical installation to comply with the requirements of Energy Australia.**

OPERATION OF A SEWAGE MANAGEMENT SYSTEM

Reason: The objectives of the following conditions are to ensure that a safe and healthy environment is maintained at all times for both occupants of the premises and the local environment.

- 32** The system of sewage management must be operated in a manner that achieves the following performance standards:-
- a) the prevention of the spread of disease by micro-organisms,
 - b) the prevention of the spread of foul odours,
 - c) the prevention of contamination of water,
 - d) the prevention of degradation of soil and vegetation,
 - e) the discouragement of insects and vermin,
 - f) ensuring that persons do not come into contact with untreated sewage or effluent (whether treated or not) in their ordinary activities on the premises concerned.
 - g) the minimisation of any adverse impacts on the amenity of the premises and surrounding lands,
 - h) if appropriate, provision for the re-use of resources (including nutrients, organic matter and water).
- 33** A system of sewage management must be operated in accordance with the relevant operating specifications and procedures (if any) for the sewage management facilities used for the purpose and so as to allow the removal of any treated sewage (and any by-product of any sewage) in a safe and sanitary manner.
- 34** Sewage management facilities must be maintained in a sanitary condition and must be operated in accordance with the relevant provisions of the NSW Local Government (Approvals) Regulation, 1999 (as amended).
- 35** A sewage management facility must not discharge into any watercourse or onto any land other than its related effluent application area.
- 36** The conditions (if any) of any certificate of accreditation issued by the Director – General of the Department of Health under the Local Government (Approvals) Regulation, 1999 (as amended) in respect of the plans or designs for any components of the sewage management facilities must be complied with.
- 37** The person operating the system of sewage management must provide details of the way in which it is operated, and evidence of compliance with the relevant requirements of the Local Government (Approvals) Regulation, 1999 (as amended) and of the conditions of approval, whenever the Council reasonably requires the person to do so.

- 38 There is to be no interference with the residential amenity of the area by reason of the emission of any noise, smell, smoke, vapour, fume or otherwise.
- 39 The use and occupation of the premises including all plant and equipment installed therein, shall not give rise to any offensive noise as defined under the Protection of the Environment Operations Act, 1997.
- 40 The on-site waste management system is to be operated in accordance with these conditions of consent and Council's On-Site Sewage Management Strategy, as applicable, and as may be amended by Council from time to time.
- 41 The repair and maintenance of plumbing and drainage lines which may be required from time to time and associated with the on-site waste management system, shall only be carried out by persons licensed by the Department of Fair Trading.
- 42 The on-site waste management system including any associated effluent disposal areas shall be located in its current position on the site and shall not be altered or relocated without the prior approval of Council.
- 43 There shall be no effluent water run-off from the allotment to adjoining properties, public places or reserves. Discharge or run-off into stormwater easements or other drainage channels is strictly prohibited. All effluent must be disposed of within the boundaries of the property.
- 44 Should more than one disposal area be used, the owner of the premises shall be provided, by the installation firm, an instruction sheet or manual showing the position of delivery lines and the setting valves necessary to allow the alternate use of areas. The system should include, where determined necessary, adjustable pressure limiting devices. The valve system shall be designed to ensure that at least one irrigation area is available for use at all times.
- 45 The owner shall maintain any irrigation area or effluent disposal area with adequate vegetative cover, eliminate weeds and maintain suitable plants and shrubs. Any irrigation system and all fittings must also be maintained in a serviceable condition at all times.
- 46 Recreational lawn areas shall not be used for the disposal of effluent from on-site sewage management facilities.
- 47 Irrigation distribution pipelines and fittings are not to be compatible with taps fitted to the household water supply. Soaker hoses, garden sprinklers and standard water hoses and fittings are not acceptable.
- 48 Effluent delivery lines shall be made of durable material and placed at least 100mm under the finished ground surface. In the disposal area the effluent can be distributed by the uses of drip feed irrigation fittings, or low volume, low pressure

spray irrigation heads.

- 49 The owner shall enter into a service contract or other such arrangement as may be deemed appropriate for the type of system, with the manufacturer, distributor, or their agents, or any other person so authorised in writing by the Council, for the servicing of the on-site sewage management facility at regular intervals.
- 50 An operator's manual, incorporating a service record is to be provided for the on-site sewage management facility. The date of each service shall be entered on the record sheet.
- 51 Along the boundary of any surface irrigation system there shall be at least two (2) warning signs clearly visible to inform that recycled water is used for irrigation. Each sign shall comply with AS1319 and have:-
- a) lettering visible at 3m, and
 - b) wording: Recycled Water
Avoid Contact
Do Not Drink
- 52 The owner or the service contractor shall make adjustments to each unit, its ventilation and irrigation systems, when directed to do so by the NSW Department of Health, or Council.
- 53 A copy of any service record sheet shall be forwarded by the owner to Council within seven (7) days of each service in any instance where the service report indicates non-compliance with the Local Government (Approvals) Regulations, 1999 or non-compliance with any conditions of this consent.
- 54 Cattle grazed on any area irrigated with effluent water are to be slaughtered only at an abattoir where meat inspection by authorised meat inspectors is carried out.
- 55 No fruit or salad vegetables shall be irrigated with effluent from an on-site sewage management facility.
- 56 The installation is to be maintained at all times free of nuisance in accordance with conditions of approval.
- 57 Automatic clothes washing machine wastes should not be discharged to the on-site sewage management system unless correct detergents are used.
- 58 **ADVISORY NOTE:** A person who purchases (or otherwise acquires) land on which any sewage management facilities are installed may operate a system of sewage management without the approval required under the Local Government Act for

the period of three (3) months after the date on which the land is transferred or otherwise conveyed to the person (whether or not an approval is in force, as at that date, in relation to the operation of a system of sewage management on that land).

Further, if the person duly applies, within the period of two (2) months after the date on which the land is transferred or otherwise conveyed to the person, for approval to operate the system of sewage management concerned, the person may continue to operate that system of sewage management without approval until the application is finally determined.

APPENDIX 7 MAITLAND CITY COUNCIL SEWAGE MANAGEMENT FACILITY - AUDIT REPORT

File No's:
Date: Officer:
Prop address:
Owner/s: Ph:
Lessee (if applicable): Ph:

Comments:

.....
.....
.....
.....

DEVELOPMENT SERVICED BY FACILITY

Type of building :
No of bedrooms or persons serviced:
Water supply: **Reticulated** **Tank**
Additional fixtures:
Dishwasher: **Spa:** **Auto washer:**
Sanitary drainage: **Gully:** **E/Vent:**
All fixtures connected: **Grease trap:**

Comments:

.....
.....
.....
.....

SEWAGE TREATMENT SYSTEM

Type of system: Manufacturer:
Structural damage:Lid sealed: Access:
Leakage:Junctions: Baffle:
Pump/float switch:Inspection caps: Dist/Box:

Sludge Levels:Electrical fittings: Roots:
 Surface water:Odour: Pumpline:
 Sludge:Liquor Cond: Air dispersal:
 Pump Cond:Sludge return: Irrig.chamber:
 Media:Chlorine: Servicing:

Comments:

.....

EFFLUENT DISPOSAL AREA (GENERAL)

What type of effluent disposal system was approved:

What size disposal area was approved:

Is this area still available:

Is disposal area operating satisfactorily:

Runoff/seepage: Proximity to watercourse:

Proximity to environmentally sensitive area:

Diversion drains/stormwater inundation:

Odours: Structures on area:

Buffer distances: Animal/vehicle access:

Trench parallel to contour: Vegetative cover:

Buffer distances: Approved over boundary?

Irrigation pipework: Below ground:

Correct sprinklers: Sprinklers Operating:

Area covered: Vegetative cover:

Warning signs:

Comments:

.....

OPERATION OF A SEWAGE MANAGEMENT SYSTEM - AUDIT REPORT

- 1 Is the system of sewage management being operated in a manner that achieves the following performance standards:-**
- a) the prevention of the spread of disease by micro-organisms,
 - b) the prevention of the spread of foul odours,
 - c) the prevention of contamination of water,
 - d) the prevention of degradation of soil and vegetation,
 - e) the discouragement of insects and vermin,
 - f) ensuring that persons do not come into contact with untreated sewage or effluent (whether treated or not) in their ordinary activities on the premises concerned.
 - g) the minimisation of any adverse impacts on the amenity of the premises and surrounding lands,
 - h) if appropriate, provision for the re-use of resources (including nutrients, organic matter and water)?

Comments:

.....

- 2 Is the system of sewage management being operated in accordance with the relevant operating specifications and procedures (if any) for the sewage management facility and is there provision for the removal of any treated sewage (and any by-product of any sewage) in a safe and sanitary manner?**

Comments:

.....

- 3 Is the sewage management facility being maintained in a sanitary condition and is it operating in accordance with the relevant provisions of the NSW Local Government (Approvals) Regulation, 1999 (as amended)?**

Comments:

.....

4 Is the sewage management facility discharging into any watercourse or onto any land other than its related effluent application area?

Comments:

.....
.....
.....
.....
.....
.....

5 Are the conditions (if any) of any certificate of accreditation issued by the Director – General of the Department of Health under the Local Government (Approvals) Regulation, 1999 (as amended) in respect of the plans or designs for any components of the sewage management facilities being complied with?

Comments:

.....
.....
.....
.....
.....

6 Can the person operating the system of sewage management provide details of the way in which it is being operated, and provide evidence of compliance with the relevant requirements of the Local Government (Approvals) Regulation, 1999 (as amended) and of the conditions of approval, whenever the Council reasonably requires the person to do so?

Comments:

.....
.....
.....
.....
.....

7 Is there any interference with the residential amenity of the area by reason of the emission of any noise, smell, smoke, vapour, fume or otherwise from the sewage management facility?

Comments:

.....
.....
.....
.....
.....

8 Does the use and occupation of the premises including all plant and equipment installed therein, give rise to any offensive noise as defined under the Protection of the Environment Operations Act, 1997?

Comments:

.....
.....
.....
.....
.....
.....

9 Is the on-site waste management system being operated in accordance with these conditions of consent and Council’s On-Site Sewage Management Strategy, as applicable?

Comments:

.....
.....
.....
.....
.....

10 Have any repairs and/or maintenance of plumbing and drainage lines which may have been required from time to time and associated with the on-site waste management system, only been carried out by persons licensed by the Department of Fair Trading?

Comments:

.....
.....
.....
.....
.....

11 Have the on-site waste management system including any associated effluent disposal areas been located in its current position and have any alterations been carried out with the prior approval of Council?

Comments:

.....
.....
.....
.....
.....

12 Is there any effluent water run-off from the allotment to adjoining properties, public places or reserves. Is all effluent being disposed of within the boundaries of the property?

Comments:

.....
.....
.....
.....

.....
.....

13 Where more than one disposal area is being used, has the owner of the premises been provided, by the installation firm, an instruction sheet or manual showing the position of delivery lines and the setting valves necessary to allow the alternate use of areas? Does the system include, where determined necessary, adjustable pressure limiting devices? Is the valve system designed to ensure that at least one irrigation area is available for use at all times?

Comments:

.....
.....
.....
.....
.....

14 Has the owner maintained any irrigation area or effluent disposal area with adequate vegetative cover, eliminated weeds and maintained suitable plants and shrubs? Has the irrigation system and all fittings been maintained in a serviceable condition at all times?

Comments:

.....
.....
.....
.....
.....

15 Are any recreational lawn areas being used for the disposal of effluent from the on-site sewage management facility?

Comments:

.....
.....
.....
.....
.....

16 Are any irrigation distribution pipelines and fittings compatible with any taps or outlets fitted to the household water supply? Are any soaker hoses, garden sprinklers and standard water hoses and fittings being used?

Comments:

.....
.....
.....
.....
.....

17 Are effluent delivery lines made of durable material and placed at least 100mm under the finished ground surface? In the disposal area, is the effluent distributed by the uses of drip feed irrigation fittings, or low volume, low pressure spray irrigation heads?

Comments:

.....
.....
.....
.....
.....
.....

18 Has the owner entered into a service contract or other such arrangement as may be deemed appropriate for the type of system, with the manufacturer, distributor, or their agents, or any other person so authorised in writing by the Council, for the servicing of the on-site sewage management facility at regular intervals?

Comments:

.....
.....
.....
.....
.....
.....

19 Is there an operator’s manual, incorporating a service record, provided for the on-site sewage management facility? Has the date of each service been entered on the record sheet?

Comments:

.....
.....
.....
.....
.....
.....

20 Along the boundary of any surface irrigation system are there at least two (2) warning signs clearly visible to inform that recycled water is being used for irrigation? Does each sign comply with AS1319 and have:-

- a) lettering visible at 3m, and**
- b) wording: Recycled Water**
 - Avoid Contact**
 - Do Not Drink**

Comments:

.....
.....
.....
.....

.....
.....

21 Has the owner or the service contractor made any adjustments to each unit, its ventilation and/or irrigation systems, when directed to do so by the NSW Department of Health, or Council.

Comments:

.....
.....
.....
.....
.....

22 Has a copy of any service record sheet been forwarded by the owner to Council within seven (7) days of each service in any instance where the service report indicates non-compliance with the Local Government (Approvals) Regulations, 1999 or non-compliance with any conditions of consent?

Comments:

.....
.....
.....
.....
.....

23 Are any cattle grazed on any area irrigated with effluent water slaughtered only at an abattoir where meat inspection by authorised meat inspectors is carried out?

Comments:

.....
.....
.....
.....
.....

24 Are any fruit or salad vegetables irrigated with effluent from an on-site sewage management facility?

Comments:

.....
.....
.....
.....
.....

25 Is the installation maintained at all times free of nuisance in accordance with conditions of approval?

Comments:

.....
.....

.....
.....
.....
.....

26 Are correct detergents are being used where automatic clothes washing machine wastes are being discharged to the on-site sewage management system?

Comments:

.....
.....
.....
.....
.....

27 ADVISORY NOTE: A person who purchases (or otherwise acquires) land on which any sewage management facilities are installed may operate a system of sewage management without the approval required under the Local Government Act for the period of three (3) months after the date on which the land is transferred or otherwise conveyed to the person (whether or not an approval is in force, as at that date, in relation to the operation of a system of sewage management on that land).

Further, if the person duly applies, within the period of two (2) months after the date on which the land is transferred or otherwise conveyed to the person, for approval to operate the system of sewage management concerned, the person may continue to operate that system of sewage management without approval until the application is finally determined.