

A sampling design to quantify dispersal and effects of sewage discharge on the quality of shallow ground water

- The following describes the use of a radial sampling design to quantify dispersal and effect of sewage discharge to soak-away sumps on the quality of shallow ground water.
- If water sampling using the radial design results in marked deterioration of shallow ground water then discharge of sewage to soak-away sumps would stop and off-site disposal would commence.

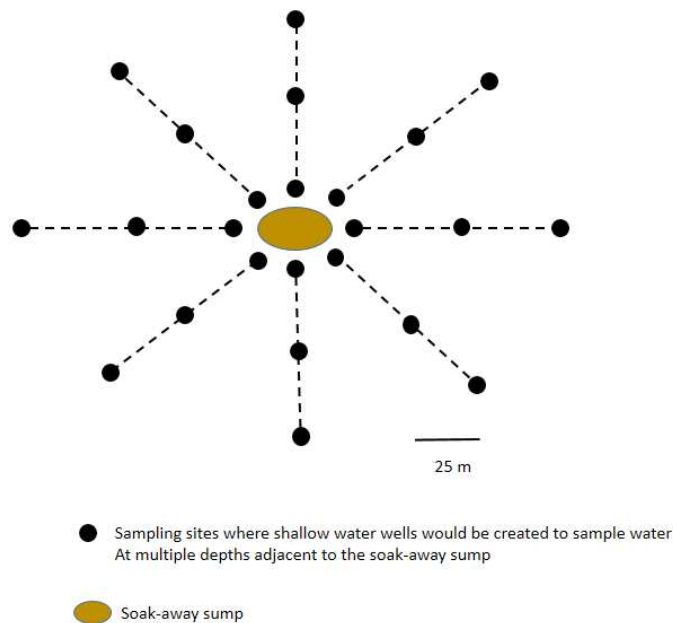


Figure 1. A conceptual radial design that would be required for PCA to consider the use of soak-away sumps for disposal of sewage in NNPR. To delineate and quantify dispersal of sewage, shallow water wells would be created and sampled at multiple depths (e.g., 1, 2 and 4 m) at each sampling site below the ground surface. This study design would require substantive sampling and analysis of water samples. Water samples would need to be collected during and after the use of the soak away sumps and sent to an accredited laboratory for analyses of total phosphorus, total nitrogen, faecal coliforms, trace metals and pharmaceuticals.