



Inspection and Troubleshooting of On-site Wastewater Management Systems

Inspection and Troubleshooting Scenarios I

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Introduction

- What would you do if?
- In this session, you will be presented with failing systems to test your skills of observation and reasoning
 - Work out what the problem is;
 - How you would determine this; and
 - What you might do to remedy the situation

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Scenario 1

- Wisconsin mound at a State government-owned house
- Look at the photo – is there a problem here?
- How would you determine if there was a failure in the:
 - Structural integrity of the mound;
 - The treatment process?

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Scenario 1 (cont.)

- What investigations would you carry out to test for failure?
- If the ponding around the mound was effluent, how would you rectify the failure?

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Scenario 2

- Aerated Wastewater Treatment System (AWTS) with single 5m 'spray bar'.
- Lot ~500m² within a rural village on the outskirts of Newcastle.
- There is no more than 30m² of suitable land application area in the front yard.
- 120m² available land application area in the back yard.

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Scenario 2 (cont.)

- Hydraulic balance requires a minimum irrigation area of 300m². Clearly not available.
- Would you consider requiring the installation of a pump out system? Why / why not?
- What other options are available to reduce the risk this system poses to public health and the environment?

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Scenario 3

- 500m² village block with 4 bedroom dwelling on reticulated water.
- Septic tank was undersized but in good condition and operating effectively.
- Effluent pumped to a raised ETA bed.
- ETA bed ~15m² in a high rainfall zone.


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Scenario 3 (cont.)

- What are some of your concerns about this system?
- The audit protocol in use found this system to be low risk. Do you agree?
- Do you think consideration of long-term, broad scale cumulative impacts would change this risk classification?

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Scenario 3 (cont.)

- You carry out a re-inspection of this system 12 months later. The ETA bed is constantly surcharging into the neighbouring property.
- What options would you consider acceptable for rectifying this system?
- What interim measures would you put in place to manage risk while a long-term option is implemented?

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Scenario 4

- Three bedroom house (4 occupants) on tank water supply.
- Rural residential lot on a coastal floodplain (~4,000m²).
- Septic tank and gravity dosed absorption trench.

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Scenario 4

- List the reasons why you think this system is failing.
- Develop an appropriate strategy to rectify this system failure.

Scenario 5

- Pump-out toilet and greywater system at a State government-owned tourist accommodation
- Alpine area and National Park
- Variable occupancy
- Creek next to building
- Solar power – small battery system




Scenario 5 (cont.)

- What are the priorities for the Site?
- What are the challenges of the Site?
- What treatment and land application options are suitable for this Site?



Scenario 6

- Composting toilet, grease trap and greywater diversion device
- Rural property
- Poor maintenance

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Scenario 6 (cont.)

- Challenges of this composting toilet style?
- What is potentially happening at the greywater filter?
- Why is the grease trap disconnected?
- What is the maintenance program for this system?
- Why is there a green grass down the slope instead of across the slope?

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Useful References

- Blasing, E.M. & Converse, J.C. (2004) Effluent Quality in Saturated Mound and Modified Mound Toes Receiving Septic Tank or Aerobically Treated Domestic Wastewater. *On-site Wastewater Treatment X Proceedings of the Tenth National Symposium on Individual and Small Community Sewage Systems*
- Port Stephens Council (2004) *Wisconsin Mound Project Marsh Road, Bobs Farm, NSW* Enhancement Project Grant E031
- Blue Mountains City Council (2002) *Improving The Performance Of Onsite Sewage Management Systems Within Blue Mountains Water Supply Catchment Areas*