DEPARTMENT OF SUSTAINABILITY, ENVIRONMENT, WATER, POPULATION AND COMMUNITIES

AUSTRALIAN WASTE CLASSIFICATIONS

ROLES IN DECISION MAKING

Hyder Consulting Pty Ltd
ABN 76 104 485 289
Level 5, 141 Walker Street
Locked Bag 6503
North Sydney NSW 2060
Australia
Tel: +61 2 8907 9000
Fax: +61 2 8907 9001
www.hyderconsulting.com

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Author	Russ Martin
Checker	Ron Wainberg
Approver	Ron Wainberg
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1 SUMMARY

The Australian Government Department of Sustainability, Environment, Water, Population and Communities (department) commissioned Hyder Consulting (Hyder) to consult with Australian jurisdictions on legislative and practical bases for jurisdictional use of waste classifications. The classifications were included in the Department's *National Waste Report 2010*, released May 2010. The classification schemes were expressed as diagrams in detailed and summary versions.

The department has subsequently commissioned Hyder to consolidate the classifications and explanatory text in this summary report. In addition, Hyder conducted additional consultations to determine whether jurisdictions used multiple classifications for different purposes and to determine uses of the waste classifications in decision making.

Most Australian jurisdictions use waste classifications in permitting and licensing, and to determine treatment and disposal methods. Beyond these common uses, jurisdictions can vary significantly in their primary uses of waste classifications. For example, Victoria's approach focuses primarily on Prescribed Industrial Waste (known elsewhere as 'hazardous waste' or other terms) while Queensland's classifications serve primarily to drive wastes toward specific treatment paths. New South Wales' classifications primarily affect disposal options for specific wastes and incorporate a risk-based approach. In Western Australia and South Australia, waste classifications are used primarily to direct wastes to specific disposal facilities best suited for those classes of waste. Western Australia has also taken more of a management-based approach than the risk-based approach common in other jurisdictions. These approaches to classification may vary from the classifications used for reporting requirements utilised by the jurisdictions.

This report incorporates summary waste classifications by jurisdiction and summarises Hyder's consultations with the jurisdictions on how the waste classifications are used to inform decision-making. The reader should note that all footnote references are current as of May 2010.

2 APPROACH

For the waste classification diagrams, Hyder went to original source documents for verification where possible and consulted with a variety of jurisdictional staff for information and diagram review as appropriate.

Hyder asked the jurisdictions to confirm that the diagrams were an accurate representation of the jurisdictional waste classification system from a management and disposal perspective. In a few cases, this involved several rounds of clarification and confirmation to ensure that the jurisdictions were comfortable with the diagrams. Longer, more detailed versions of the diagrams were first reviewed with and approved by the jurisdictions. Shorter, summary forms of the diagrams included in this report were then derived from the longer versions and also reviewed with jurisdictions for their approval.

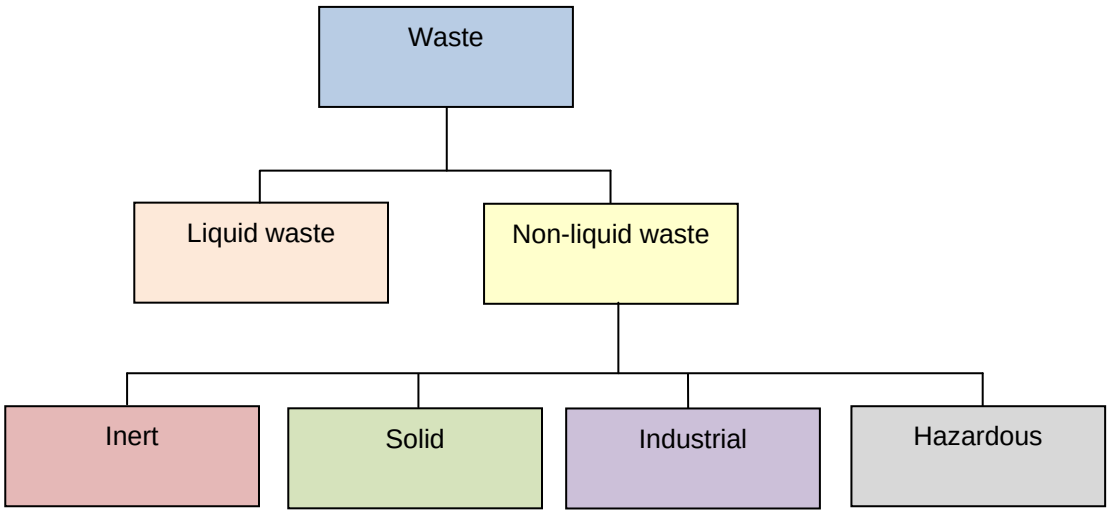
Several jurisdictions advised and signed off on versions of the diagrams that were somewhat different than the substance outlined in legislation and regulations. In large part, this reflected various interpretations based on practical implementation and/or different approaches for public reporting and regulatory management.

The following sections address the waste classifications by jurisdiction, in alphabetical order. Jurisdictional definitions of waste and their legislative basis are provided. Summary diagrams are also provided in the text to assist in understanding the classifications and to provide context for discussions.

3 CLASSIFICATIONS

3.1 Australian Capital Territory

The *Environment Protection Act 1997* defines waste as any solid, liquid or gas or any combination of them, which is a surplus product or unwanted by-product of an activity, whether the product or by-product is of value or not.



The ACT approach to waste classification is based on a previous version of the risk-based approach used by NSW (see NSW discussion).

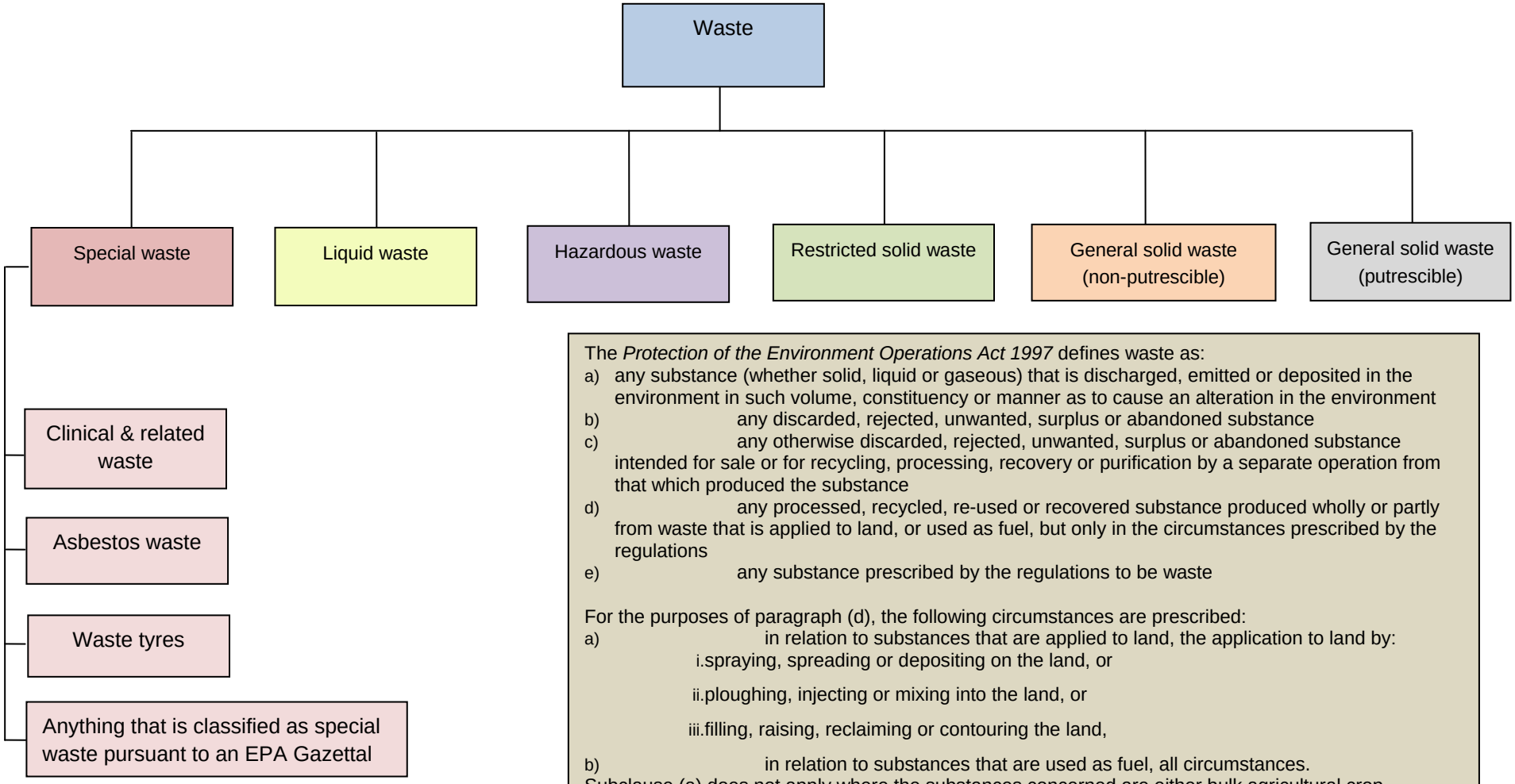
The ACT's approach is based on Environment Protection (Legislation) Regulations, Subordinate Law 2000 No 36 made under the *Environment Protection Act 1997*[1] and Environmental Standards: Assessment & Classification of Liquid & Non-liquid Wastes, June 2000[2].

Simpler categories are used for reporting the main waste groupings based on the source of waste generation used by most jurisdictions: municipal solid waste (MSW), commercial and industrial waste (C&I) and construction and demolition waste (C&D).

[1] Available at http://www.legislation.act.gov.au/sl/2000-36/20000921-5191/pdf/2000-36.pdf.

[2] Available at http://www.austlii.edu.au/au/legis/act/num_reg/epr20002000n36532.txt/cgi-bin/download.cgi/download/au/legis/act/num_reg/epr20002000n36532.txt.

3.2 New South Wales



The above classifications are used for regulation and management. They form part of a risk-based approach to the treatment and handling of waste. This approach is taken to minimise potential risk or harm to environment and human health based on a sequential process to determine likely risks or impacts. Wastes are classified according to whether or not the waste should be classified first as special waste, then liquid waste, 'pre-classified' wastes or hazardous waste. Wastes with non-hazardous characteristics can then be chemically assessed as general solid waste and further assessed as putrescible or non-putrescible waste.

The waste regulatory framework is administered under the principal legislation of the *Protection of the Environment Operations Act* (*POEO Act*, 1997 as amended in 2008) and the *Waste Avoidance and Resource Recovery Act* (*WARR Act)* 2001. The 2008 POEO Act amendments updated the way wastes are classified. Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-liquid Wastes were replaced during the 2008 amendments with new guidelines[3] to support the waste classification system.

Several classes of wastes are also intended to promote reuse/recycling opportunities. As with the ACT and most other jurisdictions, NSW uses simpler categories for reporting the main waste groupings based on the source of waste generation: MSW, C&I and C&D. This separate reporting approach is viewed by NSW as a practical approach that recognises the data provider's capacity to identify material at the time of reporting. The NSW view is that two separate purposes are best met by these two separate approaches.

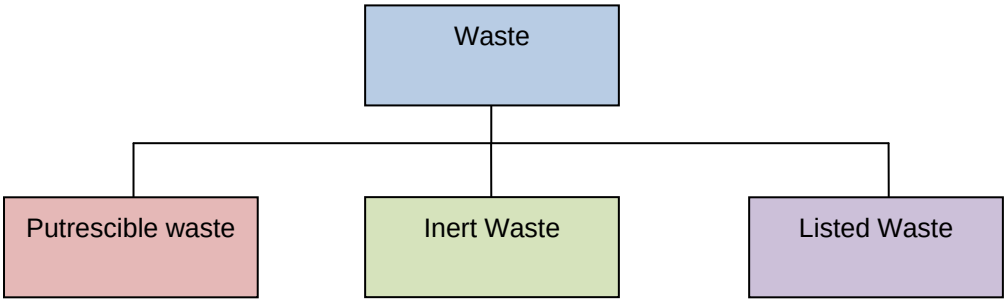
3.3 Northern Territory

"The *Waste Management and Pollution Control Act* (in force as of March 2009, replacing 1998 Act) defines waste as:

a) a solid, a liquid or a gas; or

b) a mixture of such substances,

that is or are left over, surplus or an unwanted by-product from any activity (whether or not the substance is of value) and includes a prescribed substance or class of substances."



Waste policy and regulation is determined by the Department of Natural Resources, Environment, The Arts and Sport (NRETAS), Waste Management and Resource Recovery Group. NRETAS administers the *Waste Management and Pollution Control Act* (in force as of March 2009, replacing the 1998 Act).

Reporting in the standard categories of MSW, C&I and C&D is generally not available for the Northern Territory.

[3] Available at http://www.environment.nsw.gov.au/resources/waste/08202classifyingwaste.pdf.

3.4 Queensland

The *Environmental Protection Act 1994* defines waste as: waste includes anything other than a resource approved under subsection (4), that is:

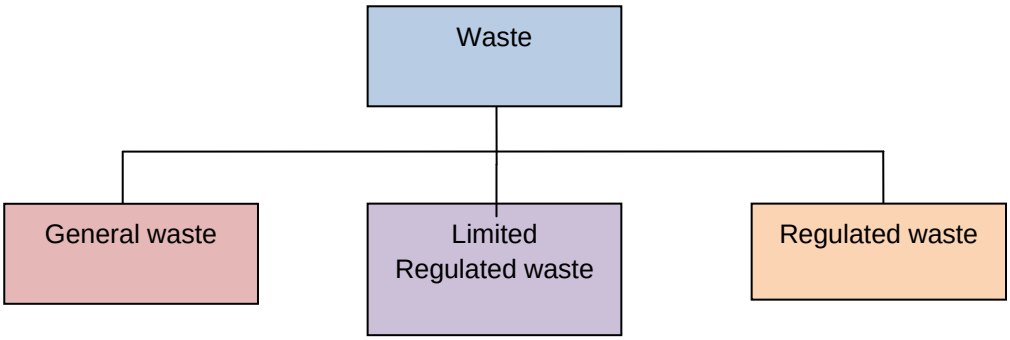
a) left over, or an unwanted by-product, from an industrial, commercial, domestic or other activity

b) surplus to the industrial, commercial, domestic or other activity generating the waste

— Waste can be a gas, liquid, solid or energy, or a combination of any of them.

— A thing can be waste whether or not it is of value.

— The administering authority may approve a resource, of a stated type of resource, for subsection (1) of it considers the resource, or type or resource, has a beneficial use other than disposal.



Queensland's current approach promotes treatment of Regulated waste (similar to the approach for Prescribed Industrial Waste in Victoria) to become Limited Regulated waste, which is lower in toxicity and less expensive to dispose of as it can be disposed at General waste landfills. Limited Regulated waste also does not require a Regulated waste transport license, which again makes the waste less expensive to manage. This approach differs from Queensland's earlier approach (prior to approximately1998) in which Regulated waste remained Regulated waste, regardless of treatment. The Queensland view is that the availability of less expensive treatment and disposal options will encourage greater compliance. Reporting across all waste types can be expected to improve with the introduction of legislation requiring a waste levy on "industrial wastes". This has helped drive reporting requirements in most other jurisdictions. It should be noted though that this change will not take effect until July 2011.

Queensland does not collect data on MSW and C&I, but could 'bundle' different materials together for reporting purposes. C&D reporting is somewhat limited. Regulated wastes are reported separately.

3.5 South Australia

The *Environment Protection Act 1993* defines waste as:

- any discarded, rejected, abandoned, unwanted or surplus matter, whether or not intended for sale or for recycling, reprocessing, recovery or purification by a separate operation from that which produced the matter
- anything declared by regulation or by an environment protection policy to be waste, whether of value or not

The EPA SA uses waste classifications in several different ways. As with most jurisdictions, the definitions of wastes streams and types are used to put on conditions of licence to define what can and cannot be received and how that waste must be managed. Certain types of waste also require further classifications past the definition, to assess and determine the total and leachable chemical in concentrations and classify it for disposal, or if it exceeds disposal criteria, it requires treatment.

Key waste definitions were updated in September 2009[4].

Emphasis is primarily on classification of soils and industrial waste. Waste Fill criteria[5] are the baseline for approving reuse of soil at facilities not licensed to receive waste, by providing a Limited Purposes determination. A waste derived fill standard[6] incorporates this waste fill for reuse along with a higher classification called Intermediate soil (or Level 1 Industrial waste, *e.g.* foundry sand for reuse) for which SA will consider reuse subject to compliance with the Standard, which includes the use of a Site Contamination Auditor.

Materials with hazardous characteristics[7] are classified as hazardous waste and may not be sent to landfill.

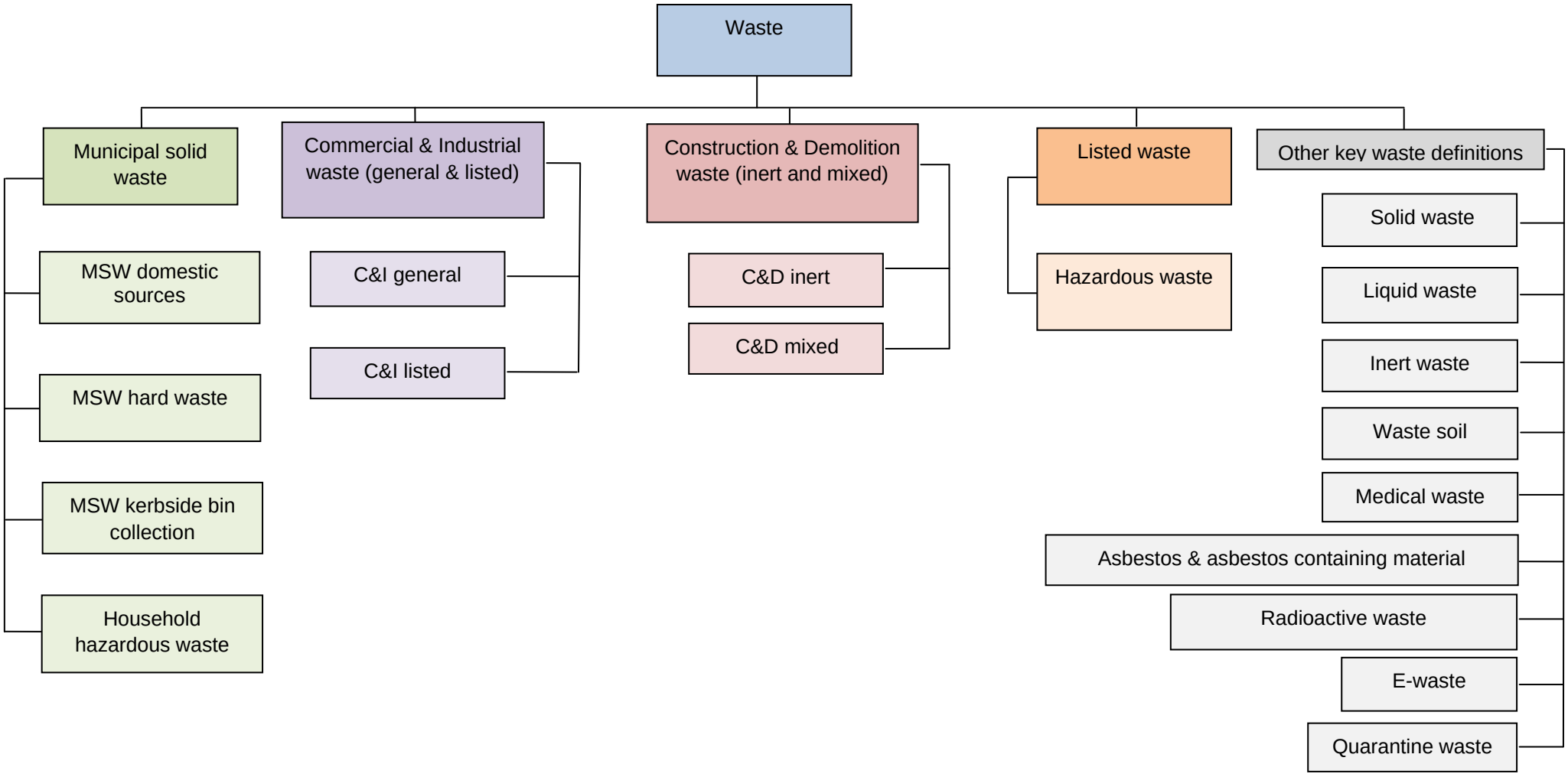
South Australia uses standard categories for reporting the main waste groupings based on the source of waste generation: MSW, C&I and C&D. South Australia also reports separately on beverage containers recovered through its container deposit legislation.

[4] Available at http://www.epa.sa.gov.au/xstd_files/Waste/Guideline/guide_waste_definitions.pdf.

[5] Available at http://www.epa.sa.gov.au/xstd_files/Waste/Information%20sheet/current_waste_criteria.pdf.

[6] Available at http://www.epa.sa.gov.au/xstd_files/Waste/Guideline/standard_wdf.pdf.

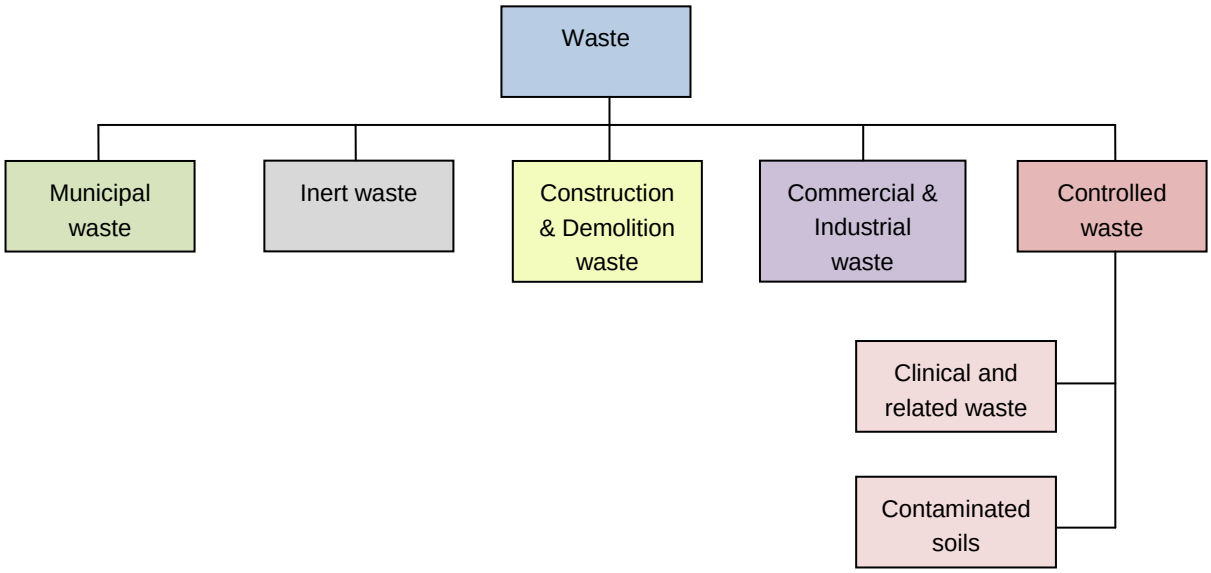
[7] These materials are assigned a UN Class and Code which relates to the hazard classification system included in the United Nations Recommendations on the Transport of Dangerous Goods as used in Australia. For example, explosive, flammable, oxidising, corrosive etc.


Waste
Municipal solid waste
MSW domestic sources
MSW hard waste
MSW kerbside bin collection
Household hazardous waste
Commercial & Industrial waste (general & listed)
C&I general
C&I listed
Construction & Demolition waste (inert and mixed)
C&D inert
C&D mixed
Listed waste
Hazardous waste
Other key waste definitions
Solid waste
Liquid waste
Inert waste
Waste soil
Medical waste
Asbestos & asbestos containing material
Radioactive waste
E-waste
Quarantine waste

3.6 Tasmania

The *Environmental Management and Pollution Control Act 1994* defines waste as:

- discarded, rejected, unwanted, surplus or abandoned matter, whether of any value or not
- discarded, rejected, unwanted, surplus or abandoned matter, whether of any value or not intended for:
  - — recycling, reprocessing, recovery, reuse or purification by a separate operation from that which produced the matter
  - — sale



The Tasmanian classification scheme is used primarily for landfill permit reporting requirements and for charging landfill fees (Tasmania does not have a state-based waste levy). A reporting tool used by most Tasmanian landfills is available online[8].

Guidance on several key subcategories of waste is provided in Tasmania's *Landfill Sustainability Guide 2004*[9].

No legal definitions exist in Tasmania for C&I, C&D and related waste stream classifications. An informal agreement on terms for reporting and their definitions has been circulated and agreed among stakeholders, despite the lack of specific legislative and regulatory bases for the terms. However, reporting in the standard categories of MSW, C&I and C&D is generally not available for Tasmania.

The definition of *inert waste* is material based: waste which will not degrade in the short term, and which has a negligible risk to the environment. *C&D* is essentially the same however the definition also includes the activity from which the material was sourced.

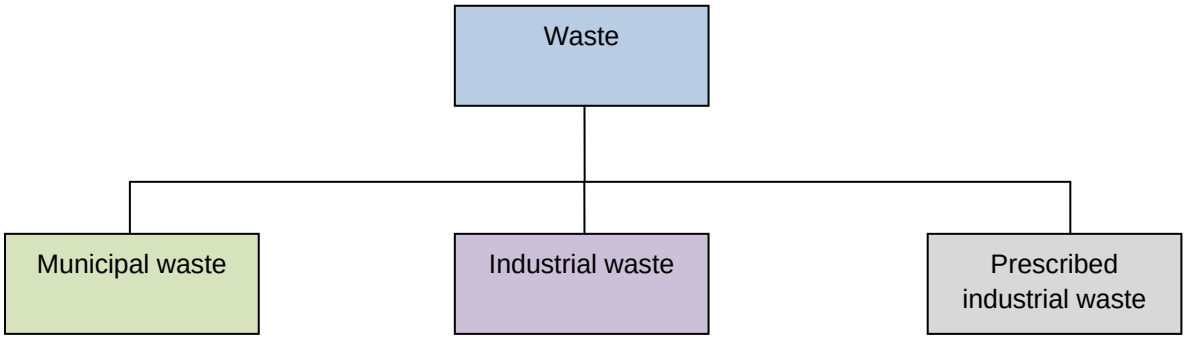
[8] Available at http://www.environment.tas.gov.au/file.aspx?id=1633.

[9] Available at http://www.environment.tas.gov.au/file.aspx?id=1706.

3.7 Victoria

The *Environment Protection Act 1970* defines waste as:

- any matter whether solid, liquid, gaseous or radio-active which is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment
- any discarded, rejected, unwanted, surplus or abandoned matter
- any otherwise discarded, rejected, abandoned, unwanted or surplus matter intended for:
  - recycling, reprocessing, recovery or purification by a separate operation from that which produced the matter
  - sale
- any matter prescribed to be waste



Victoria has instituted a system of hazard classification for prescribed industrial waste (PIW) that is the primary emphasis of the state's classification scheme. PIW destined for landfill must be categorised into one of three hazard categories: A, B or C. Category A wastes are banned from landfill and require treatment before disposal. Category B and C wastes can be accepted at best practice landfills that have approval from the EPA to accept such wastes. The aim of the categorisation framework is to improve treatment standards and achieve greater waste separation to help identify further avoidance, re-use or recycling opportunities. There are different landfill levies[10] for Category B, Category C and asbestos.

The *Environment Protection (Industrial Waste Resource) Regulations 2009* established a system of controls over the management of industrial and prescribed wastes, in addition to classifying the wastes. With the introduction of these regulations, the *Industrial Waste Management Policy (Prescribed Industrial Waste) 2000* has been revoked.

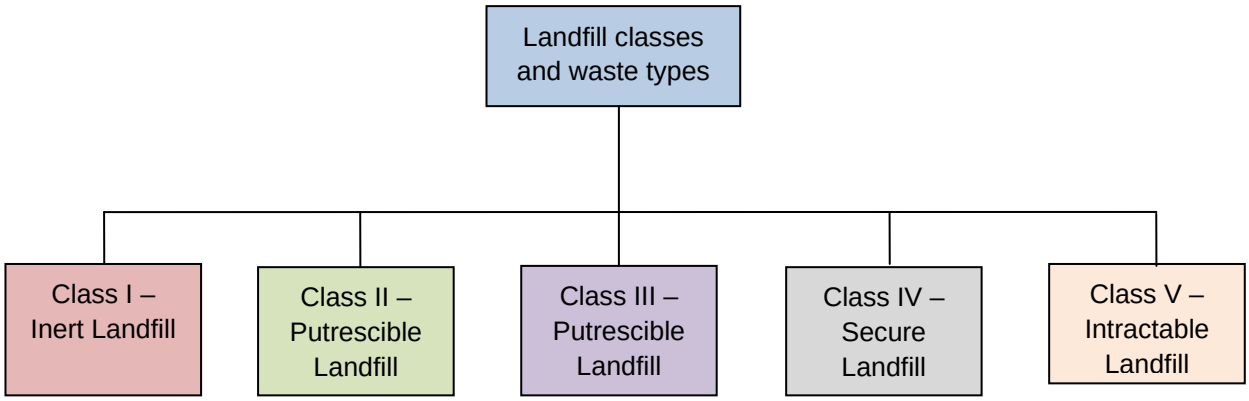
Victoria classifies municipal wastes using non-legislated general categories in order to assist development and implementation of Sustainability Victoria's various waste minimisation programs. Reporting also incorporates the standard categories of MSW, C&I and C&D.

[10] Available at http://www.epa.vic.gov.au/waste/landfill_levies.asp.

3.8 Western Australia

Waste is defined under the *Waste Avoidance and Resource Recovery Act 2007* as matter whether useful or useless, which is discharged into the environment; or matter which is prescribed by the regulations to be waste.

Below are the criteria to be applied in determining classification of wastes for acceptance to landfills licensed or registered in Western Australia in accordance with Part V of the *Environmental Protection Act 1986*.



Western Australia's waste classification approach focuses on the type of landfill suitable for disposal of specific classes of waste rather than being defined by the waste streams. WA's approach is therefore more management-based than risk-based, although the classifications themselves have risk-based elements.

One point of distinction in WA's classification approach is reference to 'intractable waste', which cannot be treated to a lower level of toxicity or made easier to manage and therefore cannot be disposed of in Class I to Class IV landfills. Examples include radioactive waste and significantly contaminated soils, industrial sludges and some spent catalyst wastes. Another distinction is that whilst some jurisdictions (ACT, NSW, Queensland, SA) specifically define/classify liquid wastes and others address characteristics of liquid wastes indirectly, in WA landfills are not allowed to collect liquid wastes; only solid wastes are allowed.

The landfill classifications, wastes permitted in each landfill class and waste definitions are provided in Landfill Waste Classification and Waste Definitions 1996 (as amended December 2009)[11].

Western Australia uses standard categories for reporting the main waste groupings based on the source of waste generation: MSW, C&I and C&D.

[11] Available at http://www.zerowastewa.com.au/disposal/businessindustry/.

4 ISSUES/AREAS OF UNCERTAINTY

Although there are some similarities across jurisdictional waste classifications, such as general consistency in application of the Movement of Controlled Waste National Environment Protection Measure[12], jurisdictional approaches can vary significantly.

Even where jurisdictions adopt comparable approaches to classifications, different terms may be applied to comparable wastes. For example, 'hazardous waste' is designated as 'regulated waste' in Queensland, 'listed waste' in South Australia, 'controlled waste' in Tasmania and Western Australia, and as 'prescribed industrial waste' in Victoria. This may or may not be a problem depending on the impact in the market place.

Most Australian jurisdictions use waste classifications in permitting and licensing, and to determine treatment and disposal methods. Beyond these common uses, jurisdictions can vary significantly in their primary uses of waste classifications. For example, Victoria's approach focuses primarily on prescribed industrial waste while Queensland's classifications serve primarily to drive wastes toward specific treatment paths. New South Wales' classifications incorporate a risk-based approach that primarily affects disposal options for specific wastes. In Western Australia and South Australia, waste classifications are used primarily to direct wastes to specific disposal facilities best suited for those classes of waste.

Classifications for reporting purposes may vary significantly from regulatory/ management classifications. Six of the eight jurisdictions report using main waste groupings based on the source of waste generation (MSW, C&I, C&D, etc). Two jurisdictions consulted highlighted the consistency of their reporting classifications with that of the Australian Waste Database[13]. Reporting requirements utilised by the jurisdictions may also vary from management approaches since most jurisdictions tie permitting and reporting requirements in with waste levy collections (Queensland and Tasmania do not currently have waste levies in place, although this will change in Queensland in 2011).

Differences may arise between jurisdictions as a result of inclusion of different materials (say biosolids, clean fill, waste from local government activities, etc.) in the different reporting classifications (say C&I or MSW); this situation can result in data distortions when trying to compare between jurisdictions. For instance, Queensland does not collect data on MSW, but could 'bundle' different materials together for reporting purposes. This would still vary from what the other jurisdictions report as MSW. Similarly, classifications of medical/clinical or related wastes are highly varied. These differences increase regulatory uncertainty and may increase compliance costs for waste management and related companies.

Additional discussion of varying data requirements is provided in the *National Waste Report 2010*.

[12] http://www.nepc.gov.au/taxonomy/term/46

[13] As an example, see Tasmania's use of the Australian Waste Database classifications at http://www.environment.tas.gov.au/file.aspx?id=1908.