

Submission

No 14

INQUIRY INTO MANAGEMENT OF DOMESTIC WASTEWATER

Organisation: Eurobodalla Shire Council

Name: Ms Deborah Lenson

Date Received: 16/12/2011

Our Ref: E98.2476
Your Ref: LAC11/231



EUROBODALLA SHIRE COUNCIL

15 December 2012

PO Box 99 Moruya NSW 2537

email: council@eurocoast.nsw.gov.au

website: www.esc.nsw.gov.au

DX 4873

Chris Patterson MP
Parliament of New South Wales
Macquarie Street
SYDNEY NSW 2000

Dear Sir

Re: Inquiry into the Management of Domestic Wastewater

Eurobodalla Shire Council welcomes the opportunity to respond to the inquiry and accordingly our submission is attached.

If you require further details please contact Rebecca Hardwick on (02) 4474 7413.

Yours faithfully

Deborah Lenson
Divisional Manager Environmental Services



Inquiry into the Management of Domestic Wastewater

SUBMISSION

EUROBODALLA SHIRE COUNCIL

December 16, 2011

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SUBMISSION

Table of Contents

TABLE OF CONTENTS	1
INTRODUCTION	2
1. RISKS.....	2
2. WASTEWATER AND FOOD.....	3
3. GUIDELINES/REGULATIONS.....	3
4. OSMS MONITORING PROGRAM.....	5
5. UNDERSTANDING OF SYSTEMS	7
6. GREYWATER.....	7
7. AERATED WASTEWATER TREATMENT SYSTEMS (AWTS)	8
8. EFFLUENT PUMP-OUT SYSTEMS	10
9. LARGE SYSTEMS (>10 EP)	11
10. PIT TOILETS	11
11. AMENDED SOIL CELLS	12
12. WET COMPOSTING SYSTEMS.....	12
13. BORES	12
CONCLUSION.....	13

Introduction

Eurobodalla Shire Council thanks you for this opportunity to contribute to the discussion on the regulation of domestic on-site sewage management systems in New South Wales. We provide the following comments and suggestions on specific parts of the requirements based on Council's experience in administering on-site sewage management systems and the need to maximise uniformity and consistency in the drafting and the administration of legislation by local authorities.

Eurobodalla Shire Council is a coastal council located on the South Coast of New South Wales. It has a strong reliance on tourism and a significant oyster industry so protection of the waterways and human health is a priority. Since 1998 Council has been active within the community to improve the operation of on-site sewage management systems (OSMS) to manage the risks.

The shire has almost every type of OSMS represented including about 1000 aerated wastewater treatment systems, 3000 septic tanks, 350 effluent pump-out systems, 50 dry composting systems, 35 wet composting systems, 40 sand filters and Wisconsin mounds, and 65 pit toilets.

Restrictions posed in the shire include clay soils with poor nutrient retention; an abundance of waterways and catchments; steep slopes; and land available for development is increasingly marginal. Also, pressure for subdivision of land for development is relying on high-tech solutions which add costs to purchasers as well as not necessarily providing the most sustainable system options.

This report aims to address the issues identified by the OSMS approvals system, Monitoring Program and a review and community consultation undertaken in 2008. By considering these, it is anticipated that updated information, guidelines and legislation become available to local government to enable that the risk to human health and waterways is minimized.

1. Risks

Sewage poses two main known risks:

- i. Pathogenic – such as E. coli, hepatitis, cryptosporidium from either direct contact with sewage (e.g. failing absorption trenching or poorly maintained irrigation systems) or indirect (contamination of groundwater or waterways).
- ii. Nutrients – eutrophication of waterways caused by excessive nutrients resulting in e.g. fish kills, blue-green algae toxins.

However, there is an increasing amount of research also identifying risks such as metals (copper, chromium, mercury) and pharmaceuticals (e.g. hormones, cancer

treatments, caffeine) which are being found in sewage. The amount of risk that these pose at a domestic level is still uncertain.

2. Wastewater and Food

All sources of water for food need to be of potable standard (FSS 3.2.3 cl 4) for food businesses unless the risk is eliminated or reduced to acceptable levels. Currently domestic wastewater treatment systems have not been demonstrated to consistently operate at a level where this occurs. There is also risk posed from groundwater supplies being contaminated and then being used as a potable water supply, either as drinking water or irrigation water for edible plants.

3. Guidelines/Regulations

Eurobodalla Shire Council has an OSMS Code of Practice which amalgamates the relevant literature into a workable document for designers, plumbers, technicians and applicants. The Code of Practice refers back to the following literature and legislation:

- The Local Government Act 1993;
- The Local Government (General) Regulation 2005;
- The Australian/New Zealand Standard AS1547:2000 On-Site Domestic Wastewater Management;
- New South Wales Department of Local Government 1998; Environment and Health Protection Guidelines: On-site sewage management for single households;
- New South Wales Department of Energy, Utilities and Sustainability; NSW Guidelines for Greywater Reuse in Sewered, Single Household Residential Premises 2008.
- New South Wales Department of Local Government 1998; Circular No. 98/28 Preventing Sewage Pollution;
- Environmental Planning and Assessment Act 1979;
- Environmental Planning and Assessment Regulation 2000;
- New South Wales Plumbing and Drainage Code of Practice 2006;
- Australian/New Zealand Standard AS3500:2003 Plumbing and Drainage.

This is a large pool of information, with much of it disparate and contradictory to others which poses difficulties particularly for Council as assessors.

Issues faced by Council when administering the above include:

- a. The two documents of most practical importance (AS1547:2000 and the DLG Environment and Health Protection Guidelines: On-site sewage management

for single households) are 11 and 13 years old respectively and whilst they provide some solid advice and guidance, cannot address new technology and understanding.

- b. There is inconsistent application of the legislation between councils, for example, implementation of OSMS Management Plans or requirements for s68 applications for approval to install and operate a system of sewage management.
- c. There are inadequate provisions within the Local Government Act to be able to act swiftly when an issue is identified and a penalty infringement notice amount of \$330 is not a strong financial incentive to comply. Use of the Protection of the Environment Operations Act 1997 may not always be appropriate legislation as an alternative. A more OSMS-specific Order in s124 of the Local Government Act would be an advantage.
- d. Both NSW Health and the Division of Local Government have been reluctant to provide guidance to Councils (e.g. nutrients, amended soil mounds, wet composting toilets in this Council's experience) leaving under-resourced Councils to make potentially uninformed decisions.
- e. There are no performance standards for systems producing primary treated effluent – in particular suspended solids and the impact that these have on disposal areas. There are three wet composting systems that have been accredited which promote the passage of fines into the disposal area which is contrary to current understanding of keeping solid particles out of this area. Feedback to NSW Health about this issue has been dismissive.
- f. NSW Health's Accreditation Guidelines identifies the following committee:

NSW Department Of Health

NSW Health has established the Wastewater Management Advisory Committee (WMAC) which is responsible to the Department and Director-General in the accreditation process and produces appropriate guidelines. Membership includes representatives from the Environmental Health Branch of NSW Health, Departments of Land and Water Conservation, Local Government, Urban Affairs and Planning, and the Environment Protection Authority; and the Australian Institute of Environmental Health.

This committee has not been convened in the last 5 years at least and it appears that accreditations are being assessed and issued by a single person without consultation.

- g. Avenues for consultation have been generally poor between State Government as well as between Councils, however in southern NSW, a special interest group has been set up by the NSW Health Public Health Unit -

Murrumbidgee & Southern NSW Local Health Districts which has been very beneficial to establishing a common understanding between the councils involved. This unit deserves commendation for their work in establishing and co-ordinating this special interest group.

- h. Eurobodalla Shire is not within the Sydney Water Catchment and therefore is subject to fewer restriction and a lower level of monitoring however it also has fewer resources available to undertake those activities to an equivalent standard.

4. OSMS Monitoring Program

The Eurobodalla Shire Council OSMS Monitoring Program commenced in 1999 with high risk systems (close to waterways) inspected first, followed by medium risk (villages) then low risk (rural). To date, over 4,500 systems have been identified.

Of those inspected by 2003, approximately 75% required work to comply with structural requirements and/or to eliminate unhealthy conditions on site. By 2011, this has dropped to 15% with main non-compliances identified as unapproved greywater disposal; unapproved pit toilets; poor AWTs servicing and poor management of effluent pump-out systems.

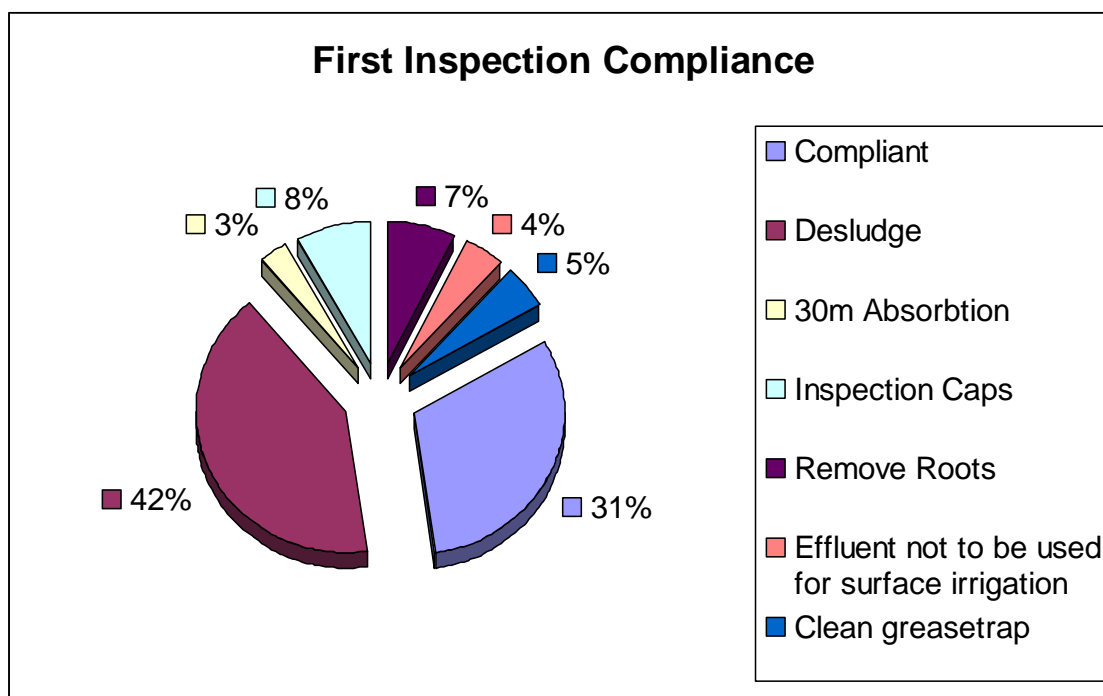


FIGURE 1: FIRST INSPECTION MOST COMMON DEFECTS - 1998-2008



FIGURE 2: NON-COMPLIANT SYSTEMS

5. Understanding of systems

A survey was undertaken by ESC in 2008 of owners of OSMS. There was a response rate of 46% and showed that owners had a good understanding of the operation of their systems however this does not necessarily reflect in the compliance rate. An area of poor understanding is the use and risks associated with greywater (discussed in 6. below). Another is the cumulative effect of systems on the environment.

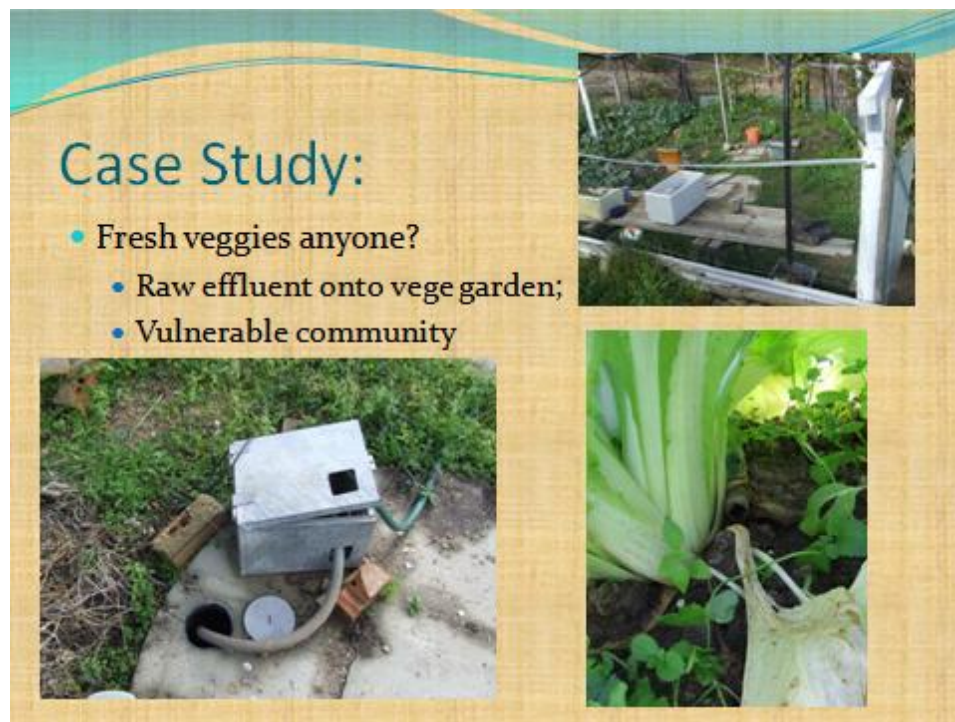


FIGURE 2: CASE STUDY - PUMPING OF RAW EFFLUENT ONTO VEGETABLES IN A CHURCH COMMUNITY GARDEN

6. Greywater

Greywater use, regulation and compliance is one of the biggest issues faced by Council, particularly during the recent drought. The issues include:

- i. Poor understanding in the risks that greywater carry, in particular pathogens and why untreated greywater must be disposed of sub-surface and not onto food crops.
- ii. The difference in requirements between sewerred and unsewerred premises. For an unsewerred premises to dispose of greywater, they are required to apply to Council and include a site and soil evaluation (cost \$600-1500), plus fees as well as the cost of purchasing and installation of the system. For a sewerred premises, if the conditions met for exemption in the Local Government (General) Regulation 75 (a)(2) it is limited to the

cost of the system and its installation with no assessment of its suitability or likely environmental impacts required.

- iii. The ability to purchase greywater diversion hoses and/or diverters with no information on how they are permitted to be used.
- iv. Mixed information given to occupants by various agencies about greywater use
- v. There is strong demand for some food crops to be allowed to be watered with greywater or treated effluent (e.g. fruit trees). What are the risks associated with permitting sub-surface or sub-soil disposal for this purpose?



FIGURE 3: COLLECTION AND STORAGE OF UNTREATED GREYwater FOR IRRIGATION

7. Aerated Wastewater Treatment Systems (AWTS)

AWTS have been operating in this shire for 25 years with varying levels of success, the variations mainly due to owner education and understanding and quality of servicing. An audit done in conjunction with NSW Health in 2010 identified inconsistencies in the level of servicing of the systems and operation of the systems. The main issues identified are:

- i. Regulating of service technicians. There are no regulations requiring service technicians to be qualified, the onus on allowing a technician to service systems lies with individual councils.
- ii. Should a technician be performing poorly, council cannot easily revoke any permissions to operate in the area without being challenged for restraint of trade.
- iii. No follow-up/ongoing testing of systems installed is undertaken to ensure it is meeting performance standards. The NSW Health AWTS Accreditation Guidelines advise that this testing may be required and earlier accreditations did state this. More recent accreditations do not appear to require this. There is therefore no evidence that AWTS are performing to required standards in the long term and under normal operating conditions.
- iv. The level of servicing by technicians varies greatly. Poor servicing places extra costs to the owner for maintenance and increases the risk of coming into contact with untreated effluent.
- v. Technicians and manufacturers are advising customers that the treated effluent is 'so good you could drink it', leading the customers to believe there is no risk involved. Particularly when it comes to irrigation of fruit and vegetable crops.
- vi. There is a gap in the Standards/regulations as to who is able to install the irrigation area. Some manufacturers leave the owner a 'start-up kit' of 20m of pipe and a sprinkler; some agents do the installation as do some plumbers. A requirement that installation of the disposal area be by a licensed plumber/drainier is desirable.



FIGURE 4: A FAILING AWTS - UNSERVICED

- vii. Unclear guidelines on the use of single pipe and moveable sprinklers. This increases the risk of the user coming into contact with effluent and the ability to move the irrigation to unsuitable areas (fruit and vegetable growing areas, watercourses, close to dwellings).



Garden Master Southern Districts Pty Ltd
PO Box 3081 Turrell NSW 2537
Phone (02) 4473 5161
Fax (02) 4473 5762

Quarterly Maintenance Report
05.9560.8

Owner: S. Jones
Cust No: 881
Address: Glen-Dunlop Cr 33153
Date: 21.5.09
Council: ESC

Condition: 5 = Excellent, 1 = Needs Attention

Condition of System	<input checked="" type="checkbox"/>	Water Pump	<input checked="" type="checkbox"/>	Clarification Chamber	<input checked="" type="checkbox"/>
Electrical System	<input checked="" type="checkbox"/>	Sludge Return	<input checked="" type="checkbox"/>	Irrigation Chamber	<input checked="" type="checkbox"/>
Air Blower	<input checked="" type="checkbox"/>	Aeration	<input checked="" type="checkbox"/>	Primary Chamber	<input checked="" type="checkbox"/>
Disposal Field	<input checked="" type="checkbox"/>				

15347

Test Results and Checklist

Alarms Tested	<input checked="" type="checkbox"/>	Clean Air Blower Filter	<input checked="" type="checkbox"/>	Comments
Free Chlorine	0.6	Clean Irrigation Filter	<input checked="" type="checkbox"/>	
PH	7.9	Aqua-vac System	<input checked="" type="checkbox"/>	
Sludge Level	1/4"	Tablets Replaced	<input checked="" type="checkbox"/>	



SOUTH COAST WASTE WATER
A.B.N. 21 064 018 140
PO Box 4054, Nowra East NSW 2541

Quarterly Maintenance Report
82.6595.B
pin - 30395

Owner: ABC
Customer No: 6489
Address: Box 31 Baramba Rd
Date: 16/9/11
Council: ESC

20112

Condition: 5 = Excellent, 1 = Needs Attention

Condition of System	<input checked="" type="checkbox"/>	Water Pump	<input checked="" type="checkbox"/>	Clarification Chamber	<input checked="" type="checkbox"/>
Electrical System	<input checked="" type="checkbox"/>	Sludge Return	<input checked="" type="checkbox"/>	Irrigation Chamber	<input checked="" type="checkbox"/>
Air Blower	<input checked="" type="checkbox"/>	Aeration	<input checked="" type="checkbox"/>	Primary Chamber	<input checked="" type="checkbox"/>
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FIGURE 5: CASE STUDY - NO IRRIGATION INSTALLED – SERVICE AGENT REPORTS ADVISE ALL IS OK

8. Effluent Pump-Out Systems

Effluent pump-out is the system of last resort where on-site sewage treatment and disposal cannot be achieved and reticulated sewer is not available for connection. This system is not considered favourable as it is expensive to operate and can also be open to abuse (such as siphoning of collection wells into street drains and gardens). It also relies upon the trucking out of the effluent to a sewage treatment plant which is not a sustainable practice.

Eurobodalla Shire currently has nine villages, of which only three currently have plans for sewerage. As existing systems fail, owners are required to convert to pump-out. As the

number of pump-outs increase, so does the potential risk of pollution of waterways and/or people coming into contact with untreated effluent from overflowing collection wells or inappropriate use of effluent.

Growth of these villages is also limited as Council policy does not allow subdivision of properties where pump-out will be the only OSMS option. Funding is generally not available for the sewerage of these areas.

9. Large Systems (>10 EP)

Since 2002, NSW EPA returned to Council a number of licenses for properties such as holiday parks where the loading was less than that listed in Schedule 1 of the Protection of the Environment Operations Act 1997 (2,500 persons or 750 kL/day, whichever is the greatest). Because of the location and nature of these systems (generally close to waterways and business is based on visitors rather than permanent residents) they are high risk.

This has resulted in Councils monitoring and regulating these systems with very little training and knowledge as no support was provided by the EPA at the time of handover. Councils are poorly resourced to provide the level of monitoring required for these systems.

Operators of these systems (who may be owners or employees) are not always adequately trained in their operation and there are no training providers providing technical training courses.

10. Pit Toilets

This shire consists of over 80% National Parks and State Forests. There are also numerous remote properties used only on an intermittent basis for camping. In some circumstances pit toilets may be considered a suitable method of sewage disposal. No guidelines exist as to when they may be appropriate.

Prior to 2009 Council policy was to prohibit pit toilets but following a review of the OSMS Code of Practice, they were permitted if they met strict requirements.

Some guidance would be welcomed on the permissibility of these and how to regulate them.



FIGURE 6: PIT TOILET - NOTE RIVER IN THE BACKGROUND

11. Amended Soil Cells

These systems are marketed as a high treatment option suitable for small blocks and high risk properties (close to waterways) and claim a very high level of nutrient removal. However, they are not regulated by NSW Health who advise that they are a disposal system only. This is of serious concern considering the situations where these systems are being used.

12. Wet Composting Systems

Following Biolytix going into receivership in January 2011, the outpouring of issues from stakeholders (such as owners, plumbers and designers) regarding the design of these systems and concerns about the long term sustainability of them is an indication that further investigation is required.

There is demand within the community for these types of system (also known as worm farms) due to their lower electricity usage and ability to also recycle kitchen scraps however if the system and its disposal area are not going to last a reasonable lifetime they cannot be considered a sustainable option.

13. Bores

This is an issue which has been highlighted by the drought. In the licensing of groundwater bores, no information is required or provided about the need to maintain a 250m buffer distance from any effluent management area as required by the Division of Local Government. As a result, bores are being installed very close to disposal areas and there is the risk of contamination of the aquifer by sewage (both pathogenic and by nutrients). Bores have been identified as close as 1m from absorption trenching and yet have been licensed by the NSW Office of Water.

During the drought, rainwater tanks were being topped up by bore water originally intended only for garden and livestock use. The NSW Office of Water does not distinguish between potable and non-potable uses of domestic bores. Also, the use of contaminated bore water on food crops may be as much an issue as is contaminated drinking water.

The regulating and monitoring of bore water and aquifers has not been undertaken at a sufficient level and there is a high risk of an outbreak of food-borne illness resulting from contaminated groundwater supplies.

Conclusion

The re-use of wastewater has become a rising issue as the community becomes more aware of sustainability issues and as living costs rise. However, the inherent risks within wastewater are often not fully understood by those seeking to use it for other purposes.

Of particular concern is the pressure for developable land where reticulated sewerage is not available and increasingly constrained land is being developed. This may be where inappropriate systems are used due to a lack of knowledge, assessment and monitoring, both at the accreditation stage and at the Council assessment stage. The resultant risks include pollution of waterways where contaminated water is used for crop irrigation or for industries such as oyster growing; and the risk of people coming into contact with effluent or sewage which may contain pathogens such as hepatitis and E. coli.

Aerated wastewater treatment systems rely on regular servicing by an experienced person yet the tools are not available to Council to ensure that the quality of servicing meets that required by the system to operate within its accredited performance framework.

There is also a need for a consistent approach regarding wastewater reuse education, particularly in the reuse of greywater and treated wastewater and the risks involved.

Whilst there is a large body of legislation, regulations and guidelines surrounding the treatment of human waste and its disposal, it is disjointed, inconsistently administered and outdated. Eurobodalla Shire Council has undertaken to apply these to the on-site sewage management systems in this area and has been doing so since the introduction of the legislation in 1998. As such, it is hoped that the field knowledge that has been gained over this period will assist the Committee in their Inquiry.