Public Health Act 2010

Risk Based Drinking Water Management

July 2012
Can we prevent contamination?

- Poor management of catchment and treatment
- Inability to treat high turbidity river water
- Lack of understanding of risks in supply system
- Lack of inspection of reticulation system
- Inadequate protection against recontamination
- Multiple failures of alarms and reliance on a single barrier
Ensuring a safe water supply

- A strong culture of reliability – technical
  - staff

- Effective communication

- Good incident management and decision making

- Redundancy - multiple barriers
**Public Health Act 2010**

*supplier of drinking water* means any of the following:

(a) Sydney Water Corporation,

(b) Hunter Water Corporation,

(c) a water supply authority within the meaning of the *Water Management Act 2000*,

(d) a local council or a county council exercising water supply functions under Division 2 of Part 3 of Chapter 6 of the *Local Government Act 1993*.

(e) the Lord Howe Island Board,

(f) a licensed network operator or a licensed retail supplier within the meaning of the *Water Industry Competition Act 2006*.

(g) any person who treats or supplies water on behalf of a person referred to in any of the preceding paragraphs.

(h) any person who supplies drinking water in the course of a commercial undertaking (other than that of supplying bottled or packaged drinking water), being a person who has not received the water:

   (i) from a person referred to in any of the preceding paragraphs, or

   (ii) in the form of bottled or packaged water,

(i) any person who receives water from a person referred to in this definition and who supplies drinking water from a water carting vehicle in the course of a commercial undertaking.
15 Drinking water must be fit for human consumption (cf 1991 Act, s 10IA)

A person must not, by means of a reticulated water system, supply any other person with drinking water that is not fit for human consumption.

Maximum penalty:
(a) in the case of an individual—2,500 penalty units, or 12 months imprisonment, or both, or
(b) in the case of a corporation—10,000 penalty units.
Public Health Act 2010 – powers as for 1991 Act

Delegated officers may:

- Direct a supplier to carry out tests
- Direct a supplier to provide information
- Prepare advice on the safety of drinking water (includes boil water alerts)
- Direct a supplier to retract or correct information
- Enter and inspect premises of a supplier
- Take action with respect to unsafe water (prevent use or bring to a condition so no longer unsafe)
Public Health Act 2010

Division 1  Safety Measures for Drinking Water

25  Quality assurance programs (cf 1991 Act, s 10M)

(1) A supplier of drinking water must establish, and adhere to, a quality assurance program that complies with the requirements prescribed by the regulations.

(2) The regulations may make provision for or with respect to any of the following:
   (a) the tests on water and other substances to be carried out by a supplier of drinking water pursuant to this Division,
   (b) the records to be maintained by a supplier.

(3) The Chief Health Officer may, by notice in writing, exempt a supplier of drinking water or class of suppliers from subsection (1) if the Chief Health Officer is satisfied that the supplier, or class of suppliers, is subject to other appropriate licensing or other regulatory requirements.
Part 5, Clause 34  Quality assurance programs

(1) For the purposes of section 25 (1) of the Act, a quality assurance program must address the elements of the Framework for Management of Drinking Water Quality (as set out in the Australian Drinking Water Guidelines published by the National Health and Medical Research Council) that are relevant to the operations of the supplier of drinking water concerned.

(2) A supplier of drinking water must provide the Director-General with a copy of its most recent quality assurance program.

(3) The Director-General may arrange for the review of a quality assurance program of a supplier of drinking water at any time.

Date of commencement of clause 34
1 Sep 2014
Australian Drinking Water Guidelines 2011

- Defines safe, good quality drinking water.
- Preventive management encompasses all steps in water production from catchment to consumer.
- Helps assure drinking water quality and protects public health

Guiding Principles

- Greatest risk is pathogenic microorganisms. Protection of water sources and adequate treatment essential.
- Continuously maintain multiple barriers appropriate to contamination.
- Sudden/extreme change in water quality, flow or environmental conditions (eg. rainfall, flooding) should arouse suspicion.
- Staff - respond quickly and effectively to adverse signals.
- Water utilities, NOW, NSW Health - personal sense of responsibility, never ignore complaint.
- Preventive risk management approach is required to ensure safety and quality. Testing is just one part of this process.
Framework for Management of Drinking Water Quality

COMMITMENT TO DRINKING WATER QUALITY MANAGEMENT

SYSTEM ANALYSIS AND MANAGEMENT
- Assessment of the drinking water system
- Preventive measures
- Operational procedures and process control
- Verification of drinking water quality
- Incident and emergency management

SUPPORTING REQUIREMENTS
- Employee awareness and training
- Community involvement
- Research and development
- Documentation and reporting

REVIEW
- Evaluation and audit
- Review and continual improvement
For local water utilities

- NSW Office of Water *Best-Practice Management of Water Supply and Sewerage Guidelines* recommend risk-based drinking water management systems

- NSW Health Drinking Water Monitoring Program recommends implementation of Guidelines and Framework

- National Water Initiative and *National Performance Report Urban Water Utilities* (utilities serving over 10,000 connected properties)
  - develop a risk-based drinking water quality management plan (Indicator H6)
  - have it externally assessed (Indicator H5)
Supporting drinking water management systems

- NSW Health has developed pilot drinking water management systems with four regional utilities and NSW Office of Water.

- NSW Health will:
  - Develop, from the four management systems, generic (de-identified) documents as a guide for other water suppliers.
  - Prepare a guidance document to help drinking water suppliers develop and implement their own risk-based drinking water management systems.
Developing a Management System

- Develop an internal plan for the project
- Identify appropriate people to be responsible
- Map the existing system from source to consumer
- Review and document existing practices, address gaps
- Current management may already address many elements
- However, existing practices may not address all hazards
- Not all employees may know or understand the system
Developing a Management System

- Water utilities may need support to prepare and implement management systems – seek outside help

- NSW Health and NOW will assist

- Water and Sewerage Management Plans for Aboriginal communities

- NSW Health Drinking Water Monitoring Program assists water utilities to address several elements of the Framework
NSW Health Drinking Water Monitoring Program – supporting Management Systems

- Element 2 Assessment of system (Database, project monitoring)
- Element 5 Verification of water quality (Monitoring Program)
- Element 6 Manage incidents, emergencies (Response Protocols)
- Element 7 Employee Awareness and Training (regional workshops and NOW Operator Training Courses)
- Element 9 Research and Development (Project Monitoring)
- Element 10 Documentation, Reporting (Database helps)
- Element 11 Evaluation and Audit (Database allows for long-term evaluation of results)
- Also Fluoride Code (CCPs, operational procedures, verification, communication, incidents, documentation)
## Element 2 – assessment of supply system

<table>
<thead>
<tr>
<th>No.</th>
<th>Process Step</th>
<th>Hazardous events (how can the hazard be introduced)?</th>
<th>Hazards (contaminants)</th>
<th>What preventive measures are currently in place (controls)</th>
<th>Responsibility to manage risk</th>
</tr>
</thead>
</table>
| 3   |              | Spills occurring in catchment on roads or on properties | Chemicals (various)    | - Hazardous material controls on transport vehicles (state/national requirements)  
- Large storage - dilution  
- Can dose PAC  
- Could bring in backup supply pending a suitable risk assessment of that backup supply | Council (unless otherwise stated) |

<table>
<thead>
<tr>
<th>Residual Likelihood</th>
<th>Consequence</th>
<th>Risk</th>
<th>Maximum Likelihood</th>
<th>Consequence</th>
<th>Risk</th>
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</thead>
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<tr>
<td>E</td>
<td>3</td>
<td>Moderate</td>
<td>E</td>
<td>4</td>
<td>High</td>
</tr>
</tbody>
</table>

Notes on the basis of risk scoring:
- There is a trunk road and some smaller roads in the catchment. The roads cross the creek and tributaries. This is inherently unlikely to occur. The risk was scored moderate due to the 3 score for consequence arising from the operational difficulties of responding.

Follow-up actions to reduce risks or risk assessment uncertainties:
- Review notification procedures by first-responders to see how Council would find out.
Element 3 – Preventive measures
Combine the elements into a management system

Describe and assess the supply system
Identify critical control points and critical limits
Provide simple operational procedures
Incorporate incident response protocols
Developing a Management System

- Is it a ‘Plan’ or a ‘System’?
- Not static – accommodate change such as catchment developments, emerging issues, advances in technology or new institutional arrangements.
- Don’t let the management system gather dust! (Commitment to drinking water quality management….)
- Development - ongoing and iterative process
- Continually evaluate and review progress
The next steps

- Public Health Act 2010, Regulation commence later this year
- Expected two year transition period
- Please consult the local Public Health Unit
- PHU will provide a copy of management system to NOW
- Regularly review management system to ensure current
- Full review every 4 years in line with Strategic Business Panning
- Audit frequency determined in consultation with NSW Health
- Engage an auditor approved by NSW Health
- NOW Inspectors/PHUs will check implementation
Tourists ill from water

By health writer
SONIA MILHANIC

The Government has launched a crackdown on rural tourist accommodation after guests became sick from drinking water.

An alarming investigation in the Hunter region found faecal and bacterial rates in the water at up to 340 times accepted levels.

NSW Health is checking caravan parks, wilderness resorts, country retreats, and bed and breakfasts across the State which rely on a private water supply. Operators are being warned to either install a water treatment system or erect warning signs for guests.

In one Hunter case, revealed in the latest Public Health Bulletin, half the guests suffered diarrhoea and vomiting, with one person hospitalised.

Tests revealed the river water used in food preparation, ice and for drinking failed to meet required standards.

Hunter health officials ran 13 tests at local resorts in November 1996. The four with water treatment facilities met the standards. Of the remaining 11, eight failed.

"Therefore, 73 per cent of the raw water supplies failed to meet the bacteriological standards for drinking water," the study found.

A follow-up inspection a month later found continuing poor results. Of 13 samples, seven failed.

A NSW Health spokesman said the Hunter district premises which failed testing had since improved their standards. However, random checks are still being carried out.

NSW Health has also received two further complaints about accommodation on the mid-north coast after a large group of school children became ill. The operators have been ordered to take similar measures to their Hunter counterparts.
Private Water Supply Guidelines

Set out the responsibilities of operators and assist them in providing a safe water supply.

Apply to water supplies serving the public and/or employees (i.e. not town water).

The Guidelines do not apply to water utilities or individual household supplies.

Adapts the *Australian Drinking Water Guidelines* to private systems.
ROLE FOR COUNCILS AND PUBLIC HEALTH UNITS

Local PHU and Council should agree on a process for registering and inspecting premises.

It is recommended that premises be inspected if at high risk.

Provision of a safe water supply should be a development consent condition.

Guidelines and management system template on the web

Printed booklet and DVD is available.

Water Carters
Part 5, Clause 35  Records to be kept by suppliers of drinking water

(1) A water carter must make, and keep for at least 6 months, a record of the following:
(a) the name of each supplier of drinking water from whom the water carter receives water and the place, date and time at which the water is supplied to the water carter by that supplier,
(b) the name and address of each person to whom the water carter supplies water, the place, date and time at which the water is supplied to that person and the volume of water supplied to that person,
(c) details of any substances other than drinking water transported in any water tank used by the water carter,
(d) the dates on which any water tank used by the water carter is cleaned.
Maximum penalty: 10 penalty units.

(2) A supplier of drinking water (other than a water carter) must make, and keep for at least 6 months, a record of the name, address and telephone number of each water carter to whom the supplier of drinking water supplies water.
Maximum penalty: 10 penalty units.

(3) In this clause, **water carter** means a person referred to in paragraph (i) of the definition of **supplier of drinking water** in section 5 (1) of the Act.
Water Carters

- *Local Government Act* s68(1) a person may draw and sell water from a local water utility but only with prior approval
- *Local Government Act* s124(Order 20) council may order the operator to render a vehicle in a clean and sanitary condition
- *Local General Regulation* Part 3, Clause 93 vehicle requirements
- Water carters required to notify NSW Food Authority of their business
- The water source should be chlorinated and an adequate chlorine residual at the point of delivery
- Tank should only be used for drinking water and inspected by council every 12 months
- Standpipes and hydrant boxes should meet the Plumbing Code
- Consider how to contact carters and consumers in an emergency
- NSW Health will update guidance document
Conclusions

- Drinking water systems are vulnerable to contamination.
- Smaller systems often face greater challenges.
- Understanding system hazards, operations and maintenance is key to safe water supply.
- Get involved to make sure the process is operationally useful.