ON-SITE SEWAGE MANAGEMENT SYSTEM

Lot 35 DP 271494
209 Woodbury Ridge
SUTTON NSW

22 July 2024 (V01)

FRANKLIN CONSULTING AUSTRALIA PTY LIMITED

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SOILANDWATER

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Limitations

This report has relied on the information provided by the client prior to this report, and from site investigation as undertaken on a specific date. The results provided are indicative of the sub-surface conditions only at the specific sampling or testing locations, and only to the depths investigated and at the time the inspection was carried out. It cannot be considered that these findings represent the actual state of the site at all points. The accuracy of the report may be limited by undetected variations in ground conditions between sampling locations. Should any site conditions be encountered during construction that vary significantly from those outlined in this report, Franklin Consulting Australia should be advised and further advice sought accordingly.

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CONTENTS

SUMMARY RECOMMENDATIONS

Development: Installation of an Effluent Management System for a new 4-bedroom plus 1-bedroom granny flat on

209 Woodbury Drive,
Woodbury Ridge, Sutton.

Expected wastewater load/day: Daily effluent load is **840L/day** (based on the 4- bedroom dwelling – 5 potential occupants + 1-bedroom granny flat – 2 potential occupants) in accordance with AS1547:2012).

Recommended treatment system: Advanced Secondary Treatment System with Nutrient Reduction (NSW Health Accredited) including disinfection. The treatment system must have a minimum daily treatment capacity of 1,500L/day.

Recommended effluent dispersal system: Treated effluent will be disposed of by a subsoil drip irrigation field applied to an irrigation area of **500m²**.

Fixed or semi fixed surface sprinkler line.

Special considerations: The lot is located in the Special Effluent Management Areas, refer **Figure 1.**

The effluent management system must therefore include a NSW Health Accredited Advanced Aerated Wastewater Treatment System (AWTS) combined with subsurface drip irrigation.

Treatment systems must comply with the Advanced Secondary Effluent Criteria as follows:

TABLE 2.1 (Abrev) AS1546.3:2017
ADVANCED SECONDARY EFFLUENT COMPLIANCE CRITERIA FOR A STS

Parameter	Advanced secondary effluent	
	90% of Samples	Maximum
BOD5	≤ 10mg/L	20 mg/L
TSS	≤ 10 mg/L	20 mg/L
E. coli *	≤ 10 cfu/100mL	30 cfu/100mL
FAC þ	Minimum 0.5 mg/L†	N/A
Turbidity ?	N/A	10 NTU

* Where disinfection is required.
þ Where chlorine disinfection is used.
† Minimum level, not 90% of samples.
? Where UV light is used for disinfection.

REPORT SCOPE AND TECHNICAL REFERENCES

The report assesses land in the vicinity of the proposed development to identify specific areas suited to the on-site disposal of effluent associated with the proposed dwelling.

This involves excluding land with major physical constraints such as steep slopes, rocky outcrops, poor drainage, areas within buffer distances of property boundaries watercourses, storages, flow lines and existing and proposed buildings.

All information required by the approving authority, usually regional Councils, is contained in this report, including suitable types of sewage management systems, management prescriptions, site plan and photographs, with supporting information in this report including nutrient balance and limitation tables.

The report also refers to, or relies on, standards and technical references listed below.

On-site Sewage Management for Single Households (The Silver Book) NSW Govt, 1998.

AS/ANZ Standard 1547:2012 On-site Domestic Wastewater Management.

Designing and Installing On-Site Wastewater Systems: A Sydney Catchment Authority Current Recommended Practice. Sydney Catchment Authority, 2014.

Yass Valley Local Environmental Plan 2013

Soil Landscapes of the Canberra 1:100,000 Sheet. Jenkins, B.R. (2000) Department of Land and Water Conservation, NSW.

LOCATION

Site Location

Figure 1: Woodbury Ridge Estate, Sutton (extract from subdivision plans), Lot 35 highlighted and special effluent management zone area circled.

Landscape

The site is bordered by large rural living lots. The site is moderately sloping approximately 6% downwards to the north. The lot has scattered remnant native vegetation.

Soils

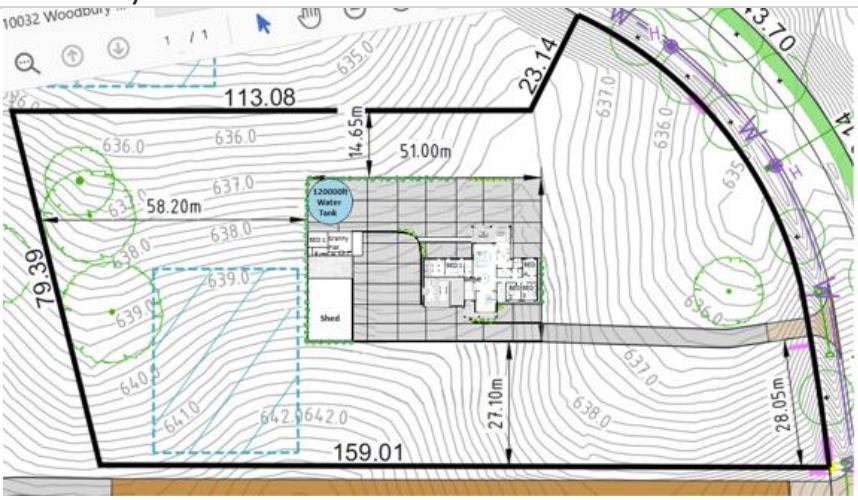
Detailed soil profile descriptions are provided in **Appendix 1** of this report.

Soils on the site are described as Red Chromosols with a characteristic dark brown sandy loam topsoil underlain by silty clay loam then silty clay subsoil. Soil depth is greater than 100cms.

A full soil profile description is provided in **Appendix 1**.

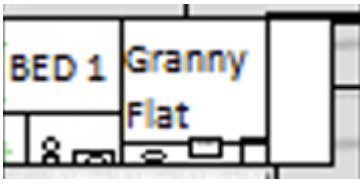
SITE INFORMATION

Address	Lot 35, 209 Woodbury Drive, Sutton.
Owner	Carmen and Jeff Buckley
LGA	Yass Valley Council
Block configuration: plans attached photo attached	



Site plan - Extract from client plans

Floor plan – main dwelling– extract from client plans



Floor plan – granny flat.

Water supply	Non-reticulated - potable water to be supplied by roof catchment with tank storage. Reticulated – non-potable water.
Expected wastewater load (volume in litres/day)	Proposed 4-bedroom dwelling and 1-bedroom granny flat (non-reticulated tank water potable supply) - (as per AS1547:2012). The daily effluent load is based on potential occupancy of 7 persons @ 120L/pp/day. **Design Wastewater Load is 840 L/day.**
Local experience	Most advanced secondary treatment and subsurface drip irrigation systems work adequately in the area provided they are on appropriate soil and site conditions and are properly managed. This type of effluent management system minimises the potential impact to surrounding bores and groundwater resources. Systems need to be maintained regularly, in accordance with council regulations and prescriptions in this report.

Figure 2: Looking north across the effluent irrigation area.

Figure 3: Looking south across the effluent irrigation area.

Figure 4: Looking east across the effluent irrigation area.

Figure 5: Looking west across the effluent irrigation area.

SITE ASSESSMENT

Climate

The climate is typically a cool and moderately dry climate. Average rainfall for the area is 600 – 800 mm. Warm summers with large evaporative deficit, cool winters with small evaporative deficit; median summer monthly rainfall for Canberra airport 49 mm; median monthly winter rainfall 38 mm; mean monthly summer evaporation is 177 mm, mean monthly winter evaporation is 60 mm.

Climate is suitable for the subsurface irrigation of secondary treated effluent.

Rainfall water balance attached	Yes
Land application area calculated	Yes
Wet weather storage calculation attached	NA

Flood potential

land application area above 1:20 year flood:	Yes
land application area above 1:100-year flood:	Yes
electrical components above 1:100-year flood:	Yes

Exposure

Site is cleared with scattered native trees and grassland.

Exposure is suitable for the disposal of secondary treated and disinfected effluent through subsurface irrigation.

Slope

The effluent dispersal site is proposed for a site west of the dwelling on a 4-6% slope.

Slopes are not a constraint to the disposal of secondary treated effluent through subsurface irrigation.

Landform

Slope form of the site is divergent in the proposed effluent disposal areas and suited to the subsurface irrigation.

Landform is suited to the disposal of secondary treated effluent through subsurface irrigation.

Run-on

Run-on water will have a moderate impact on the effluent disposal site and required an upslope diversion bank.

Run-on water is a moderate constraint to effluent disposal on the site to be mitigated by construction of an upslope diversion bank.

Seepage	***No seepage*** was evident on the property.
Erosion potential	The site has no evidence of erosion with an excellent groundcover of perennial pasture. ***The erosion risk will be managed through the maintenance of good groundcover in the effluent dispersal area.***
Site drainage	Site drains through overland flow. There are no defined drainage depressions or dams requiring. ***No drainage buffers are required from effluent dispersal practices.***
Fill	***No fill*** was detected on the property in the proposed effluent dispersal area.
Groundwater	
Horizontal distance to groundwater well used for domestic supply:	There are no known wells used for potable water in the vicinity.
Groundwater vulnerability map category:	The area is mapped as Moderate Groundwater Vulnerability in the Murrumbidgee Catchment Groundwater Vulnerability Map (DLWC)
Bores in area and purpose:	There are 4 bores within 500 metres of the lot. Bore GW403423 has been decommissioned. The closest bore on neighbouring properties is GW401446 which is approximately 285m to the northwest of the lot. This bore is 30m deep with a yield of 10L/sec and no info on water bearing zones. GW401447 is approximately 370m northwest with a depth of 30m and yield of 0.170 L/s.

https://realtimedata.waternsw.com.au/water.stm

Buffer distance from treatment system to

Perennial rivers and creeks:	NA
Drainage depressions:	NA
Other sensitive environments:	250 m (bore)
Dwellings:	15 m
Boundary of premises:	6 m
Swimming pools:	NA
Buildings:	6 m (from upslope buildings)

[Buffers distances as per AS1547:2012]

Is there sufficient land area for

Application system including buffers:	Yes
Reserve application system:	Yes, refer **Figure 6.**

Surface rock outcrop ***No outcropping rock in effluent disposal areas.***

SOIL ASSESSMENT

Depth to bedrock or hardpan:	**> 1.0 m**
Depth to high soil water table:	**>1.5 m**
Hydraulic loading rate Soil texture: Soil structure: Permeability *(from table M1 of AS1547:2012)*: Recommended design loading rate for irrigation system *(from table M1 of AS1547:2012)*:	 **Clay Loam** **Moderate** 0.5 – 3.0 m/day 4 mm/day
Coarse fragments:	5-10%
Bulk density (a):	1.7 – 1.8 t/m^3 in topsoil, 1.5 t/m^3 in subsoil
pH field (a)	5.2 in topsoil, 6.3 in subsoil
Electrical conductivity dS/m (a)	0.05 in topsoil, 0.05 in subsoil
Exchangeable sodium %(a)	5 in topsoil, 10 in subsoil
Cation exchange capacity (mequiv/100g) (a)	4.8 in topsoil, 11 in subsoil
Phosphorous sorption capacity mg/kg (a)	191 (3,438 kg/ha) in topsoil, 503 (7,545 kg/ha) in subsoil
Geological feature Discontinuities: Fractured rock:	 None None
Soil landscape reference (a):	Bywong, Type 1 Profile
Dispersiveness EAT class (a):	2(1) in topsoil, 3(2) in subsoil

(a) extrapolated from Jenkins (2000) *Soil Landscapes of the Canberra 1:100,000 Sheet*. DLWC

SYSTEM SELECTION

Consideration of connection to centralised sewerage system.

Distance:	**>5 kilometres**
Potential for future connection:	**None**
Potential for reticulated water:	**None**

Type of land application system best suited

Subsurface drip irrigation to perennial pastures.

Justification:

Required by Special Effluent Management Zone. Suited to site and soil conditions. Enables beneficial reuse of effluent in a water constrained environment.

Type of treatment system best suited

NSW Health accredited Advanced Secondary Treatment System with a minimum daily treatment capacity of 1,500L/day.

Justification:

Required by Special Effluent Management Zone A reliable system with high quality disinfected effluent then available for beneficial reuse.

EFFLUENT MANAGEMENT PRESCRIPTIONS

Effluent treatment

Effluent will be treated by a NSW Health accredited system capable of meeting the below criteria for Advanced Secondary Treatment

TABLE 2.1 (Abrev) AS1546.3:2017
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Turbidity ?	N/A	10 NTU

* Where disinfection is required.
þ Where chlorine disinfection is used.
† Minimum level, not 90% of samples.
? Where UV light is used for disinfection.

See below link to suitable systems:
http://www.health.nsw.gov.au/environment/domesticwastewater/Pages/default.aspx
The following specific recommendations are made in respect of the AWTS:

1. The model of AWTS should be selected by consultation between the installer and client and considering which model best suits the expected loading and usage patterns and the specific conditions.
2. The final location for the AWTS units should be chosen by the installer, in consultation with the client, and provide a minimum 3 m buffer from the dwelling or other buildings, an indicative location is shown in **Figure 6**.
3. The tank(s) should be installed so that the lid remains at least 100 mm above final ground level to avoid stormwater entering the tank.
4. AWTS tanks should be installed in compliance with the manufacturer's recommendations, 'AS/NZS 3500.2:2003 Plumbing and Drainage Part 2 Sanitary Plumbing and Drainage' and Council requirements.

Effluent dispersal

An area of minimum 500 m^2 will be designated as the effluent irrigation area. Areas suitable for effluent irrigation are identified in **Figure 6**. A reserve effluent irrigation area of equivalent size (500 m^2) should also be identified refer **Figure 6**. Within the designated irrigation area effluent must be dispersed by subsurface drip irrigation.

The following specific recommendations are made in respect of effluent dispersal:

Subsurface Drip Irrigation

1. The irrigation area should be divided into four sections, connected by a valve which permits sections of the irrigation area to be isolated. Half of the irrigation area should be used in the warmer months, October to April, when plants can fully utilise the applied effluent. During the period May to September, both halves should be used as plants cannot fully utilise the moisture.
2. The four sections of the irrigation field should be connected by a sequencing valve (automatic) to distribute flows evenly and sequentially to each field.
3. A high capacity (> 500cm^2 of filterable area) 100-150 micron disc filter should be installed and cleaned a minimum of every three months
4. Air release valves should be installed at high points in the system
5. Pressure compensating subsurface drip line laterals (typically 16mm) with emitters and laterals spaced at 600-1000mm should be buried at 100-150mm in good quality loam soils
6. The irrigation laterals should be able to be isolated from the irrigation field (through a manual valve) to enable the repair of blockages whilst still enabling the remainder of the system to be used.
7. Only subsurface dripline specifically designed for effluent irrigation must be used.
8. A field flush valve must be installed on the return line to facilitate periodic flushing of the system.
9. An additional filter flush valve should be installed downstream of the field flush valve.
10. Suitable perrenial grass/pasture cover will need to be maintained across the 500 m2 area identified for effluent dispersal.
11. Grass/pasture should be slashed when it is >10 cm long.
12. Adequate signage should be installed to indicate that the area is being irrigated with treated effluent.
13. Species suitable for landscaping around the effluent irrigation include Callistemon pallidus, C. palludosis, Kunzea ericoides, K. parvifolia, K. phyllicoides (burgen), Leptospermum continentale (prickly ti tree), L. multicaule, L. flavescens, L. squarrosum, Melaleuca armillaris (honey myrtle), M. decussata, M. squamea, M. thymifolia, M. ericifolia, M. hypericifolia, M. linariifolia.
14. The aerated wastewater treatment system must be serviced regularly to provide adequate treatment and ensure that the

irrigation system does not become clogged with suspended solids or organic material.

15. The following buffers will be applied to the effluent irrigation area: 6m from property boundary, 3/6m from upslope/downslope dwelling and other buildings, 250m from bores.

General

1. Stock and vehicular access must be excluded from the irrigation area as they compact the soil, thereby reducing the infiltration rate and water holding capacity.
2. Water conservation measures should be adopted to the greatest extent possible in the house, particularly in relation to the high water use activities of showering, clothes washing and toilet flushing. AAA+ plumbing appliances and fittings should be used. Measures including use of front-loading washing machines, low volume shower roses and dual flush toilets reduce water usage by 30 to 40%.
3. Detergents low in phosphorous and sodium should be used as much as possible (see details in appendix) in order to protect the soil's capacity to absorb water.

Special Conditions

1. The effluent irrigation area needs to be fenced off or otherwise separated from the remaining area of the house yard and surrounding area to prevent access by humans and domestic animals.

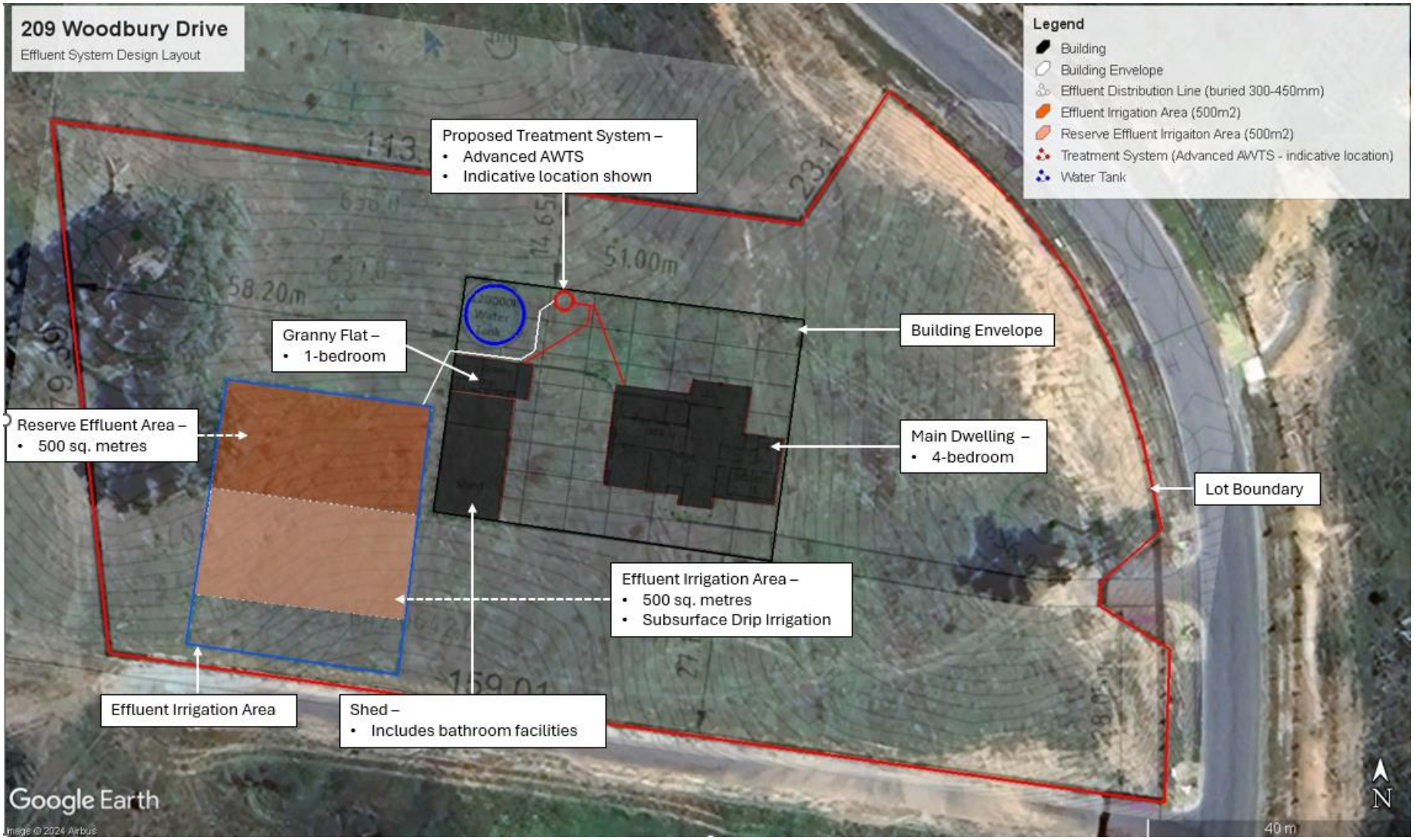

Figure 6: Property Constraints and System Layout

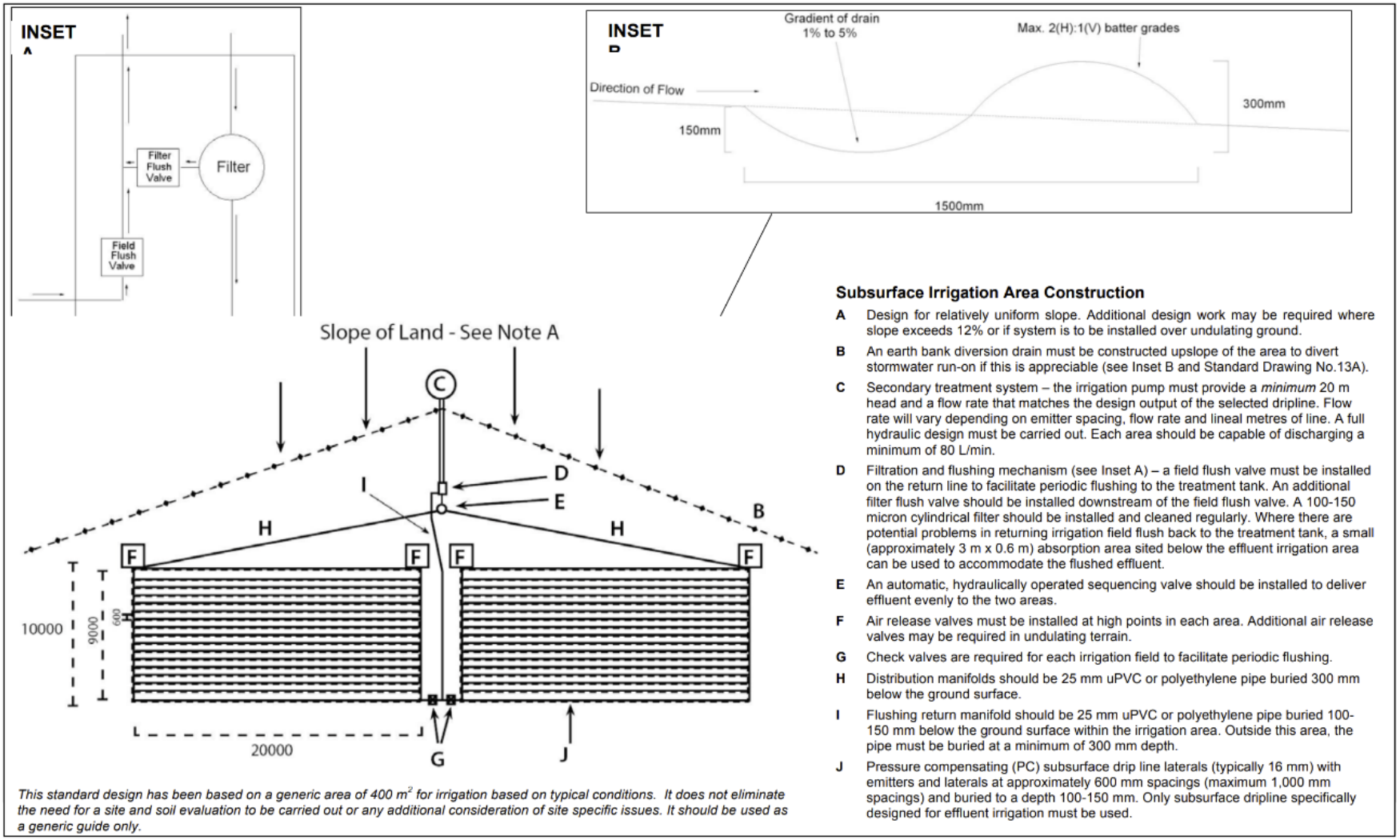

Figure 7: Indicative subsurface drip irrigation design – [NB design is based on area of 400m², the required area for the site is 500 m² – the required area can be achieved by the duplication of the design shown]

SIZING EFFLUENT DISPOSAL AREA

Using the DIR for surface spray or drip irrigation on loam soils of 4 mm/day and design loading of 840 L/day, the following land application areas are required to manage additional hydraulic loading, nitrogen and phosphorous generated.

Water balance

- **Sizing based on hydraulic loading:**

A = Q (l/day)/DIR (mm/day)
where A = area; Q = 840 l/day; DIR = 4 mm/day
A = 840/4 = 210 m^2
Area required =210 m^2

Nitrogen balance

- **Sizing based on nitrogen balance:**

A = Q(l/day) X TN (mg/l)/L_n (critical loading of TN, mg/m^2/day)
where A = area; Q = 840 l/day; TN = 25mg/l (from Silver Book)
Assume 20% loss by denitrification; 25mg/l – (25 X .2) = 20mg/l
L_n = 15,000mg/m^2/yr (ie 150kg/ha/yr, for semi improved pastures)
A = 840 X 20 X 365/15,000 = 408.8 m^2
Area required = 450 m^2

Phosphorous balance

- **Sizing based on phosphorous balance:**

A = P_{gen}/(P_{uptake} + P_{sorb}) [P sorption capacity in upper 50cm & 50 year design period]
P_{gen} = 10mg/l X 840 X 365 X 50 = 153.3kg
P_{uptake} = 4.4mg/m^2/day X 365 X 50= .080kg/m^2 (for semi-improved pastures)
P_{sorb} = 2,500kg/ha = .25kg/m^2
A = 153.3/(.08+ .25) = 464.55 m^2
Area required = 500m^2

Design effluent disposal area

Therefore, a land application area of **500 m^2** will account for phosphorous, nitrogen and water applied based on estimated connections and usage patterns associated with the proposed 4-bedroom house and separate 1-bedroom granny flat.

SITE AND SOIL LIMITATION ASSESSMENT

The following two limitation tables are a standardised guide to the site and soil characteristics which may limit the suitability of the site for effluent disposal and which would require attention through specific management practices. The tables have been reproduced from *On-site Sewage Management for Single Households* (tables 4 and 6, Anon, 1998). The highlighted categories represent site and soil conditions of the land covered in this report. The tables show that the land designated for effluent application has slight to moderate limitations, but no severe limitations.

Site limitation assessment

Site feature	Relevant system	Minor limitation	Moderate limitation	Major limitation	Restrictive feature
Flood potential	All land application systems	> 1 in 20 yrs.		Frequent, below 1 in 20 yrs	Transport in wastewater off site
	All treatment systems	components above 1 in 100 yrs.		Components below 1 in 100 yrs.	Transport in wastewater off site, system failure
Exposure	All land application systems	High sun and wind exposure		Low sun and wind exposure	Poor evapo-transpiration
Slope %	Surface irrigation	0-6	6-12	>12	Runoff, erosion potential
	Sub-surface irrigation	0-10	10-20	>20	Runoff, erosion potential
	Absorption	0-10	10-20	>20	Runoff, erosion potential
Landform	All systems	Hillcrests, convex side slopes and plains	Concave side slopes and foot slopes	Drainage plains and incised channels	Groundwater pollution hazard, resurfacing hazard
Run-on and seepage	All land application systems	None-low	Moderate	High, diversion not practical	Transport of wastewater off site

Site feature	Relevant system	Minor limitation	Moderate limitation	Major limitation	Restrictive feature
Erosion potential	All land application systems	No sign of erosion potential		Indications of erosion e.g. rills, mass failure	Soil degradation and off-site impact
Site drainage	All land application systems	No visible signs of surface dampness		Visible signs of surface dampness	Groundwater pollution hazard, resurfacing hazard
Fill	All systems	No fill	Fill present		Subsidence
Land area	All systems	Area available		Area not available	Health and pollution risk
Rock and rock outcrop	All land application systems	<10%	10-20%	>20%	Limits system performance
Geology	All land application systems	None		Major geological discontinuities, fractured or highly porous regolith	Groundwater pollution hazard

Soil limitation assessment

Soil feature	Relevant system	Minor limitation	Moderate limitation	Major limitation	Restrictive feature
Depth to bedrock	Surface and sub surface irrigation	> 1.0	0.5-1.0[1]	< 0.5	Restricts plant growth
or hardpan (m)	Absorption	> 1.5	1.0-1.5	< 1.0	Groundwater pollution hazard
Depth to seasonal water table (m)	Surface and sub surface irrigation	> 1.0	0.5-1.0	< 0.5	Groundwater pollution hazard
	Absorption	> 1.5	1.0-1.5	< 1.0	Groundwater pollution hazard
Permeability	Surface and sub surface irrigation	2b, 3 and 4	2a, 5	1 and 6	Excessive runoff and waterlogging
Class	Absorption	3, 4		1, 2, 5, 6	Percolation
Coarse fragments %	All systems	0-20	20-45	>40	Restricts plant growth, affects trench installation
Bulk density (g/cc) **SL** **L, CL** **C**	All land application systems	 < 1.8 < 1.6 < 1.4		 > 1.8 > 1.6 >1.4	restricts plant growth, indicator of permeability
pH	All land application systems	> 6.0	4.5-6.0	-	Reduces plant growth
Electrical conductivity (dS/m)	All land application systems	<4	4-8	>8	Restricts plant growth

[1] Surface spray irrigation will be best suited to the limited soil depth

Soil feature	Relevant system	Minor limitation	Moderate limitation	Major limitation	Restrictive feature
Sodicity (ESP)	Irrigation 0-40cm; absorption 0-1.2mtr	0-5	5-10	> 10	Potential for structural degradation
CEC mequiv/100g	Irrigation systems	> 15	5-15	< 5	Nutrient leaching
P sorption kg/ha	All land application systems	> 6000	2000-6000	< 2000	Capacity to immobilise P
Aggregate stability	All land application systems	Classes 3-8	class 2	class1	Erosion hazard

Appendix 1: Soil Profile Description

Soil Profile 1: Within effluent irrigation area (refer Figure 6 for location).

Soil classification	Depth (cm)	Properties
RED CHROMOSOL	0-20 20->100	A Brown sandy loam, moist and friable, massive to weak structure, <5% coarse fragments as stones 5-15mm. B Brown/red sandy clay loam, moist and friable, moderate structure, <5% coarse fragments as stones 10-25mm.

Figure 8: Soil profile 1 – effluent irrigation area.

Appendix 2: Supporting information

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Soil Scientists and Environmental Engineers

Lanfax Laboratories

Proficiency tested with Aust. Soil & Plant Analysis Council

LAUNDRY PRODUCTS RESEARCH

The data, from which the graph on the reverse of this page was produced, were from research financed and undertaken by Lanfax Laboratories in July 1999, independent of any other organisation.

A range of laundry products was purchased from the local supermarkets comprising 20 liquid and 40 powder products. The selection covered the major brands, as determined from previous research, but included some lesser known brands, and five dishwashing detergents.

For each of the detergents, the mass of a 40 mL freshly poured sample was determined. Using the manufacturers' recommended loading rates for an average wash in a top loading automatic washing machine, an equivalent weight of each product was mixed with water from a rainwater system to represent the recommended dose of product with the full water load, that is, 160 litres of wash, rinse, deep rinse and spin cycle.

The samples were shaken for 1 hour at room temperature and the concentration of each of the elements of interest determined at the University of New England using an Inductively Coupled Plasma (ICP). Other chemical properties were measured by Lanfax Labs.

Only the sodium and phosphorus results are reported here. Other information from the research is available at our web site:

www.lanfaxlabs.com.au/publications.html

PATTERSON, R.A. (2000). *Water Quality Relationships with Reuse Options*. in 3rd International Symposium on Waste Water Reclamation, Recycling and Reuse. 3-5 July 2000. Paris France. International Water Association .Preprint Book 8, pp 205-212.

and

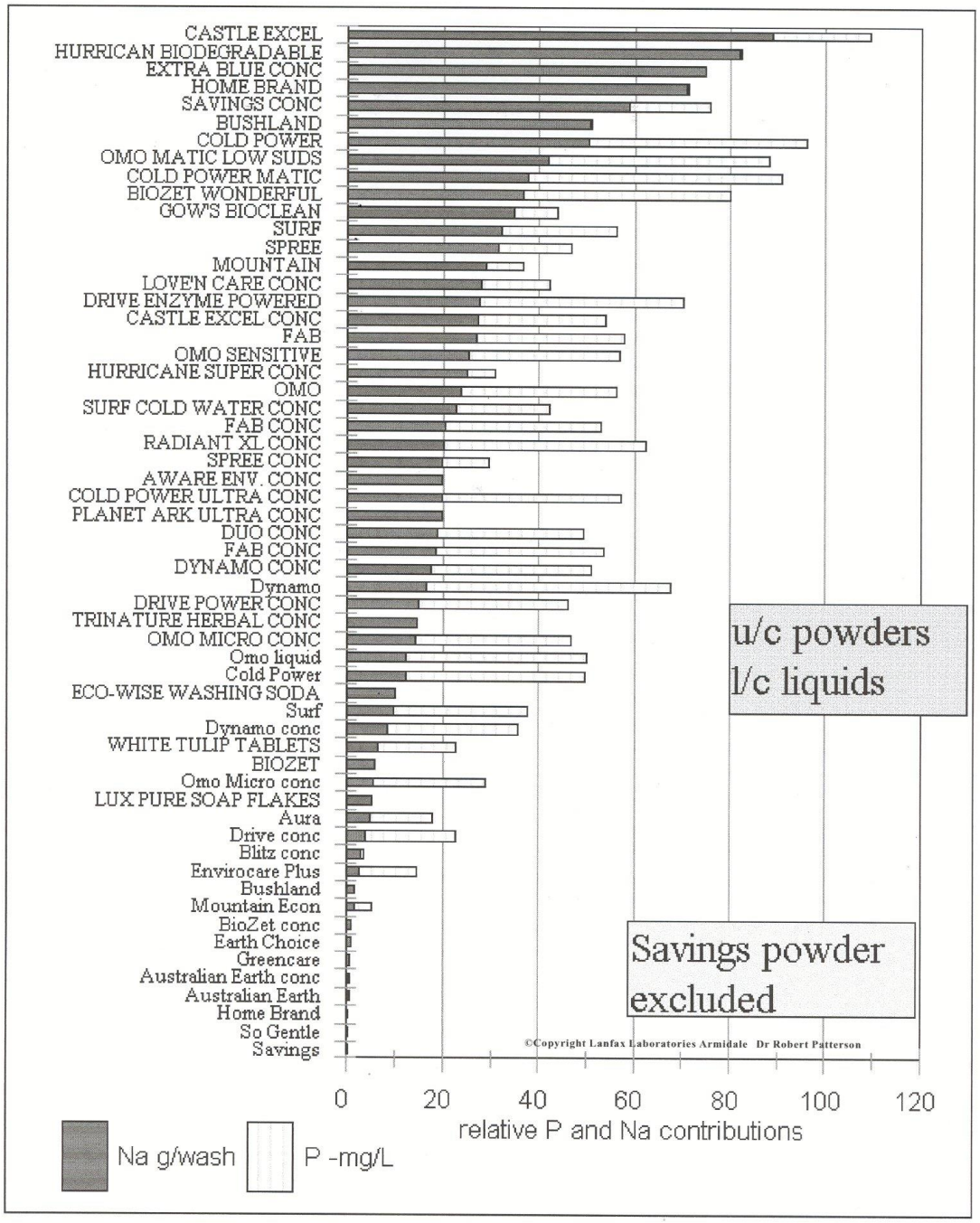
PATTERSON, R.A. (1999) *Reuse Initiatives Start in the Supermarket.* NSW Country Convention. Institution of Engineers Australia. 6-8 August 1999. Northern Group, Institution of Engineers Australia, Armidale.

How to read this graph:
For all on-site systems that apply the effluent by surface or subsurface application, the levels of sodium are critical. Choose the product with the lowest sodium. Levels over 20 g/wash are likely to be detrimental to plants and the soil.

The levels of phosphorus will depend upon the soil type and the use of the effluent. In some soils, phosphorus is not a real concern because it is immobile. In other soils it is likely to build up to high levels. It is preferable to choose the lower phosphorus values as well as the low sodium.

The detergents with long sodium bars (greater than 20 g/wash) should not be thrown out on your favourite garden as the sodium may be detrimental to the plants. High pH is also detrimental to plants and soils.

Figure 1. Ranking of laundry products according to sodium concentration with phosphorus concentration shown as tail. Ideal choice for on-site systems is one with a low sodium and a low phosphorus concentration.



DO

- ✓ Learn how your sewage management system works and its operational and maintenance requirements.
- ✓ Learn the location and layout of your sewage management system.
- ✓ Have your AWTS (if installed) inspected and serviced four times per year by an approved contractor. Other systems should be inspected at least once every year. Assessment should be applicable to the system design.
- ✓ Keep a record of desludgings, inspections, and other maintenance.
- ✓ Have your septic tank or AWTS desludged every three years to prevent sludge build up, which may 'clog' the pipes.
- ✓ Conserve water. Conservative water use around the house will reduce the amount of wastewater which is produced and needs to be treated.
- ✓ Discuss with your local council the adequacy of your existing sewage management system if you are considering house extensions for increased occupancy.

DON'T

- ✗ Don't let children or pets play on land application areas.
- ✗ Don't water fruit and vegetables with effluent.
- ✗ Don't extract untreated groundwater for cooking and drinking.
- ✗ Don't put large quantities of bleaches, disinfectants, whiteners, nappy soakers and spot removers into your system via the sink, washing machine or toilet.
- ✗ Don't allow any foreign materials such as nappies, sanitary napkins, condoms and other hygiene products to enter the system.
- ✗ Don't put fats and oils down the drain and keep food waste out of your system.
- ✗ Don't install or use a garbage grinder or spa bath if your system is not designed for it.

Reducing water usage

Reducing water usage will lessen the likelihood of problems such as overloading with your septic system. Overloading may result in wastewater backing up into your house, contamination of your yard with improperly treated effluent, and effluent from your system contaminating groundwater or a nearby waterway.

Your sewage management system is also unable to cope with large volumes of water such as several showers or loads of washing over a short period of time. You should try to avoid these 'shock loads' by ensuring water use is spread more evenly throughout the day and week.

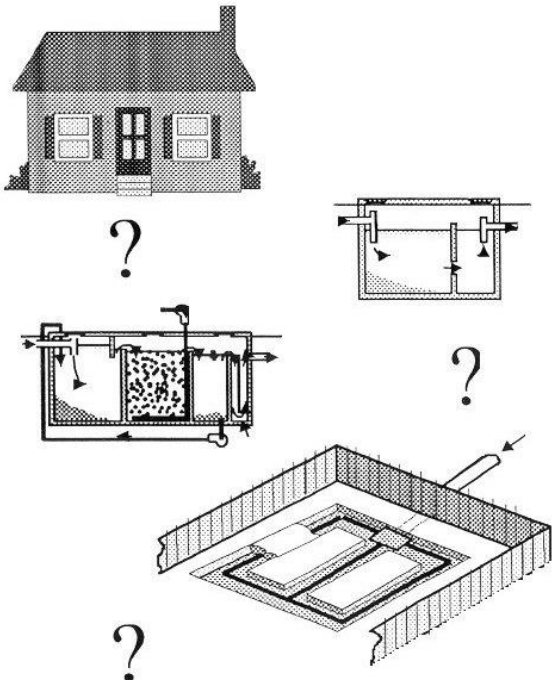
HELP PROTECT YOUR HEALTH AND THE ENVIRONMENT

Poorly maintained sewage management systems are a serious source of water pollution and may present health risks, cause odours and attract vermin and insects.

By looking after your management system you can do your part in helping to protect the environment and the health of you and your community.

For more information please contact:

Managing Wastewater In Your Backyard



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