

**Submission**

**No 23**

## **INQUIRY INTO MANAGEMENT OF DOMESTIC WASTEWATER**

Organisation: Whitehead & Associates Environmental Consultants Pty Ltd  
Name: Mr Joe Whitehead  
Position: Director  
Date Received: 16/12/2011

# Management of Domestic Wastewater

## (Inquiry)

The following comments relate primarily to on-site and decentralised wastewater management in NSW.

a) The adequacy of safeguards to ensure food safety, and to protect against the risk of localised contamination, in food production areas;

The NSW regulations have in several cases not proved adequate in ensuring food safety, particularly in several estuarine and coastal lake catchments where shellfish are produced. Areas of concern have included Wallis Lake, Tilligery Creek, and the Kalang and Bellinger Rivers. In most cases the source of human viral contaminants has not been conclusively linked to the performance of on-site wastewater systems, though they remain a potential source and their contribution cannot be discounted. The current NSW domestic wastewater regulatory arrangements clearly do not provide assurance that food safety can be guaranteed to be free from adverse impacts of domestic wastewater management. The regulatory environment could be significantly strengthened by the application of sound science to the development and implementation of best practice guidelines.

b) The appropriateness of current regulatory arrangements in relation to the management of domestic wastewater;

The current regulatory arrangements are in need of updating and improvement. They fall some way short of best practice.

The NSW Environmental & Health Protection Guidelines, published in 1998, are for the most part a management document, based little on peer reviewed, published scientific literature and provide only limited technical guidance on system design, installation, servicing and maintenance. These guidelines are now significantly out of date and largely do not reflect industry best practice elsewhere in Australia and overseas. The technical aspects of these guidelines were reviewed and updated by panel of experts, of which I was one, in 2003/2004. These technical aspects and the management aspects, to be undertaken by Government Agencies, were never published. Advances since 2003/2004 would mean that the material included in the then review could be significantly improved upon today.

In the time since the publication of NSW Environmental & Health Protection Guidelines in 1998, the corresponding guidelines relating to on-site wastewater management have been revised and updated in most other Australian States and Territories. Guidelines in several overseas countries which provide a lead for Australian guidelines e.g. USA and New Zealand have similarly been revised to incorporate valuable findings from scientific research and the peer reviewed published literature and these could similarly benefit any future revision of the NSW guidelines.

Whilst the NSW Environmental & Health Protection Guidelines were written as performance based guidelines, their interpretation by Local Government regulators has often been prescriptive. This approach fails to recognise that the circumstances for on-site wastewater management systems vary and individual system performance, site and soil characteristics and the catchment related risks to sensitive receptors need to be taken into consideration to ensure appropriate design, installation and management of systems adequately protects public and environmental health risks. In many respects the guidelines are overly conservative, yet in other respects they fail to encompass the flexibility to apply sound science to adequately address risk and determine an appropriate solution.

A thorough revision and updating of the guidelines is required to bring them up to date with industry best practice.

On-site wastewater management has traditionally been a Cinderella area where standards across the board in terms of design, installation, maintenance and regulation have been demonstrably inadequate. The industry needs to recognise and accept that the low standards of the past have resulted in many unsatisfactory outcomes and it is time that standards were raised. Historically, the wider community has seen on-site wastewater management as low-cost and as a consequence limited budgets and an unwillingness to spend an appropriate amount on effective solutions have been significant contributors to less than satisfactory outcomes.

A number of NSW Government Departments nominally have a role in on-site wastewater management, yet these are significantly understaffed and commit only limited resources to the area. The Department of Local Government is the lead agency yet has no full-time member of staff engaged in on-site wastewater work. Similarly, human resources committed to this area by the Ministry of Health are less than 1.5 full time equivalent staff, the former NSW EPA let their involvement in the management of medium sized on-site wastewater management systems diminish and handed over responsibility for these systems to inadequately prepared and poorly equipped Local Government.

The State Government funded each local Council as part of the Septic Safe funding, to develop on-site wastewater management strategies, yet when that funding came to an end, sustained input into improved on-site wastewater management has, in many cases, waned as local Councils have committed limited ongoing funding to on-site wastewater management.

Standards vary significantly from one local government area to another. There are Councils which work hard to maintain high standards, even with limited budgets, but in many others interest and enthusiasm waned and very variable and often low standards prevail.

Even in some coastal Councils where impacts on shellfish production in estuaries are known, there is insufficient evidence of application of adequately skilled human resources or budgets to effectively address the problems. This is evident by the long timeframes over which water quality issues in shellfish producing estuaries have continued.

Few Councils have budgets or adequately skilled staff to apply modern sound science to address the problems of appropriate on-site wastewater system design and management, nor the skills and resources to undertake studies in the areas of soil science, hydrology, hydrogeology and catchment management, yet there is ample evidence to indicate that these skills have been applied elsewhere,

both in Australia and overseas, to resolve such problems as exist currently in NSW. There are significant opportunities for the NSW Government to more effectively fund and integrate the efforts of State Government Agencies, Local Government and the private sector to address these problems.

There is an opportunity for State Government to take the lead in establishing, supporting and enforcing higher standards across the board, by developing more rigorous guidelines and standards, appropriately funding these and supporting Local Government to implement and enforce them. There must be an acceptance that improved standards will only come at increased cost to the wider community and regulators have to be prepared to educate and inform the community of the real and higher costs of maintaining standards which will achieve the desired outcomes in terms of protection of public and environmental health.

c) The adequacy of inspection procedures and requirements to report incidents; and

Limited inspection of on-site wastewater management systems is undertaken. The level and frequency of inspection appears to vary considerably from one Council to another. The level of detail and rigour of inspections varies significantly too. No standards for inspection or reporting exist and data available from inspections is rarely comparable. Circumstantial evidence, based on a varying range of parameters from one study to the next, suggests that large numbers of on-site wastewater management systems perform poorly or fail. NSW Health accreditation of significant numbers of more advanced domestic on-site wastewater systems is based on limited testing. No ongoing testing of such systems is required. It is clear that many such systems do not perform in the field as well as they perform in the limited pre-accreditation testing and that performance diminishes with time. Levels of servicing and maintenance are very variable and in some areas of the State servicing by appropriately trained service agents is not available. Council officers often have limited experience in the design, servicing and maintenance of on-site wastewater systems and in many cases are inadequately equipped to ensure high standards prevail. Council budgets for professional development of these staff often constrain their opportunities to develop their skills to an appropriate level. Again the professional training models adopted in many States in the USA provide an indication of appropriate industry standards.

With better skilled and better funded staff, Councils could and should be more actively involved in more frequent and more detailed inspections. Such inspections might also be undertaken by the private sector. Once collected, performance data on systems needs to be better collated and interpreted so that the causes of potential environmental and public health problems can be better understood, interpreted and resolved.

It is not the case that these solutions cannot be found, as there is limited evidence of success where higher level approaches have been taken in some areas of NSW, but much more widespread evidence of success where such approaches have been taken interstate and overseas.

d) Any other related matter.

On-site wastewater management in NSW has historically been under-resourced. Consequently low standards have prevailed and these have shown themselves in unsatisfactory outcomes including proven and suspected adverse impacts of domestic wastewater management systems on public health, environmental health and food production. Modern scientific, technical and management approaches are available to address many if not all of these problems. The NSW Government is in a

position to take a lead in establishing and maintaining higher standards, yet has hugely under-resourced that area in the past. What is required is an acceptance that the low standards of the past have been inadequate and that higher standards in the future must prevail. This should apply across the board, through all levels of government, the industry and homeowners. The necessary raising of standards will not come without cost and the wider community needs to be made aware of and accept this if the present environmental, public health and food production problems are to be adequately addressed.

Joe Whitehead

Principal, Whitehead & Associates Environmental Consultants Pty Ltd

Director, Centre for Environmental Training

197 Main Road, Cardiff, NSW 2285