

Reporting hazardous waste under the Basel Convention - guidance to states, territories and the Commonwealth (2014 data)

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CONTENTS

1.	Introduction.....	1
1.1	What is this document?	1
1.2	Why is guidance needed?	1
1.3	How state and territory data is translated to the Basel Y-codes.....	1
1.4	Using the guidance	2
1.5	The structure of this document	3
2.	The Basel Convention and Australia’s obligations	4
3.	Jurisdictional data quality considerations	5
3.1	Waste sent interstate	5
3.2	Waste exported internationally.....	6
3.3	Waste transported under regulatory exemptions.....	6
3.4	Multiple counting.....	6
4.	Y-code mapping	8
4.1	Jurisdiction codes to NEPM Codes.....	9
4.2	NEPM codes to Basel Y-codes.....	22
5.	Instructions.....	31
5.1	Distribute the tools and communicate timeline requirements.....	31
5.2	Insert data.....	31
5.3	Validate and submit the data	33
5.4	Collate and review the submitted data	33
5.5	Adjust the data.....	33
5.6	Add international export data	38
5.7	Report to Basel	38
5.8	Maintain this guidance and the Basel data workbook	38
Appendices		
A.1	Controlled Waste NEPM Waste Codes	40
A.2	Australian Capital Territory Controlled Waste Codes.....	43
A.3	Northern Territory Controlled Waste Codes	45
A.4	New South Wales Trackable Waste Codes	48
A.5	Queensland Regulated Waste Codes.....	50
A.6	South Australia Listed Waste Codes	52
A.7	Tasmania Controlled Waste Codes.....	54
A.8	Victoria Prescribed Industrial Waste Codes.....	57
A.9	Western Australia Controlled Waste Codes	60
A.10	Basel Y-codes	63

Figures

Figure 1:	Mapping Hazardous Waste: Jurisdiction codes → NEPM codes → Basel Y-codes	9
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Tables

Table 1:	Adopted actions for NEPM codes that do not have a Victorian code equivalent	17
Table 2:	Adopted translations for Victorian codes not included in NEPM code list	18
Table 3:	Adopted translations for WA codes not included in NEPM code list	21
Table 4:	Adopted translations from NEPM codes to Basel Y-codes	23
Table 5:	Adopted Y-code translations for additional NEPM codes	26
Table 6:	NEPM codes without Y-codes: options considered	28
Table 7:	Options available for jurisdictions to validate their converted data	33
Table 8:	Gaps and weaknesses in jurisdictional tracking system data and methods for adjusting them.....	35

Abbreviations & glossary

Basel Convention	<i>The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal</i> . The Convention puts an onus on exporting countries to ensure that hazardous wastes are managed in an environmentally sound manner in the country of import.
Controlled Waste	Waste that falls under the control of the Controlled Waste National Environment Protection Measure. Generally equivalent to hazardous waste, although definitional differences of the latter exist across jurisdictions
Controlled Waste NEPM	National Environment Protection (Movement of Controlled Waste between States and Territories) Measure.
Hazardous waste	A hazardous waste, as defined in the Australian Government's <i>National Waste Policy: Less waste, more resources</i> (2009), is a substance or object that exhibits hazardous characteristics, is no longer fit for its intended use and requires disposal. Hazardous waste means: (a) waste prescribed by the regulations, where the waste has any of the characteristics mentioned in Annex III to the Basel Convention; or (b) wastes covered by paragraph 1(a) of Article 1 of the Basel Convention; or (c) household waste; or (d) residues arising from the incineration of household waste; but does not include wastes covered by paragraph 4 of Article 1 of the Basel Convention.
The Hazardous Waste Act	<i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i>
Interstate data	Data collected about hazardous waste generated in one jurisdiction and treated in another, through cross-border transport under the Controlled Waste NEPM
Intrastate data	Data collected about hazardous waste generated, transported and treated within the one jurisdiction
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
Tracked data	Hazardous waste collected under the arrangements of a tracking system
Tracking system	Jurisdiction-based hazardous waste tracking systems, which are in place in New South Wales, Queensland, South Australia, Western Australia and Victoria. These tracking systems can be either online, paper-based, or a combination of both these mechanisms.

Treatment	Treatment of waste is the removal, reduction or immobilisation of a hazardous characteristic to enable the waste to be reused, recycled, sent to an energy from waste facility or disposed.
Waste	(For data collation purposes) is materials or products that are unwanted or have been discarded, rejected or abandoned. Waste includes materials or products that are recycled, converted to energy, or disposed. Materials and products that are reused (for their original or another purpose without reprocessing) are not solid waste because they remain in use.
Waste arisings	Hazardous waste is said to 'arise' when it is delivered to processing, storage, treatment, or disposal infrastructure. This is distinct from 'waste generation', a term commonly used in waste reporting, in that if waste is transported to more than one site it may 'arise' more than once.
Waste Code	Three-digit code typically used by jurisdictions to describe NEPM-listed wastes. These are also referred to as 'NEPM codes' although it is noted that the actual codes do not appear in the NEPM itself.
Waste fate	Refers to the destination of the waste within the set of defined end points. It includes reuse, treatment, recycling, energy recovery, disposal and (provisionally) storage. Waste transfer should not be generally considered a waste fate. The term fate does not infer that the waste material is destroyed or lost.
Waste generation	Typically, waste generation = resource recovery (recycling + energy recovery) + disposal. For the purposes of this report however, waste generation means what has been reported by jurisdictional data providers as waste generation.

1. Introduction

1.1 What is this document?

This document provides and summarises guidance to the states and territories on how to contribute data for Australia's annual reporting under the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* (referred to hereafter as the [Basel Convention](#)). It also provides guidance to the Australian Government on how to compile the data.

This document accompanies a Microsoft Excel *Basel data workbook*. Copies of this workbook are provided annually to each jurisdiction for entering their hazardous waste data, and are used by the Australian Government to collate the data, fill data gaps and present the final data for submission to the Basel Secretariat.

This document and the workbook were initially produced by consultants to the Department in 2013-14. This document supersedes the previous guidance issued in November 2014.

1.2 Why is guidance needed?

As a signatory to the Basel Convention, Australia has agreed to provide an annual report on the tonnages of hazardous waste it generated, broken down into the Convention's 'Y-code' classification. Hazardous waste in Australia is regulated by the states and territories, which variously describe these waste types as *controlled, trackable, prescribed, listed or regulated* wastes. Most operate a tracking system to ensure that hazardous waste is appropriately managed. The tracking system generates data that is relied upon to compile Australia's annual Basel Convention report.

Since the categories of hazardous waste used by the various jurisdictions differ, jurisdictional hazardous waste data needs to be translated into the categories defined by the Basel Convention (Y-codes), to obtain a nationally consistent report. Historically, each jurisdiction translated its own waste data into the national reporting spreadsheet, which was then collated by the Australian Government. It is likely that this resulted in inconsistent translations that affected the quality of the reporting.

This document and *Basel data workbook* were produced in consultation with the states and territories. Their aim is to make the annual task of submitting hazardous waste data to the Australian Government easier, quicker and more consistent, by adopting a method of mapping each jurisdiction's waste classification system to a common platform.

This document and the workbook are 'works in progress' and, it is hoped, will be incrementally improved over time. Jurisdictional feedback is welcomed.

1.3 How state and territory data is translated to the Basel Y-codes

The *Basel data workbook* contains a worksheet for each jurisdiction listing the categories of hazardous waste and mapping them to the Basel Convention Y-codes. The mapping has two-steps:

1. The jurisdictional codes are mapped to those used by the *National Environment Protection (Movement of Controlled Waste between States and Territories) Measure* (referred to hereafter as the [NEPM](#)). The NEPM supports the jurisdictional regulation of hazardous waste by providing a consistent approach for controlling hazardous waste that is transferred between jurisdictions. The NEPM establishes 75 categories for hazardous waste but requires reporting only within 15 broader categories. In general,

the translation of jurisdictional waste codes to NEPM codes is better established and understood than the direct translation to Basel Convention Y-codes.

2. The NEPM codes are mapped to the Basel Convention Y-codes.

More information on this process is given in section 4 of this document. The data translation process is automated – jurisdictional reporters need only to enter their data into the yellow highlighted cells provided in the relevant worksheet.

Basel Convention reporting is required on a calendar year basis whereas other jurisdictional reporting of these wastes, such as for the NEPM, typically collect and report data by financial year. In order to allow for the collation of the data, the worksheet requests that data is entered in six-month groups.

1.4 Using the guidance

The *Basel data workbook* has been designed to be simple, self-explanatory and automated. It includes instructions on how to enter and validate your data, and provides contact details for queries to the Australian Government.

This document provides supporting information on the Basel convention, the data translations that have been applied and justification for these translations where they are not obvious.

Waste information requested from states and territories

The *Basel data workbook* has been designed to collect data on waste generated within the jurisdiction, as required by the Basel Convention to satisfy Australia's reporting requirement. This includes waste that is destined for a fate located within that jurisdiction or a fate located outside that jurisdiction, including international export under the permit system of the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* (the Hazardous Waste Act).

Please ensure that, to the extent practicable, waste arising from transfer or consolidation is not double counted. Information on how waste is managed (i.e. treated, recycled, sent to landfill, or to another jurisdiction) is not sought. If you are unable to distinguish wastes generated within your jurisdiction from wastes transported from other jurisdictions, please make note of this in the workbook. The latest version of the workbook provides a 'jurisdictional advice and comments' area at the foot of the data entry worksheet for you to provide such information.

Guidance for the Australian Government

The *Basel data workbook* is used by the Australian Government in carrying out its responsibilities as managers of the Basel data collection and submission process. Information about this usage is given in Section 5 of this document.

Changes to this edition of the Guidance

This guidance has been updated to include:

- advice on the reporting of waste arising in one jurisdiction but treated in another (through cross-border transport under the Controlled Waste NEPM)
- advice on reporting of waste arisings that are sent to international export under the permit system of the Hazardous Waste Act
- advice on the impact that regulatory exemptions can have on waste arisings data, if such an exemption covers the use of waste transport certificates, and strategies to account for this
- advice on multiple counting of waste within the data sets when waste moves between more than one site
- a simplification of the data validation protocol, requiring only one iteration for the jurisdictions except where potential anomalies are identified
- detailed minor adjustments and corrections.

1.5 The structure of this document

The document is structured as follows:

Section 1 – Introduces the suite of guidance and tools developed for states, territories and the Australian Government to help with the collection of hazardous waste data for annual reporting under the Basel Convention.

Section 2 – Provides a brief overview of the Basel Convention, its obligations on Australia and how Australia manages those obligations.

Section 3 – Provides a discussion of key data quality difficulties that are common when jurisdictional tracking data is used for reporting under Basel.

Section 4 – Provides the justification for, and the outcomes of, a detailed translation process which maps individual jurisdictional waste codes to ultimate Basel Convention Y-codes. The translation processes are specific to each jurisdiction and are automated within the *Basel data workbook* supplied in the guidance material suite.

Section 5 – Provides step-by-step instructions to the jurisdictions and Australian Government on how to manage the Basel process, including data entry, validation, collation, adjustment, reporting and other tasks.

Appendices – Provide comprehensive jurisdiction-by-jurisdiction lists of the waste codes used in tracking and managing hazardous wastes across Australia, including the classification system used by the Controlled Waste NEPM for interstate waste movements and the Basel Convention's listing of Y codes.

2. The Basel Convention and Australia's obligations

The *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* (referred to hereafter as the [Basel Convention](#)), which regulates the movement of hazardous wastes across international boundaries, came into force in 1992. It requires parties to:

- avoid or minimise the generation of hazardous wastes
- manage the wastes they produce in an environmentally-sound manner
- control (and reduce) any transboundary movements that are still required
- report annually on their performance and
- prevent and punish illegal traffic.

The Convention puts an onus on exporting countries to ensure that hazardous wastes are managed in an environmentally sound manner in the country of import. These obligations are placed on countries that are party to the Convention. 151 Countries have ratified the Basel Convention as at December 2002.

Australia signed the Basel Convention in 1992. The Convention is implemented in Australia by the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*, which is intended to ensure that exported, imported or transited hazardous waste is managed in an environmentally sound manner.

The Australian Government is obliged to submit an annual report to the Basel Secretariat containing the tonnages of hazardous waste that generated in the country each calendar year. This data provides a baseline and backdrop to discussions about Australia's progress with efforts to better manage its hazardous waste. The data must be reported using the Basel Convention's classification system known as Y-codes.

Hazardous wastes are variously referred to across Australia as prescribed, trackable, controlled, regulated or listed waste. Many State and territory governments collect tonnage data on these wastes as part of their regulatory role in managing hazardous waste and its potential for impact on the environment and human health. As part of co-operative arrangements between the different levels of government, the states and territories forward the data to the Australian Government for collation and submission to the Basel Secretariat in Switzerland.

3. Jurisdictional data quality considerations

Due to their inherent characteristics and purpose, waste arisings data derived from jurisdictional waste tracking systems (where they exist) have common, as well as jurisdiction-specific, limitations. These can lead to both over and under estimation of waste generation data. The common issues are:

1. waste sent interstate may be absent from jurisdiction-reported arisings
2. waste exported internationally (under the Hazardous Waste Act) is likely to be absent from jurisdiction-reported arisings
3. waste transported under regulatory exemptions (from the use of tracking systems) are absent from jurisdiction-reported arisings
4. multiple counting of waste occurs when waste moves (transits) between more than one site.

A description of these issues and approaches to account for them are discussed below.

3.1 Waste sent interstate

Through the process of interrogation of 2012-13 tracking data in the *Hazardous Waste Infrastructure and Data Project*¹, anomalies leading to significant under-reporting of arisings were identified in the New South Wales, Victorian and Queensland datasets. These were for lead acid batteries, waste oils and pesticides respectively. All three wastes have a similar characteristic: their respective national markets are dominated by treatment facilities concentrated in a particular state, which gives rise to large one-way interstate movements of waste.

In each case the receiving state appears to capture better data on the import end of the transaction than the sending state does on the export end of the transaction. In two of these examples, the receiving state collected the only data on the interstate movement.

These examples suggest that wastes bound for interstate export are captured partially or not at all in sending states' estimates of arisings from their tracking systems. It seems that the receiving state takes carriage of the tracking data, which makes sense from a regulatory risk management point of view but leaves a hole in the arisings data of the originating state. This potentially leads to under-reporting of arisings in the originating state.

This may be occurring because the receiving state has more incentive to record the movement – not only does it have legal carriage of the waste should there be a pollution event or accident, but it also has the responsibility to report all waste received into its jurisdiction, specifically from every other jurisdiction, in its annual Controlled Waste NEPM report. Practically, receiver copies of interstate transport certificates may not make it back to the jurisdiction of origin, resulting in incomplete records at the sender end.

Not reporting interstate exports of waste in sending jurisdiction arisings has most impact in cases where a large proportion of a particular waste is sent to a single jurisdiction, when the interstate component of the total arising is large, such is the case with lead acid batteries.

Instructions on how to correct for 'missing' interstate waste are given in Section 5.2.

¹ Blue Environment in partnership with Ascend Waste and Environment and Randell Environmental Consulting (2015). *Hazardous Waste in Australia* final report for the Australian Government Department of the Environment. Not published at the time of writing.

3.2 Waste exported internationally

Waste exported internationally (under the Hazardous Waste Act) is likely to be absent from jurisdiction-reported arisings. Data on these 'transboundary' movements is collected by the Australian Government through the hazardous waste export permit process. This data will be reported, alongside jurisdiction-reported data, by the Australian Government as part of the compilation of the national Basel report, as described in Section 5.5.

3.3 Waste transported under regulatory exemptions

Waste transported under regulatory exemptions (from the use of tracking systems) is absent from jurisdiction-reported arisings. Ignorance of this fact can lead to significant under-reporting of arisings of these wastes.

Spent lead acid battery acid wastes destined for reuse (captured within D220) and used oil going to a re-refining fate (both in NSW) are two examples of a significant volume waste having a waste tracking exemption. Used oil transporters in Victoria may also apply for an exemption from using transport certificates, and the Victorian data suggest that many do.

These situations, particularly the blanket ones in NSW, create major gaps in data on waste arisings compiled from tracking data. Between NSW and Victoria, due to their respective exemptions, as much as 175,000 tonnes of waste oil appeared to be absent from tracking data in 2012-13.

Instructions on how to fill gaps in data due to regulatory exemptions are given in Section 5.2.

3.4 Multiple counting

A given mass of hazardous waste may be counted more than once in the hazardous waste tracking data. This will lead to multiple-counting where the pathway of a hazardous waste includes one or more of the following:

1. waste transfer, whereby a facility accepts waste then sends it unchanged to another waste company, potentially with prior on-site accumulation
2. waste storage, whereby a facility accepts waste for storage and may then later send it for processing or disposal
3. waste treatment producing hazardous waste that is sent for further processing or disposal, such as dewatering or addition of binding substances such as lime prior to landfilling.

These three pathways vary in the extent to which a multiple count can and should be identified in hazardous waste data. Each is discussed below.

For waste transfer, the matter is straightforward. This 'fate' is almost inevitably associated with a multiple count. Where tonnes to that fate can be discerned in tracking system data, the reported data set is improved if they are deducted.

For storage, it is more complex. In a stable waste system where flows of waste to storage are, in the medium term, approximately equal to flows out of storage, there is a clear multiple count in including both flows into and out of storage. However, in some circumstances waste flows into storage at a lower rate than it leaves storage – for example where quantities are growing and local treatment options are unable to service the supply. For example, coal seam gas wastes are primarily produced in Queensland and classified as C100 *Basic solutions or bases in solid form* and D300 *Non-toxic salts*. These wastes are

currently accumulating in evaporation and storage ponds. If these quantities were excluded from the reported data, large actual tonnages would be omitted from national and international reporting. It is difficult to distinguish between storage in these two circumstances, and therefore the data set is not necessarily improved if tonnages allocated to the fate 'storage' are deducted.

For the residues of waste treatment, things are different again. Treatment changes both the mass and hazard characteristics of the waste, which arguably results in a different material arising after treatment. So although a given mass may be counted more than once, there is a reasonable argument that this material has 'arisen' more than once. Consequently, the data set is not necessarily improved if hazardous residues from treatment processes are deducted.

Instructions on how to adjust hazardous waste data sets to account for multiple counting are given in Section 5.2.

4. Y-code mapping

For the most part the states and territories use waste categorisation codes and descriptions similar to those adopted by the *National Environment Protection (Movement of Controlled Waste between States and Territories) Measure* (Controlled Waste NEPM). There are, however, many instances where the waste descriptions vary either a little or a lot from NEPM descriptions, and this can make it difficult to match corresponding waste types across jurisdictions, never mind the next step of aggregating data for Basel reporting.

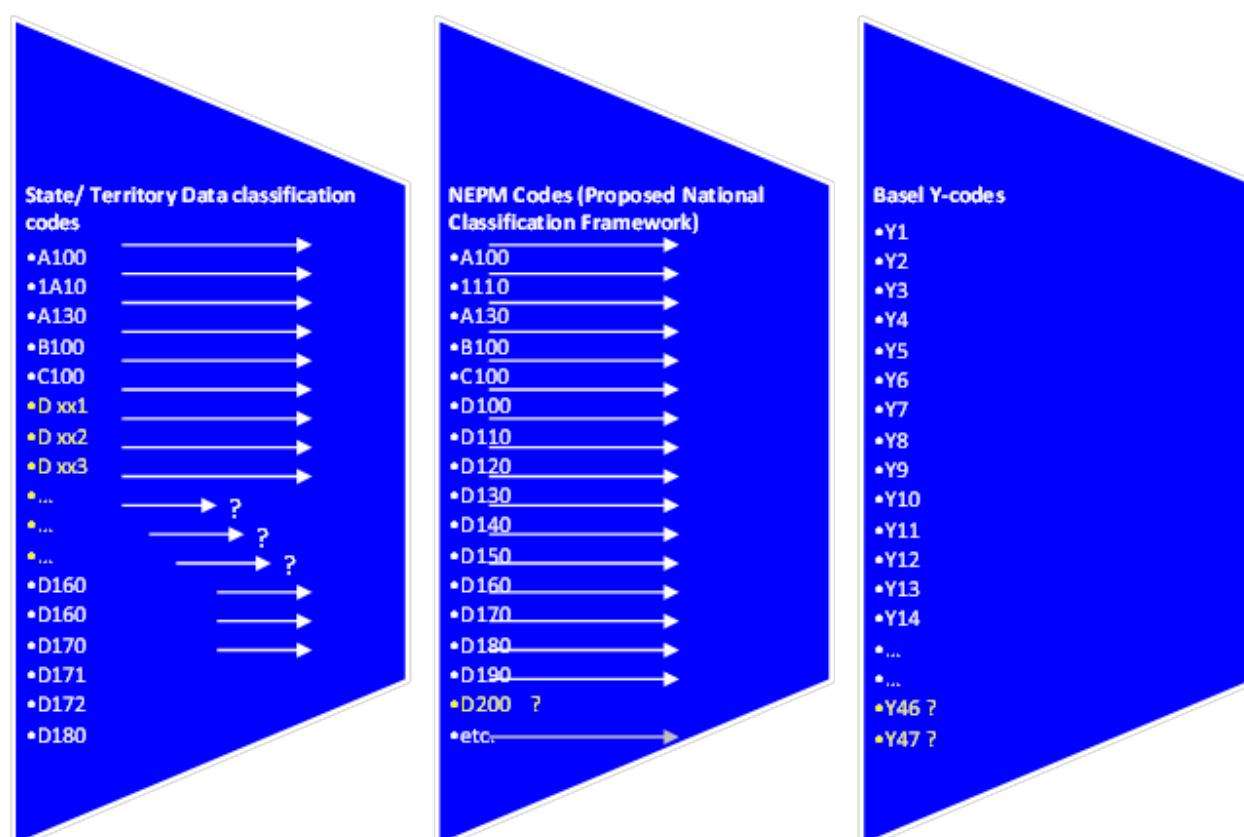
The first step in improving Australia's hazardous waste data and reporting is to address these different jurisdictional approaches and systems of classification and coding of hazardous wastes types. We have tackled this by mapping Basel Y-code waste categories back to original jurisdiction-based waste codes, typically used in waste tracking and management systems employed at the jurisdictional level.

The Y-code mapping involves a 2-step translation protocol:

1. For each jurisdiction, start with each waste category/ code and match or translate it to a potentially common Australian coding approach, chosen as the Controlled Waste NEPM 75 category list, (Schedule A, List 1 of the NEPM).
2. Common for all jurisdictions, map each of the NEPM 75 codes into the most appropriate of the 47 Basel Y-codes. In cases where no clear Y-code can be found to accommodate a NEPM code translation, the following alternatives have been explored:
 - a) multiple NEPM codes may be appropriate to map into a single Y-code
 - b) a NEPM code may belong (and therefore be split into) more than one Y-code
 - c) a limited number of 'new' Basel categories, additional to Y-codes, has been created to ensure that hazardous waste recognised in Australia's national data set are not excluded from that reported to the Basel Secretariat.

These three classification frameworks and how they fit in the mapping process are depicted in Figure 1.

Figure 1: Mapping Hazardous Waste: Jurisdiction codes → NEPM codes → Basel Y-codes



The above translation is described in this section, and its logic forms the basis of the *Basel data workbook* designed to collect hazardous waste data from jurisdictions in their classification system, and automatically populate this data into both the NEPM system and the Basel classification framework. This approach fulfils a number of the project's objectives relating to improved guidance tools, ease of jurisdictional reporting, improved data quality and consistency of approaches across jurisdictions.

4.1 Jurisdiction codes to NEPM Codes

Since each state or territory takes a slightly different approach to hazardous waste classification, the translation process from jurisdiction data to NEPM code data is described separately for each state and territory.

The accompanying *Basel data workbook* captures all waste code translations specific to your jurisdiction. The logic that underpins allocation decisions in taking wastes from each State or Territory and mapping them into NEPM codes is outlined below.

The list of NEPM codes that forms the common Australian coding approach is shown in Appendix A.1.

To guide allocation decisions for jurisdictional waste codes that do not neatly fit into NEPM classifications, the following questions have been considered:

- Could it be reasonably fitted into an existing NEPM code?
- Is it listed as a Basel Y-code (Annex I and II of the Basel Convention)?
- Is it listed in Annex VIII List A of the Basel Convention, as a hazardous waste?

- Is it listed in Annex IX List B of the Basel Convention, as not a hazardous waste (noting that wastes listed here could still end up being classified as hazardous under the Convention if they have hazardous properties)?

Issues of classification and translation specific to each State and Territory, and how they have been dealt with in the *Basel data workbook*, are discussed under the respective headings below. Where issues are common to most or all, these are discussed immediately below.

Classification issues common to all jurisdictions

Categories requiring a nationally consistent approach are:

- *Sewage sludge and residues including nightsoil and septic tank sludge* is referred to as K130 in New South Wales, Queensland, South Australia and Tasmania, can be loosely mapped to two codes in Western Australia (1.01 and 1.05) and is not classified as hazardous waste at all in the Australian Capital Territory, Northern Territory and Victoria. In addition K130 (or a similar variant) does not exist as a NEPM code waste. As part of the Australian Government's 'Hazardous Waste Data Assessment Project 2012', only WA and Qld collected data for this waste as part of their tracking system. The fact that it is generated by all states and territories in large tonnages is not disputed. The key questions are:
 - should it be counted as hazardous waste for the purposes of Basel reporting?
 - If so, how is it best estimated, given only two states track it (and even those do not define it in the same way²)?
- NEPM description *Industrial Washwater* is not listed in Schedule A List 1 of NEPM (therefore has no NEPM code), but is listed as part of the '15' high level headings in jurisdictional NEPM annual reporting. Only Victoria classify this waste and in practice only Victoria has reported this category under NEPM reporting in recent years. A decision needs to be made as to the inclusion or exclusion of *Industrial Washwater* as a hazardous waste for Basel reporting purposes.
- Tyres (NEPM code T140) are classified as hazardous waste by all jurisdictions except Victoria. However, authoritative data on end of life tyres generation tonnages³ is typically much higher than that reported by jurisdictional tracking systems. This may reflect tyres going to fates outside the reach of these tracking systems, such as illegal dumping/ storage/ burning or export. T140 is a NEPM code and consequently should be reported against. The question is how should the gap for Victoria be estimated and should tracking figures be used for other jurisdictions, given these differing source estimates?

Applying the questions posed on page 9, The Australian Government has adopted the following approach:

1. *Sewage sludge and residues including nightsoil and septic tank sludge* (K130) is not a NEPM category waste, not a Y-code, not listed on either Basel Convention Annex VIII or IX. However it is a very large waste stream in all jurisdictions and reasonable data exists on biosolids generation in Australia, publicly reported through the Australian and New Zealand Biosolids Partnership. This waste is included as part of the NEPM list and Basel reporting based on biosolids data as described in section 5. A reasonable NEPM code match is N205 *Residues from industrial waste treatment/disposal operations*.
2. NEPM description *Industrial Washwater* is excluded from the common Australian coding approach and from Basel reporting, since it is largely not collected and typically counted as part of the waste code that best describes what the wash water is contaminated with.

² See Hazardous Waste Data Summary Final Report (<http://www.environment.gov.au/resource/hazardous-waste-data-assessment>), page 9.

³ Study into domestic and international fate of end-of-life tyres – Final Report, Hyder Consulting, 2012

3. NEPM code T140 Tyres is reported and is estimated by the Australian Government as described in section 5.

Australian Capital Territory and the Northern Territory

The list of 'controlled' waste codes used in both the Australian Capital Territory and the Northern Territory are shown in Appendix A.2 and A.3 respectively.

Both the ACT's and NT's controlled waste codes are identical to NEPM codes, so no translation is required.

New South Wales

The list of 'trackable' waste codes used in New South Wales is shown in Appendix A.4.

In the main, New South Wales trackable waste codes match very well with NEPM codes, making the translation straightforward. However, New South Wales does not include some significant waste streams under its tracking system. This is due to a combination of historical reasons and specific waste exemptions from tracking, the latter being used as a regulatory incentive mechanism to encourage reuse and recycling options. These inconsistencies are:

Historically un-tracked wastes

- all of the K series NEPM codes (*Putrescible/ organic waste* codes K100, K110, K140 and K190) are not tracked in NSW, apart from interstate tracking
- NEPM code N100 *Containers and drums that are contaminated with residues of substances referred to in this list* is not tracked in NSW, apart from interstate tracking
- NEPM code N120 *Soils contaminated with a controlled waste* is not tracked in NSW, apart from interstate tracking
- NEPM code N220 *Asbestos* is not tracked in NSW, apart from interstate tracking⁴
- NEPM code T140 *Tyres* is not tracked in NSW, apart from interstate tracking⁵
- New South Wales does not track NEPM description *Industrial Washwater* (see *Classification issues common to all jurisdictions* above).

Exemptions from waste tracking⁶

- NEPM code B100 *Acidic solutions or acids in solid form*, in the specific form of spent pickle liquor, that is destined for reuse, is not tracked in NSW, apart from interstate tracking (Exemption number 2006–E-3)
- NEPM code D220 *Lead: lead compounds*, in the specific form of lead acid batteries that are destined for reuse, is not tracked in NSW, apart from interstate tracking (Exemption number 2006–E-02)
- NEPM code D230 *Zinc compounds waste*, specifically destined for reuse, is not tracked in NSW, apart from interstate tracking (Exemption number 2006–E-1)
- NEPM code J100 *Waste mineral oils unfit for their original intended use*, specifically destined for recycling, is not tracked in NSW, apart from interstate tracking (Exemption number 2006–E-4)

⁴ Note that asbestos will be captured through a separate tracking system in NSW from 1 July 2015 under new requirements in the *Protection of the Environment Operations (Waste) Regulation 2014*: <http://www.epa.nsw.gov.au/wasteregulation/asbestos-monitor.htm>

⁵ Note that tyres will be captured through a separate tracking system in NSW from 1 July 2015 under new requirements in the *Protection of the Environment Operations (Waste) Regulation 2014*: <http://www.epa.nsw.gov.au/wasteregulation/tyre-monitor.htm>

⁶ In accordance with clause 91 of the *Protection of the Environment Operations (Waste) Regulation 2014*: <http://www.epa.nsw.gov.au/wasteregulation/exemptions.htm>

- all of the R series NEPM codes (*Clinical and pharmaceutical* codes R100, R120 and R140)) are not tracked in NSW (Exemption number 2001–E-01)

Applying the questions posed on page 9, the adopted approach is:

1. Sewage sludge and residues including nightsoil and septic tank sludge (K130) - see *classification issues common to all jurisdictions* above, item 1.
2. Animal effluent and residues (abattoir effluent, poultry and fish processing wastes) (K100) and Grease trap waste (K110) are wastes generated by industries that are assumed to exist commensurate with the scale of population served. Consequently the Australian Government estimates these categories using a population surrogate approach as described in Section 5.
3. Tannery wastes (including leather dust, ash, sludges and flours) (K140) and Wool scouring wastes (K190) are not generated by industries that exist commensurate with the scale of population served in a jurisdiction, although there are known to be both tanneries and wool scourers in NSW. Waste volumes could theoretically be obtained directly from operators, but there is no defensible principle-based method to estimate wastes from these industries. No estimates of these wastes are made at this time.
4. NEPM code N100 Containers and drums that are contaminated with residues of substances referred to in this list is not (officially) tracked within NSW. However, data received in recent Basel reporting from NSW shows a significant tonnage reported in the same order of magnitude as Victoria. Despite the lack of a tracking requirement, the current reportage is more credible than any potential estimation method (of which there is no defensible principle-based method apparent) so will be accepted for reporting.
5. NEPM code N120 Soils contaminated with a controlled waste is not tracked within NSW, but it is an important hazardous waste category and is estimated by NSW EPA, based on landfill acceptance or other collected data, outside of the waste tracking system. It is anticipated that an estimate of contaminated soil arisings will be provided from landfill data. From the 2014 data collection onwards, the Basel data collection template asks that data sources are provided.
6. NEPM code N220 Asbestos is not tracked within NSW⁷, but it is an important hazardous waste category and is estimated by NSW EPA, based on landfill acceptance or other collected data, outside of the waste tracking system. It is anticipated that an estimate of asbestos arisings will be provided from landfill data. From the 2014 data collection onwards, the Basel data collection template asks that data sources are provided.
7. NEPM code T140 Tyres is not tracked within NSW, but they are an important hazardous waste category and are estimated according to *Classification issues common to all jurisdictions*, item 3 above).
8. NEPM description Industrial Washwater - see *Classification issues common to all jurisdictions*, item 2 above.
9. NEPM code B100 *Acidic solutions or acids in solid form*, in the specific form of spent pickle liquor, that is destined for reuse, is not tracked in NSW, and is not generated by industries that exist commensurate with the scale of population served in a jurisdiction, although there are known to be steel-making related industries in NSW. Waste volumes could theoretically be obtained directly from operators, but there is no defensible principle-based method to estimate wastes from these industries. No estimates of these wastes are made at this time. Refer to section 3.3.
10. NEPM code D220 *Lead: lead compounds*, in the specific form of lead acid batteries that are destined for reuse, is not tracked in NSW, although significant quantities are imported from other jurisdictions

⁷ Note that asbestos will be captured in the NSW tracking system from 1 July 2015 under new requirements in the *Protection of the Environment Operations (Waste) Regulation 2014*: <http://www.epa.nsw.gov.au/wasteregulation/asbestos-monitor.htm>

to serve recycling infrastructure located in NSW. Since the tonnage of this waste is large, and the number of operators of this infrastructure is limited in NSW, efforts should be made by NSW EPA to obtain arisings directly from operators, or other means outside of tracking systems. Refer to section 3.3.

11. NEPM code D230 *Zinc compounds* waste, specifically destined for reuse, is not tracked in NSW, and is not generated by industries that exist commensurate with the scale of population served in a jurisdiction, although there are likely to be industries in NSW that produce this waste. Volumes could theoretically be obtained directly from operators, but there is no defensible principle-based method to estimate wastes from these industries. No estimates of these wastes are made at this time. Refer to section 3.3.
12. NEPM code J100 *Waste mineral oils unfit for their original intended use*, specifically destined for recycling, is not tracked in NSW, although significant quantities are imported from other jurisdictions to serve re-refining infrastructure located in NSW. Since the tonnage of this waste is large, and the number of operators of this infrastructure is limited in NSW, efforts should be made by NSW EPA to obtain arisings directly from operators, or other means outside of tracking systems. Refer to section 3.3.
13. R series NEPM codes (Clinical and pharmaceutical) are not tracked within NSW, but they are an important hazardous waste category and are estimated by the Australian Government using a population surrogate approach as described in Section 4. Refer to section 3.3.

Queensland

The list of 'regulated' waste codes used in Queensland is shown in Appendix A.5.

Queensland's EP Regulation defines a 'trackable' waste as "a regulated waste of a type mentioned in Schedule 2E of the Regulation to which the waste tracking provisions of the Regulation apply." Six listed regulated wastes are not listed as trackable wastes in Schedule 2E. These are:

- containers contaminated with a regulated waste (N100)
- oxidising agents
- reactive chemicals (NEPM heading 'E')
- reducing agents
- tallow
- vegetable oils.

Three others are technically *trackable* but not *regulated*, but this is due to a slightly different naming convention between the two schedules, so they can be easily mapped to each other.

In the main, Queensland regulated (and trackable) waste codes closely match NEPM codes, making the translation straightforward. However, there are a few inconsistencies:

- NEPM code D200 *Cobalt compounds* is not a regulated waste in Queensland
- Queensland regulated waste E120 (*Waste of an explosive nature, other than an explosive within the meaning of the Explosives Act 1999*) is not listed as a NEPM code waste
- Queensland regulated waste *Sewage sludge and residues including nightsoil and septic tank sludge* (K130) is not listed as a NEPM code waste (see *Classification issues common to all jurisdictions* above)
- Queensland regulated waste *food processing waste*, which is actually named slightly differently in the *trackable waste* list (K200, *Liquid food processing waste*) is not listed as a NEPM code waste
- NEPM code N120 *Soils contaminated with a controlled waste* is not a regulated waste in Queensland

- NEPM code N230 *Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos* is not a regulated waste in Queensland
- Queensland does not track NEPM description *Industrial Washwater* (see *Classification issues common to all jurisdictions* above).

Applying the questions posed on page 9, the adopted approach is:

1. NEPM code N100 *Containers and drums that are contaminated with residues of substances referred to in this list* is not tracked within Queensland. The drum reconditioning industry is well-represented in Queensland, so waste volumes could theoretically be obtained directly from operators, but there is no defensible principle-based method to estimate wastes from these industries. No estimates of these wastes are made at this time.
2. NEPM heading E *Reactive chemicals* is not tracked and no defensible principle-based estimation method is available. No estimates of these wastes are made at this time.
3. Oxidising agents, reducing agents, tallow and vegetable oils are all regulated wastes that are not tracked. Since none of these wastes are explicitly listed as controlled wastes in the NEPM, no estimates of these wastes are made at this time.
4. No translation of NEPM code D200 *Cobalt compounds* in Queensland – it is not collected and will not be sought.
5. Waste of an explosive nature not subject to other legislation is listed as a different NEPM code, T200, and so translation of Queensland code E120 *Waste of an explosive nature, other than an explosive within the meaning of the Explosives Act 1999* directly into NEPM code T200 is simple and consistent with the same mapping issue in SA and Victoria.
6. In line with similar situations in Victoria and Western Australia, K200 *liquid food processing waste*) is translated to the existing NEPM code K100 *Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)*. While this translation is not ideal, it is the most acceptable of the NEPM ‘K’ codes available and there is no doubt that the broader K series description of *Putrescible/ organic waste* is entirely appropriate.
7. Sewage sludge and residues including nightsoil and septic tank sludge (K130) - see *Classification issues common to all jurisdictions* above, item 1.
8. NEPM code N120 *Soils contaminated with a controlled waste* is not tracked in Queensland, but it is an important hazardous waste category and is estimated as part of this project using alternative information sources.
9. No translation of N230 *Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos* in Queensland – it is not collected and will not be sought.
10. NEPM description *Industrial Washwater* - see *Classification issues common to all jurisdictions*, item 2 above.

South Australia

The list of ‘listed’ waste codes used in South Australia is shown in Appendix A.6.

South Australia’s listed waste codes match very well with NEPM codes, making the translation quite straightforward. However, there are a small number of departures from the NEPM:

- Like New South Wales, South Australia does not include the K series waste streams (*Putrescible/ organic waste*) under its tracking system.
- South Australia includes a non-NEPM category E120 (*Waste of an explosive nature not subject to other legislation*), along similar lines to Queensland.

- South Australia does not track NEPM description *Industrial Washwater* (see *Classification issues common to all jurisdictions* above).

Applying the questions posed on page 9, the adopted approach is:

1. Sewage sludge and residues including nightsoil and septic tank sludge (K130) - see *Classification issues common to all jurisdictions* above, item 1.
2. Animal effluent and residues (abattoir effluent, poultry and fish processing wastes) (K100) and Grease trap waste (K110) are wastes generated by industries that are assumed to exist commensurate with the scale of population served. Consequently the Australian Government estimates these categories using the population surrogate approach described in Section 5.
3. Tannery wastes (including leather dust, ash, sludges and flours) (K140) and Wool scouring wastes (K190) are not generated by industries that exist commensurate with the scale of population served in a jurisdiction. Waste volumes could theoretically be obtained directly from operators (if they exist in South Australia), but there is no defensible principle-based method to estimate wastes from these industries. No estimates of these wastes will be made at this time.
4. *Waste of an explosive nature not subject to other legislation* is listed as a different NEPM code, T200, and so translation of SA code E120 directly into NEPM code T200 is simple.
5. NEPM description *Industrial Washwater* - see *Classification issues common to all jurisdictions*, item 2 above.

Tasmania

The list of 'controlled' waste codes used in Tasmania is shown in Appendix A.7.

Tasmania's controlled waste codes match well with NEPM codes, making the translation quite straightforward. However, like South Australia, there are a small number of departures from the NEPM:

- Tasmania includes a non-NEPM category E120 (*Waste of an explosive nature not subject to other legislation*), along similar lines to Queensland and South Australia.
- Tasmania does not include N205 (*Residues from industrial waste treatment/disposal operations*) in its list of controlled wastes, but does include this identical description as T190.
- Tasmania includes an entirely new category, the "Q" series wastes (Q100, Q200, Q300, Q400 and Q500), which deal with wastes that are specifically defined in Tasmanian quarantine, dangerous goods, poisons and waste legislation.
- Tasmania includes a non-NEPM category T200 (*Oxidising Agents*), which is not a NEPM code (although is in fact a waste category listed in the NEPM itself). Note that T200 also exists as a NEPM code, but its NEPM description is *Waste of an explosive nature not subject to other legislation*, identical to Tasmania's E120.
- Tasmania includes a non-NEPM category T210 (*Reactive chemicals*), which is not a NEPM code (although is in fact a waste category listed in the NEPM itself).
- Tasmania includes a non-NEPM category T220 (*Reducing agents*), which is not a NEPM code (although is in fact a waste category listed in the NEPM itself).
- Tasmania does not track NEPM description *Industrial Washwater* (see *Classification issues common to all jurisdictions* above).

Applying the questions posed on page 9, the adopted approach is:

1. *Waste of an explosive nature not subject to other legislation* is listed as a different NEPM code, T200, and so translate Tasmanian code E120 directly into NEPM code T200 (also note '4' below).

2. Translate Tasmanian code T190 into NEPM code N205 (Residues from industrial waste treatment/disposal operations).
3. The “Q” series wastes (Q100, Q200, Q300, Q400 and Q500) do not have obvious NEPM code to map to. The following approach is adopted:
 - a) translate Q100 (A waste within the meaning of the Quarantine Regulations 2000 of the Commonwealth, as amended) into NEPM code R100 (*Clinical and related wastes*)
 - b) translate Q200, Q300, Q400 and Q500 into NEPM code T100 (*Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known*). This is not a perfect solution, but has been chosen as T100 is the closest the NEPM has to a ‘miscellaneous’ type category
4. Translate Tasmanian codes T200 (*Oxidising Agents*) and T210 (*Reactive chemicals*), into NEPM code T200 (*Waste of an explosive nature not subject to other legislation*), which also houses Tasmania’s E120. While oxidising agents and reactive chemicals are not necessarily explosive, they typically exhibit similar properties.
5. Translate Tasmanian code T220 (*Reducing agents*) into NEPM code B100 (*Acidic solutions or acids in solid form*), on the basis that some weak acids are reducing agents.
6. NEPM description Industrial Washwater - see Classification issues common to all jurisdictions, item 2 above.

Victoria

The list of ‘prescribed industrial waste (PIW)’ codes used in Victoria is shown in Appendix A.8.

While based on NEPM codes, Victoria’s PIW codes differ significantly from them. Some NEPM codes are not reflected directly as Victorian codes and there are a large number of slight differences in classification, which in many cases are relatively simply translated to NEPM codes. The latter are often examples of a more detailed breakdown of NEPM codes taken by the Victorian EPA in its approach to waste management.

These inconsistencies are:

NEPM codes without a Victorian code equivalent

- NEPM code A100 Waste resulting from surface treatment of metals and plastics is not a PIW in Victoria
- NEPM code A110 Waste from heat treatment and tempering operations containing cyanides is not a PIW in Victoria
- NEPM code D250 Tellurium; tellurium compounds is not a PIW in Victoria
- NEPM code D270 Vanadium compounds is not a PIW in Victoria
- NEPM code D340 Perchlorates is not a PIW in Victoria
- NEPM code D350 Chlorates is not a PIW in Victoria
- NEPM code M170 Polychlorinated dibenzo-furan (any congener) is not a PIW in Victoria
- NEPM code M180 Polychlorinated dibenzo-p-dioxin (any congener) is not a PIW in Victoria
- NEPM code M210 Cyanides (organic) is not a PIW in Victoria
- NEPM code T140 Tyres is not a PIW in Victoria.

Victorian codes not included in NEPM code list

There is a long list of Victorian PIW codes that are not exactly the same as the NEPM:

- inorganic chemicals codes D121, D141, D261, D390 and D400
- reactive chemical code E130
- paints, resins, inks, organic sludges codes F120 and F130
- organic solvents code G130
- pesticides code H160, H170
- oils codes J110, J130, J140 J150 and J170
- putrescible/ organic waste codes K120 and K200
- organic chemicals code M110, M120 and M130
- soil/ sludge codes N105, N110, N119, N120, N121, N130, N170, N180, N200, N250 and N260
- clinical and pharmaceutical codes R110 and R130
- miscellaneous codes T130, T160 and T170

NEPM description Industrial Washwater is not listed in Schedule A List 1 of NEPM (therefore has no NEPM code), but is reported as part of the '15' high level headings in jurisdictional NEPM annual reporting by Victoria, since it is listed as PIWs L100 *Car and truck washwaters* and L150 *Industrial washwaters from cleaning, rinsing or washing operations, NOS*.

Applying the questions posed on page 9, the adopted approach is:

1. NEPM codes without a Victorian code equivalent should be dealt with according to Table 1 below.
2. Translate the 'non-NEPM' Victorian PIW codes above into NEPM codes according to Table 2 below.
3. NEPM description (L) Industrial Washwater: While it would be possible to translate Victorian codes L100 and L150 into NEPM codes, this would require speculative assumptions. In practice it would be inconsistent to have only one jurisdiction reporting an L code waste. For simplicity, L wastes from Victoria are not reported, bringing it into line with other jurisdictions (*see Classification issues common to all jurisdictions*, page 11).

Table 1: Adopted actions for NEPM codes that do not have a Victorian code equivalent

NEPM Code	NEPM Description	Action
A100	Waste resulting from surface treatment of metals and plastics	Surface treatment of metals and plastics uses pickling acids in large quantities ¹ , alongside other chemicals. <u>Approach:</u> No further action – Reporting under Victorian code B100 (Acids in a solid form or acidic solution with pH value of 4 or less) will pick up a significant portion of this waste, which is directly translated to NEPM code B100.
A110	Waste from heat treatment and tempering operations containing cyanides	<u>Approach:</u> No further action – Reporting under Victorian code A100 (Cyanide containing wastes) includes this waste, which is translated to NEPM code A130 (Cyanides inorganic).
D250	Tellurium; tellurium compounds	<u>Approach:</u> No further action – tellurium data not collected in Victoria. NEPM code not populated for Victoria.
D270	Vanadium compounds	<u>Approach:</u> No further action – vanadium data not collected in Victoria. NEPM code not populated for Victoria.
D340	Perchlorates	This code and NEPM code D350 could both fit into the

NEPM Code	NEPM Description	Action
		broader-described Victorian category of E130 (Highly reactive chemicals, NOS). <u>Approach</u> : Split Victorian code E130 (Highly reactive chemicals, NOS) 50:50 into NEPM codes D340 and D350.
D350	Chlorates	This code and NEPM code D340 could both fit into the broader-described Victorian category of E130 (Highly reactive chemicals, NOS). <u>Approach</u> : Split Victorian code E130 (Highly reactive chemicals, NOS) 50:50 into NEPM codes D340 and D350.
M170	Polychlorinated dibenzo-furan (any congener)	<u>Approach</u> : No further action – Specific PCDF and PCDD data not collected in Victoria. NEPM code not populated for Victoria.
M180	Polychlorinated dibenzo-p-dioxin (any congener)	<u>Approach</u> : No further action – Specific PCDF and PCDD data not collected in Victoria. NEPM code not populated for Victoria.
M210	Cyanides (organic)	<u>Approach</u> : No further action – <u>organic</u> cyanides data not collected in Victoria. NEPM code not populated for Victoria.
T140	Tyres	Tyres data not tracked as prescribed waste in Victoria. <u>Approach</u> : Populate using estimation methodology (see <i>Classification issues common to all jurisdictions</i> , recommendation 1 above).

^{1.} http://eippcb.jrc.ec.europa.eu/reference/BREF/stm_bref_0806.pdf

Table 2: Adopted translations for Victorian codes not included in NEPM code list

Vic Code	Vic Description	NEPM Code translation	NEPM Description translation
D121	Equipment and articles containing mercury	D120	Mercury; mercury compounds
D141	Tannery wastes containing chromium	D140	Chromium compounds (hexavalent and trivalent)
D261	Waste from the production, formulation and use of photographic chemicals and processing materials (containing silver)	T120	Waste from the production, formulation and use of photographic chemicals and processing materials
D390	Inorganic chemicals, NOS	D300	Non-toxic salts
D400	Smelter waste containing prescribed waste	D110	Inorganic fluorine compounds excluding calcium fluoride
E130	Highly reactive chemicals, NOS.	D340, D350	As discussed in Table 1 under D340 and D350, split 50:50 into NEPM codes D340 and D350.
F120	Solvent-based wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish.	F100	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish
F130	Solvent-based wastes from the production, formulation and use of resins, latex, plasticisers, glues and	F110	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives

Vic Code	Vic Description	NEPM Code translation	NEPM Description translation
	adhesives.		
G130	Dry-cleaning wastes containing organic solvents, such as perchloroethylene	G150	Halogenated organic solvents
H160	Mixed pesticide residue.	H100	Waste from the production, formulation and use of biocides and phytopharmaceuticals
H170	Copper-chrome-arsenic (CCA).	H170	Waste from manufacture, formulation and use of wood-preserving chemicals
J110	Waste hydrocarbons.	J100	Waste mineral oils unfit for their original intended use
J130	Triple interceptor waste and stormwater contaminated with oil or hydrocarbons.	J120	Waste oil/water, hydrocarbons/water mixtures or emulsions
J140	Transformer fluids (excluding PCBs).	J100	Waste mineral oils unfit for their original intended use
J150	Other (cutting oils, soluble oils).	J100	Waste mineral oils unfit for their original intended use
J170	Used oil filters. Note: this waste must be reused or recycled and is prohibited from disposal to landfill.	J100	Waste mineral oils unfit for their original intended use
K120	Grease interceptor trap effluent	K110	Grease trap waste
K200	Food and beverage processing wastes, including animal and vegetable oils and derivatives.	K100	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)
M110	Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs) ([PCBs] >50 mg per kg)	M100	Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated naphthalenes, polychlorinated terphenyls and/or polybrominated biphenyls
M120	Solvents, oils and materials contaminated with PCBs ([PCBs] >2 mg per kg and [PCBs] <50 mg per kg)	M100	Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated naphthalenes, polychlorinated terphenyls and/or polybrominated biphenyls
M130	Non-halogenated organic chemicals (non solvent), NOS. Examples: glycol coolant, radiator fluid, brake fluid.	G110	Organic solvents excluding halogenated solvents
N105	Prescribed waste residues in rigid steel or plastic containers with an original volume greater than or equal to 200 litres (hazardous substances to be specified).	N100	Containers and drums that are contaminated with residues of substances referred to in this list
N110	Prescribed waste residues in bags or	N100	Containers and drums that are

Vic Code	Vic Description	NEPM Code translation	NEPM Description translation
	containers not specified under N100 and N105 (hazardous substances to be specified).		contaminated with residues of substances referred to in this list
N119	Category A contaminated soil - hazardous substances to be specified. (Refer to EPA guidance material for details on identifying Hazard Category). Note: these wastes must not be disposed directly to landfill without prior treatment.	N120	Soils contaminated with a controlled waste
N120	Category B contaminated soil - hazardous substances to be specified. (Refer to EPA guidance material for details on identifying Hazard Category).	N120	Soils contaminated with a controlled waste
N121	Category C contaminated soil - hazardous substances to be specified. (Refer to EPA guidance material for details on identifying Hazard Category).	N120	Soils contaminated with a controlled waste
N130	Spent catalysts (must specify contaminants).	D220	Lead; lead compounds ¹
N170	Prescribed industrial wastes that are chemically fixed and/or encapsulated	N160	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list
N180	Prescribed industrial waste that are solidified or polymerised	N160	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list
N200	Ion-exchange column residues.	D190	Copper compounds
N250	Absorbents contaminated with prescribed waste residues, such as rags contaminated with oils, hydrocarbons and organic solvents (must specify contaminants)	N100	Containers and drums that are contaminated with residues of substances referred to in this list
N260	Solid wastes contaminated with prescribed waste residues, NOS (must specify contaminants). Examples: contaminated bricks and concrete, contaminated steel, shredder floc.	N160	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list
R110	Pathogenic substances and quarantine wastes	R100	Clinical and related wastes
R130	Cytotoxic substances	R100	Clinical and related wastes
T130	Inert sludges or slurries, such as clay or ceramic suspensions, drilling mud, and pit water with negligible hydrocarbon contamination	N120	Soils contaminated with a controlled waste

Vic Code	Vic Description	NEPM Code translation	NEPM Description translation
T160	Foundry sands	N120	Soils contaminated with a controlled waste
T170	Waste chemicals in small quantities, NOS, such as collected household chemicals	T100	Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known

^{1.} Records of previously exported spent catalyst wastes show that heavy metals such as Cu, Zn, Hg, Pb, As, Cd and Sb have been reported as contaminants. The most prevalent appears to be Pb (along with Cu and Zn) and since Pb compounds represent greater hazard, this NEPM category (D220) has been chosen as the best fit translation for Victorian code N130.

Western Australia

In July 2014 Western Australia changed its 'controlled' waste categorisation system to one that aligns quite closely with that used in the Controlled Waste NEPM. This new list of controlled waste codes is shown in Appendix A.9.

While most of the new codes can be directly translated to NEPM codes, WA, like Victoria, has chosen to add a number of additional codes to allow a greater level of disaggregation of waste types than the NEPM system allows. Table 3 provides the adopted translation approach from these 'additional' WA codes to NEPM codes:

Table 3: Adopted translations for WA codes not included in NEPM code list

WA Waste Code	WA Description	NEPM '75' code	NEPM '75' Description
D141	Tannery wastes containing chromium	D140	Chromium compounds (hexavalent and trivalent)
D151	Used nickel cadmium batteries	D150	Cadmium; cadmium compounds
D211	Used nickel metal hydride batteries	D210	Nickel compounds
D221	Used lead acid batteries	D220	Lead; lead compounds
E120	Waste of an explosive nature not subject to other legislation	T200	Waste of an explosive nature not subject to other legislation
E130	Highly reactive chemicals nos	T200	Waste of an explosive nature not subject to other legislation
F120	Solvent based waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish
F130	Solvent based waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives
G130	Dry cleaning waste containing perchloroethylene	G150	Halogenated organic solvents
H130	Organochlorine pesticides	H100	Waste from the production, formulation and use of biocides and phytopharmaceuticals
J130	Oil interceptor waste	J120	Waste oil/water, hydrocarbons/water mixtures or emulsions
J170	Used oil filters	J100	Waste mineral oils unfit for their original intended

WA Waste Code	WA Description	NEPM '75' code	NEPM '75' Description
			use
J180	Oil sludge	J100	Waste mineral oils unfit for their original intended use
K130	Sewage waste from reticulated sewerage system	N205 ¹	Residues from industrial waste treatment/disposal operations.
K200	Food and beverage processing wastes	K100	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)
K210	Septage wastes	N205 ¹	Residues from industrial waste treatment/disposal operations.
L100	Car and truck wash waters	L	Note: tracking data for this waste is <u>not</u> included in Basel reporting as described above in <i>Classification issues common to all jurisdictions</i> , recommendation number 2, and further detailed in Section 5
L150	Industrial wash water contaminated with a controlled waste	L	Note: tracking data for this waste is <u>not</u> included in Basel reporting as described above in <i>Classification issues common to all jurisdictions</i> , recommendation number 2, and further detailed in Section 5
M105	Waste containing PBB, PCN, PCT	M100	Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated naphthalenes, polychlorinated terphenyls and/or polybrominated biphenyls
M130	Non-halogenated organic chemicals	G110	Organic solvents excluding halogenated solvents
R130	Cytotoxic waste	R100	Clinical and related wastes

¹ Note: for consistency this waste is estimated by the Australian Government based on biosolids data as described above in *Classification issues common to all jurisdictions*, item number 1, and further detailed in Section 5.

4.2 NEPM codes to Basel Y-codes

Section 4.1 deals with the approach taken to map individual State and Territory waste codes into NEPM codes. The second step, which is identical for all jurisdictions, is to map the nationally consistent NEPM codes into Basel Y-codes.

The full list of Basel Y codes, taken from Annex I and II of the Basel Convention, is provided in Appendix A.10.

The *Basel data workbook* captures all waste code translations, including the conversion from NEPM to Basel Y codes. The basis of these NEPM to Basel allocation decisions is outlined in Table 4 below, with Basel codes on the left and their NEPM code translations on the right.

After the mapping of Table 4 has been applied, a number of NEPM codes remain that are suitable for reporting but cannot be readily mapped to Basel Y-codes. The adopted approach creates eight new descriptions for reporting to the Basel Secretariat, referred to as 'Y+8' codes, made up from NEPM codes as mapped in Table 5. These translations are also embedded in the *Basel data workbook*.

Table 4: Adopted translations from NEPM codes to

Basel Y-codes

Basel Y Code	Y Code Description	NEPM code	NEPM Description
Y1	Clinical wastes from medical care in hospitals, medical centres and clinics	R100	Clinical and related wastes
Y2	Wastes from the production and preparation of pharmaceutical products	R140	Waste from the production and preparation of pharmaceutical products
Y3	Waste pharmaceuticals, drugs and medicines	R120	Waste pharmaceuticals, drugs and medicines
Y4	Wastes from the production..... of biocides and phytopharmaceuticals	H100	Waste from the production, formulation and use of biocides and phytopharmaceuticals
Y5	Wastes from the manufacture..... of wood preserving chemicals	H170	Waste from manufacture, formulation and use of wood-preserving chemicals
Y6	Wastes from the production, formulation and use of organic solvent	G160	Waste from the production, formulation and use of organic solvents
Y7	Wastes from heat treatment and tempering operations containing cyanides	A110	Waste from heat treatment and tempering operations containing cyanides
Y8	Waste mineral oils unfit for their originally intended use	J100	Waste mineral oils unfit for their original intended use
Y9	Waste oils/water, hydrocarbons/water mixtures, emulsion	J120	Waste oil/water, hydrocarbons/water mixtures or emulsions
Y10	Waste substancescontaining or contaminated with PCBs, PCTs, PBBs	M100	Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated naphthalenes, polychlorinated terphenyls and/or polybrominated biphenyls
Y11	Waste tarry residues ... from refining, distillation and any pyrolytic treatment	J160	Waste tarry residues arising from refining, distillation, and any pyrolytic treatment
Y12	Wastes from production..... of inks, dyes, pigments, paints, etc.	F100	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish
Y13	Wastes from production.....resins, latex, plasticizers, glues, etc.	F110	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives
Y14	Waste chemical substances arising environment are not known	T100	Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known
Y15	Wastes of an explosive nature not subject to other legislation	T200	Waste of an explosive nature not subject to other legislation
		D340	Perchlorates
		D350	Chlorates
		E100	Waste containing peroxides other than hydrogen peroxide
Y16	Wastes from production, formulation and use of photographic chemicals...	T120	Waste from the production, formulation and use of photographic chemicals and processing materials
Y17	Wastes resulting from surface treatment of metals and plastics	A100	Waste resulting from surface treatment of metals and plastics
Y18	Residues arising from industrial waste disposal operations	N205	Residues from industrial waste treatment/disposal operations

Basel Y Code	Y Code Description	NEPM code	NEPM Description
		N150	Fly ash, excluding fly ash generated from Australian coal fired power stations
		N160	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list
		N230	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos
Wastes having as constituents (Annex I to Basel Convention)			
Y19	Metal carbonyls	D100	Metal carbonyls
Y20	Beryllium; beryllium compounds	D160	Beryllium; beryllium compounds
Y21	Hexavalent chromium compounds	D140	Chromium compounds (hexavalent and trivalent)
Y22	Copper compounds	D190	Copper compounds
Y23	Zinc compounds	D230	Zinc compounds
Y24	Arsenic; arsenic compounds	D130	Arsenic; arsenic compounds
Y25	Selenium; selenium compounds	D240	Selenium; selenium compounds
Y26	Cadmium; cadmium compounds	D150	Cadmium; cadmium compounds
Y27	Antimony; antimony compounds	D170	Antimony; antimony compounds
Y28	Tellurium; tellurium compounds	D250	Tellurium; tellurium compounds
Y29	Mercury; mercury compounds	D120	Mercury; mercury compounds
Y30	Thallium; thallium compounds	D180	Thallium; thallium compounds
Y31	Lead; lead compounds	D220	Lead; lead compounds
Y32	Inorganic fluorine compounds excluding calcium fluoride	D110	Inorganic fluorine compounds excluding calcium fluoride
Y33	Inorganic cyanides	A130	Cyanides (inorganic)
Y34	Acidic solutions or acids in solid form	B100	Acidic solutions or acids in solid form
Y35	Basic solutions or bases in solid form	C100	Basic solutions or bases in solid form
Y36	Asbestos (dust and fibres)	N220	Asbestos
Y37	Organic phosphorus compounds	H110	Organic phosphorous compounds
Y38	Organic cyanides	M210	Cyanides (organic)
Y39	Phenols; phenol compounds including chlorophenols	M150	Phenols, phenol compounds including chlorophenols
Y40	Ethers	G100	Ethers
Y41	Halogenated organic solvents	G150	Halogenated organic solvents

Basel Y Code	Y Code Description	NEPM code	NEPM Description
Y42	Organic solvents excluding halogenated solvents	G110	Organic solvents excluding halogenated solvents
Y43	Any congener of polychlorinated dibenzo-furan	M170	Polychlorinated dibenzo-furan (any congener)
Y44	Any congener of polychlorinated dibenzo-p-dioxin	M180	Polychlorinated dibenzo-p-dioxin (any congener)
Y45	Organohalogen compounds other than ...(e.g. Y39, Y41, Y42, Y43, Y44)	M160	Organo halogen compounds—other than substances referred to in this Table or Table 2
Categories of wastes requiring special consideration (Annex II to Basel Convention)			
Y46	Wastes collected from households	Consultant proposes estimation method, as described in Section 5	
Y47	Residues arising from the incineration of household wastes	Limited incineration of household waste occurs in Australia, although some Waste to Energy capacity is emerging. Small amounts that are generated are likely to be captured within N205 and are not identifiable on their own. Not currently estimated.	

Table 5: Adopted Y-code translations for additional

NEPM codes

Additional waste categories not included in Y-Codes (Y+8 codes)		NEPM code	NEPM Description
Y+1	Other metal compounds	D200	Cobalt compounds
		D210	Nickel compounds
		D270	Vanadium compounds
		D290	Barium compounds (excluding barium sulphate)
Y+2	Other inorganic chemicals	D300	Non-toxic salts
		D310	Boron compounds
		D330	Inorganic sulfides
		D360	Phosphorus compounds excluding mineral phosphates
Y+3	Other organic chemicals	M220	Isocyanate compounds
		M230	Triethylamine catalysts for setting foundry sands
		M250	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials
		M260	Highly odorous organic chemicals (including mercaptans and acrylates)
Y+4	Controlled putrescible/ organic wastes	K100	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)
		K110	Grease trap waste
		K140	Tannery wastes (including leather dust, ash, sludges and flours)
		K190	Wool scouring wastes
Y+5	Waste packages and containers containing Annex 1 substances in concentrations sufficient to exhibit Annex III hazard characteristics	N100	Containers and drums that are contaminated with residues of substances referred to in this list
Y+6	Soils contaminated with residues of substances in Basel Y-codes 19-45	N120	Soils contaminated with a controlled waste
Y+7	Sludges contaminated with residues of substances in Basel Y-codes 19-45	N140	Fire debris and fire wash waters
		N190	Filter cake contaminated with residues of substances referred to in this list
Y+8	Tyres	T140	Tyres

Table 6 (below) demonstrates the derivation of Table 5's mapping of those NEPM categories without a Y-code to match, by providing alternative choices for these codes. The adopted path is shaded. The decision of which new categories to create was guided by two principles:

- and the 'orphaned' waste category should be placed in the NEPM category that provides the best description
- the number of non-Y code categories created should be minimised.

Table 6: NEPM codes without Y-codes: options

considered

NEPM Code	NEPM Description	Options considered ¹
D200	Cobalt compounds	Other metal compounds
		Other inorganic chemicals
D210	Nickel compounds	Other metal compounds
		Other inorganic chemicals
D270	Vanadium compounds	Other metal compounds
		Other inorganic chemicals
D290	Barium compounds (excluding barium sulphate)	Other metal compounds
		Other inorganic chemicals
D300	Non-toxic salts	Other inorganic chemicals
		Non-toxic salts
D310	Boron compounds	Other inorganic chemicals
D330	Inorganic sulfides	Other inorganic chemicals
D340	Perchlorates	Y15 - Wastes of an explosive nature not subject to other legislation
		Other inorganic chemicals
		Oxidising agents
D350	Chlorates	Y15 - Wastes of an explosive nature not subject to other legislation
		Other inorganic chemicals
		Oxidising agents
D360	Phosphorus compounds excluding mineral phosphates	Other inorganic chemicals
E100	Waste containing peroxides other than hydrogen peroxide	Y15 - Wastes of an explosive nature not subject to other legislation
		Other inorganic chemicals
		Oxidising agents
K100	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	Controlled putrescible/ organic wastes

NEPM Code	NEPM Description	Options considered ¹
K110	Grease trap waste	Controlled putrescible/ organic wastes
K140	Tannery wastes (including leather dust, ash, sludges and flours)	Controlled putrescible/ organic wastes
		Tannery wastes
K190	Wool scouring wastes	Controlled putrescible/ organic wastes
		Wool scouring wastes
M220	Isocyanate compounds	Other organic chemicals
M230	Triethylamine catalysts for setting foundry sands	Other organic chemicals
		Spent Catalysts
M250	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	Other organic chemicals
M260	Highly odorous organic chemicals (including mercaptans and acrylates)	Other organic chemicals
N100	Containers and drums that are contaminated with residues of substances referred to in this list	Waste packages and containers containing Annex 1 substances in concentrations sufficient to exhibit Annex III hazard characteristics
N120	Soils contaminated with a controlled waste	Soils contaminated with residues of substances in Basel Y-codes 19-45
		Soils/ sludges contaminated with residues of substances in Basel Y-codes 19-45
		Option to estimate the most prevalent contaminant (e.g. lead or oil) and categorise waste according to this (e.g. <i>lead</i> ; <i>lead compounds</i> or <i>Waste mineral oils unfit for their original intended use</i>)
N140	Fire debris and fire wash waters	Sludges contaminated with residues of substances in Basel Y-codes 19-45
		Soils/ sludges contaminated with residues of substances in Basel Y-codes 19-45
N150	Fly ash, excluding fly ash generated from Australian coal fired power stations	Y18 - Residues arising from industrial waste disposal operations
		Fly ash
N160	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list	Y18 - Residues arising from industrial waste disposal operations
		Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list

NEPM Code	NEPM Description	Options considered ¹
N190	Filter cake contaminated with residues of substances referred to in this list	Sludges contaminated with residues of substances in Basel Y-codes 19-45
		Y18 - Residues arising from industrial waste disposal operations
		Soils contaminated with residues of substances in Basel Y-codes 19-45
N230	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos	Y36 – Asbestos (dust and fibres)
		Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos
		Soils/ sludges contaminated with residues of substances in Basel Y-codes 19-45
T140	Tyres	Tyres

¹. Adopted option shown in blue shading

5. Instructions

This section provides detailed instructions to the jurisdictions and the Australian Government for running the Basel process, including data entry, validation, collation, quality assurance, adjustments, reporting and maintenance of materials and tools.

Roles and responsibilities

The states and territories provide raw data to the Australian Government, which has a responsibility to acquit Australia's hazardous waste reporting responsibility under the Basel Convention. Each jurisdiction will receive a copy of the *Basel data workbook* into which they are asked to insert and validate their data, and forward to the Australian Government.

Apart from reporting the final numbers, the Australian Government's role is to manage and facilitate the state and territory data collection process. The *Basel data workbook* has been designed to make that process as easy as possible. The Australian Government's role is to collate state and territory data, undertake a quality assessment, ensure that the gap filling and adjustment process is appropriate, insert import and export data, and submit the final data for submission to the Basel Secretariat.

5.1 Distribute the tools and communicate timeline requirements

Action by: *The Department of the Environment (or its representatives)*

Distribute the updated version of this guide and the *Basel data workbook*. Communicate the timelines for responses and where help can be obtained.

5.2 Insert data

Action by: *The states and territories*

In the green tab provided for each jurisdiction, enter the tonnes of waste generated in the yellow cells provided.

The data should be provided in six-monthly blocks (January to June; July to December). This enables use of the data for Basel reporting, which is required by calendar year, and also for other national collation purposes that may require data by financial year (e.g. for the *National Waste Report*).

Data may be obtained from a range of sources. Where jurisdictions run a tracking system, it is anticipated that this will be the source of most data. Alternative sources may also be used, and in some cases different sources may be used for different waste types.

Tracking system data may need to be adjusted to improve quality. Various aspects of data quality are discussed in Section 3. Instructions on how to make such adjustments follow.

Correct for 'missing' interstate-bound waste in arisings data

The best way to include interstate exports in a jurisdiction's arisings is to request this data from the receiving jurisdictions, which will have relatively simple access to it if they administer a tracking system. If you are certain that interstate exports are not included at all in your arisings data, simply add in the collated amounts (for each waste) provided from each receiving jurisdiction.

Alternatively, perusal of the most recently published Controlled Waste NEPM annual report will show all of your jurisdiction's exports (as imports in each other jurisdiction's report) in the format of the 15 NEPM headings. The NEPM annual report is available at:

<http://www.scew.gov.au/system/files/resources/bb58c8a4-bc71-4c85-bb18-dc8c597bde2b/files/nepc-annual-report-2012-13.pdf>.

This will not disaggregate to the NEPM 75-level of reporting required for Basel, but it will indicate where significant levels of waste are sent interstate (both how much and to whom), to assist in prioritising your effort to include interstate waste in jurisdictional arisings.

Any adjustments and additions to tracking system data should be described in the 'jurisdictional advice and comments' area of the data submission worksheet.

Fill data gaps due to regulatory exemptions

In states that run a tracking system, regulatory exemptions have sometimes been put in place to reduce regulatory burden on activities (fates) that are highly placed on the waste management hierarchy in order to encourage these environmentally beneficial outcomes. Sometimes exemptions are conditional on record keeping by the waste receiver, or the waste generator, or both. In cases where such record-keeping occurs for exempt waste, it is suggested that a jurisdiction requests this industry data to supplement or replace data collected from tracking.

Exemptions can also be company-specific and heterogeneously spread across the waste management sector, making it harder to identify where they exist. Industry data sources may not be available in these instances, meaning data correction may not be possible. However, in cases where there is significant export of an exempt waste from one jurisdiction to another (due to the location of treatment infrastructure) the interstate transaction would be subject to Controlled Waste NEPM consignment authorisation, which means data would be collected.

In the example of a Victorian waste generator/ transporter exempt from tracking (in Victoria) for oils, a waste that is exported to NSW in significant quantities, these movements would be recorded in the NSW tracking system in any case, since no exemptions exist for interstate imports of waste. Co-operative approaches between jurisdictions could help solve such a data quality problem.

Again, any adjustments and additions to tracking system data should be described in the 'jurisdictional advice and comments' area of the data submission worksheet.

Adjust hazardous waste data sets to account for multiple counting

Tracking systems may record the same waste more than once. Where jurisdictional data allow, tonnes allocated to waste transfer fates can be excluded. Using the commonly applied D and R code fate classifications, the following fates are considered to be waste transfer:

- R12 Exchange of wastes for submission to any licensed operation
- R13 Accumulation of material intended for any licensed operation
- D14 Repackaging prior to any licensed operation.

For states that run a hazardous waste tracking system, a checkbox is provided in the *Basel data workbook* to declare whether any adjustments have been carried out. Select 'Yes'⁸ if you make any adjustments, and provide details in the 'jurisdictional advice and comments' area at the foot of the data entry worksheet.

⁸ If this checkbox is not set to 'yes', the *Basel Data Workbook* automatically applies a multiple-counting correction using the approach described in Table 8.

5.3 Validate and submit the data

Action by: **The states and territories**

After the data have been inserted, click on the 'Validation' worksheet. The data entered will have been automatically converted into grams of waste per capita in the NEPM 75 codes. Three automated checks are applied to each converted datum to identify quantities per capita fitting one or more of the following criteria:

1. greater than 1000x or less than 0.001x the national annual average for the previous year
2. greater than 1000x or less than 0.001x the other six-monthly period in this year
3. greater than 500x or less than 0.0005x the quantity generated in the jurisdiction in the previous year.

Data fitting one or more of these criteria are automatically highlighted in the 'Validation' worksheet using a coding system for which a key is provided. Review these highlighted data, and use the 'Trace Precedents' function (on the 'Formulas' tab) to check the original data. Correct the original data if appropriate. For each datum in the 'Validation' worksheet, select one of the adjacent options as tabulated below.

Table 7: Options available for jurisdictions to validate their converted data

✓	Jurisdiction confirms the initial data that generate this figure (DEFAULT SETTING)
?	Jurisdiction is unable to confirm the initial data that generate this figure
R	Jurisdiction has corrected the data generating this figure (the corrections would be made in the relevant jurisdiction's worksheet)
✗	Jurisdiction believes the data generating this figure is erroneous but cannot correct it.

Forward the validated data to the Australian Government.

5.4 Collate and review the submitted data

Action by: **The Department of the Environment (or its representatives)**

Copy the data entries from each jurisdiction into a master version of the *Basel data workbook*. Check that all data have been validated by the jurisdictions. Undertake a 'reality check' on the compiled data and note any figures that appear unlikely, odd or inconsistent.

Where there are non-validated data or anomalous figures, take appropriate action such as:

- liaise with the jurisdiction to discuss
- ignoring the lack of validation or anomaly (where the quantities are immaterial)
- adjusting the data – see below.

5.5 Adjust the data

Action by: **The Department of the Environment (or its representatives)**

Review and identify means for improving the compiled data set. The data set could potentially be improved by:

- filling gaps
- replacing or enhancing jurisdictional data for which the jurisdictions have given the codes '?', or '✗' (see Table 7) with figures from consultant reports, industry or other sources

- similarly replacing or enhancing other jurisdictional data if considered appropriate (note that this means overriding jurisdictional data – a sound rationale is needed based on the principles below).

Principles for determining whether data should be adjusted

Section 4.1 details the variation in hazardous waste classification, tracking and data collection throughout the states and territories, as well as the way to overcome data gaps that could result from this diverse approach. Much of this inconsistency is dealt with by marrying jurisdictional waste codes with their best fit NEPM codes and subsequent translation into Y-codes. However, there are still a number of waste codes for which data is not collected at the jurisdictional level (through ‘gaps’ in tracking or similar administrative systems) or for which alternative or additional data may be available. In relation to data gaps, in particular, there are options for using an estimation method to ‘fill-in’ the gap(s) or leaving the waste unreported.

Expertise, judgement and potentially consultation are needed to determine whether a jurisdictional datum or an empty cell should be adjusted with data from an alternative source. In undertaking the assessment, the following principles were considered:

1. Is a waste for which no data is provided likely to have been generated in significant quantities in a jurisdiction?
2. Are there other reasons, such as policy priorities, existing programs or particular hazards posed, that justify seeking data that a jurisdiction was not able to provide?
3. Is a reasonable data source or estimation method available (such as a nationally consistent data set or average quantity per capita) that is likely to produce a more accurate or more consistent national figure than the data (or blank entry) collected from a jurisdiction?

Various adjustments are provided for in the *Basel data workbook*, in the ‘Gap data’ worksheet. These are based on:

- Using figures from various sources and reports to estimate waste quantities (tyres, biosolids and wastes collected from households [Basel code Y46])
- Using 2013 jurisdictional tonnages for each waste type combined with population data to work out the average quantity of the waste generated per capita in jurisdictions providing the data. This figure is applied to population data to estimate the quantity generated in a jurisdiction that did not provide data for that waste type.

Various adjustments have been established in the *Basel data workbook* by the consultants. These are based on adjustments made for previous years with some updated data and changes made in consultation with departmental staff. These are summarised in Table 8.

Table 8: Gaps and weaknesses in jurisdictional tracking system data and methods for adjusting them

Jurisdiction Code	NEPM Description	NEPM (or Y) Code	Estimation Method
All Jurisdictions			
K130	Sewage sludge and residues including nightsoil and septic tank sludge	N205	Replace tracking data for all jurisdictions (where it exists) with estimations from biosolids data and reported on a "wet" basis
L	Industrial washwater	L	Not estimated - inconsistently tracked across jurisdictions and typically present under codes specific to the water contaminants
T140	Tyres	T140	Replace tracking data for all jurisdictions (where it exists) with estimations from a 2015 study by Hyder Consulting for the Australian Government product stewardship team
-	Wastes collected from households	(Y46)	See section "7.4.1. Household wastes in the context of the Basel Convention" from Methodological guide for the development of inventories of hazardous wastes and other wastes under the Basel Convention, (Draft, October 2013)
-	Residues arising from the incineration of household wastes	(Y47)	Limited incineration of household waste occurs in Australia, although some Waste to Energy capacity is emerging. Small amounts that are generated are likely to be captured within N205 and are not identifiable on their own. Not currently estimated.
-	Additional waste categories not included in Y-Codes	Y+(1 – 8)	Eight new "Y+8" codes - handled by the <i>Basel data workbook</i> translations. (See Appendix A.10 for Y+8 list)
All Jurisdictions with a tracking system that do not tick the checkbox declaring they have corrected for multiple-counting			
		All NEPM codes	Multiple-counting correction: Subtract a default proportion of the waste assumed to be sent to a 'transfer' fate, calculated through an analysis of 2012-13 tracking system data from Qld and Vic using the D and R codes specified above ⁹ . It is assumed that the average across these two states is representative for other states.
New South Wales			
B100	Acidic solutions or acids in solid form	B100	This waste (only in the specific form of spent pickle liquor that is destined for reuse) is not tracked in NSW. Waste volumes could theoretically be obtained directly from steel manufacturing operators, but there is no defensible principle-based method to estimate wastes from these industries. No estimates of these wastes in addition to jurisdiction-supplied data are made at this time
D220	Lead: lead compounds	D220	This waste (only in the specific form of lead acid batteries that are destined for reuse) is not tracked in NSW. There is no defensible principle-based method to estimate wastes from these industries. No estimates of these wastes in addition to jurisdiction-supplied data are made at this time, although it is recommended that NSW examines non-tracking approaches to data gathering as this waste is large and important
D230	Zinc compounds	D230	No estimates made - no defensible principle-based method available

⁹ This approach was agreed in 2015 as part of a related Australian Government project to develop a National Waste Data Reporting and Classification System (Blue Environment in partnership with Randell Environmental Consulting and Ascend Waste and Environment, 2015, *NWDCRS supporting documentation: SOPs, reporting tool user guide, and reporting guidance*).

Jurisdiction Code	NEPM Description	NEPM (or Y) Code	Estimation Method
K100	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in NSW
K110	Grease trap waste	K110	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in NSW
K140	Tannery wastes (including leather dust, ash, sludges and flours)	K140	No estimates made - no defensible principle-based method available
K190	Wool scouring wastes	K190	No estimates made - no defensible principle-based method available
N100	Containers and drums that are contaminated with residues of substances referred to in this Table	N100	Despite not being (officially) tracked, data received in recent Basel reporting from NSW shows a significant tonnage reported in the same order of magnitude as Victoria. Despite the lack of a tracking requirement, the current reportage is more credible than any potential estimation method (of which there is no defensible principle-based method apparent) so will be accepted for reporting.
N120	Soils contaminated with a substance or waste referred to in this Table	N120	Use the most recent estimate supplied by NSW
N220	Asbestos	N220	Use the most recent estimate supplied by NSW
R100	Clinical and related wastes	R100	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in NSW
R120	Waste pharmaceuticals, drugs and medicines	R120	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in NSW
Queensland			
D200	Cobalt compounds	D200	Not estimated - no information to suggest this waste is generated in Qld
E100	Reactive chemicals	-	No estimates made - no defensible principle-based method available
N100	Containers and drums that are contaminated with residues of substances referred to in this Table	N100	The drum reconditioning industry is well-represented in Queensland, so waste volumes could theoretically be obtained directly from operators, but there is no defensible principle-based method to estimate wastes from these industries. No estimates of these wastes are made at this time.
-	Oxidising agents, reducing agents, tallow, vegetable oils	-	Not estimated – none of these four wastes are explicitly covered by NEPM codes
N120	Soils contaminated with a controlled waste	N120	Use the most recent survey data supplied by Qld
N230	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos	N230	Not estimated - no information to suggest this waste is generated in Qld

Jurisdiction Code	NEPM Description	NEPM (or Y) Code	Estimation Method
Northern Territory			
K100	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in NT
K110	Grease trap waste	K110	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in NT
N120	Soils contaminated with a substance or waste referred to in this Table	N120	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in NT
South Australia			
K100	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in SA
K110	Grease trap waste	K110	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in SA
K140	Tannery wastes (including leather dust, ash, sludges and flours)	K140	No estimates made - no defensible principle-based method available
K190	Wool scouring wastes	K190	No estimates made - no defensible principle-based method available
Tasmania			
K100	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in Tas
K110	Grease trap waste	K110	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in Tas
Western Australia			
M230	Triethylamine catalysts for setting foundry sands	M230	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in WA
N220	Asbestos	N220	Use average of data reported by other states to obtain a t/capita figure. Multiply t/capita by population in WA

Note: 1. Estimates of per capita quantities of waste generated use only validated data based on the system shown in Table 7.
2. No data gaps specific to the ACT and Victoria were identified so they are not included in Table 8.

5.6 Add international export data

Action by: The Department of the Environment

Waste exported internationally (under the Hazardous Waste Act) is likely to be absent from jurisdiction-reported arisings. Data on these 'transboundary' movements is collected by the Australian Government through the hazardous waste export permit process.

This data should be added by the Australian Government from permitting records, using the 'Imp Exp' worksheet. This data will then be reported to Basel separated from jurisdiction-derived data.

5.7 Report to Basel

Action by: The Department of the Environment

Once all data has been supplied, the quality assurance process is complete and adjustments have been made, the Australian Government must report the collated national tonnages to the Basel Secretariat, on an annual basis.

5.8 Maintain this guidance and the Basel data workbook

Action by: The Department of the Environment (or its representatives)

Each year this document and the *Basel data workbook* should be reviewed for the purposes of improvement, amendment and update. For example, the following may be required:

- updating the references to particular years or six-monthly reporting periods
- updating the validation checks to refer to the previous year's data
- review of data 'gaps' and the data and mechanisms required to fill them
- improvements to reflect lessons learned in the previous year
- updating to reflect any changes to jurisdictional classification approaches (e.g. WA during 2014).

Appendix A

A.1 Controlled Waste NEPM Waste Codes

NEPM '15' Waste Type		NEPM '75' Code	Waste Description
A	Plating and heat treatment	A100	Waste resulting from surface treatment of metals and plastics
		A110	Waste from heat treatment and tempering operations containing cyanides
		A130	Cyanides (inorganic)
B	Acids	B100	Acidic solutions or acids in solid form
C	Alkalis	C100	Basic solutions or bases in solid form
D	Inorganic chemicals	D100	Metal carbonyls
		D110	Inorganic fluorine compounds excluding calcium fluoride
		D120	Mercury; mercury compounds
		D130	Arsenic; arsenic compounds
		D140	Chromium compounds (hexavalent and trivalent)
		D150	Cadmium; cadmium compounds
		D160	Beryllium; beryllium compounds
		D170	Antimony; antimony compounds
		D180	Thallium; thallium compounds
		D190	Copper compounds
		D200	Cobalt compounds
		D210	Nickel compounds
		D220	Lead; lead compounds
		D230	Zinc compounds
		D240	Selenium; selenium compounds
		D250	Tellurium; tellurium compounds
		D270	Vanadium compounds
		D290	Barium compounds (excluding barium sulphate)
		D300	Non-toxic salts
		D310	Boron compounds
		D330	Inorganic sulfides
		D340	Perchlorates
		D350	Chlorates
		D360	Phosphorus compounds excluding mineral phosphates
E	Reactive chemicals	E100	Waste containing peroxides other than hydrogen peroxide
F	Paints, resins, inks, organic sludges	F100	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish
		F110	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives
G	Organic solvents	G100	Ethers
		G110	Organic solvents excluding halogenated solvents
		G150	Halogenated organic solvents
		G160	Waste from the production, formulation and use of organic solvents

NEPM '15' Waste Type		NEPM '75' Code	Waste Description
H	Pesticides	H100	Waste from the production, formulation and use of biocides and phytopharmaceuticals
		H110	Organic phosphorous compounds
		H170	Waste from manufacture, formulation and use of wood-preserving chemicals
J	Oils	J100	Waste mineral oils unfit for their original intended use
		J120	Waste oil/water, hydrocarbons/water mixtures or emulsions
		J160	Waste tarry residues arising from refining, distillation, and any pyrolytic treatment
K	Putrescible/ organic waste	K100	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)
		K110	Grease trap waste
		K140	Tannery wastes (including leather dust, ash, sludges and flours)
		K190	Wool scouring wastes
L	Industrial washwater	-	Not listed in Schedule A List 1 of NEPM. Heading reported as part of '15' in NEPM annual reporting
M	Organic chemicals	M100	Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated naphthalenes, polychlorinated terphenyls and/or polybrominated biphenyls
		M150	Phenols, phenol compounds including chlorophenols
		M160	Organo halogen compounds—other than substances referred to in this Table or Table 2
		M170	Polychlorinated dibenzo-furan (any congener)
		M180	Polychlorinated dibenzo-p-dioxin (any congener)
		M210	Cyanides (organic)
		M220	Isocyanate compounds
		M230	Triethylamine catalysts for setting foundry sands
		M250	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials
		M260	Highly odorous organic chemicals (including mercaptans and acrylates)
N	Soil/ sludge	N100	Containers and drums that are contaminated with residues of substances referred to in this list
		N120	Soils contaminated with a controlled waste
		N140	Fire debris and fire wash waters
		N150	Fly ash, excluding fly ash generated from Australian coal fired power stations
		N160	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list
		N190	Filter cake contaminated with residues of substances referred to in this list
		N205	Residues from industrial waste treatment/disposal operations
		N220	Asbestos
		N230	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos
R	Clinical and pharmaceutical	R100	Clinical and related wastes
		R120	Waste pharmaceuticals, drugs and medicines
		R140	Waste from the production and preparation of pharmaceutical products

NEPM '15' Waste Type		NEPM '75' Code	Waste Description
T	Miscellaneous	T100	Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known
		T120	Waste from the production, formulation and use of photographic chemicals and processing materials
		T140	Tyres
		T200	Waste of an explosive nature not subject to other legislation

Notes: Three categories from the NEPM are not expressly listed with codes:

Oxidising agents *

Reactive chemicals *

Reducing agents

* Could both be included in the code E100.

A.2 Australian Capital Territory Controlled Waste Codes

Code	Waste description	Waste type
A	Waste resulting from surface treatment of metals and plastics	A100
	Waste from heat treatment and tempering operations containing cyanides	A110
	Cyanides (inorganic)	A130
B	Acidic solutions or acids in solid form	B100
C	Basic solutions or bases in solid form	C100
D	Metal carbonyls	D100
	Inorganic fluorine compounds excluding calcium fluoride	D110
	Mercury; mercury compounds	D120
	Arsenic; arsenic compounds	D130
	Chromium compounds (hexavalent and trivalent)	D140
	Cadmium; cadmium compounds	D150
	Beryllium; beryllium compounds	D160
	Antimony; antimony compounds	D170
	Thallium; thallium compounds	D180
	Copper compounds	D190
	Cobalt compounds	D200
	Nickel compounds	D210
	Lead; lead compounds	D220
	Zinc compounds	D230
	Selenium; selenium compounds	D240
	Tellurium; tellurium compounds	D250
	Vanadium compounds	D270
	Barium compounds (excluding barium sulphate)	D290
	Non-toxic salts	D300
	Boron compounds	D310
	Inorganic sulfides	D330
	Perchlorates	D340
	Chlorates	D350
	Phosphorus compounds excluding mineral phosphates	D360
E	Waste containing peroxides other than hydrogen peroxide	E100
F	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100
	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110
G	Ethers	G100
	Organic solvents excluding halogenated solvents	G110
	Halogenated organic solvents	G150
	Waste from the production, formulation and use of organic solvents	G160
H	Waste from the production, formulation and use of biocides and phytopharmaceuticals	H100
	Organic phosphorous compounds	H110
	Waste from manufacture, formulation and use of wood-preserving chemicals	H170

Code	Waste description	Waste type
J	Waste mineral oils unfit for their original intended use	J100
	Waste oil/water, hydrocarbons/water mixtures or emulsions	J120
	Waste tarry residues arising from refining, distillation, and any pyrolytic treatment	J160
K	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100
	Grease trap waste	K110
	Tannery wastes (including leather dust, ash, sludges and flours)	K140
	Wool scouring wastes	K190
L	Not listed in Schedule A List 1 of NEPM. Heading reported as part of '15' in NEPM annual reporting	-
M	Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated naphthalenes, polychlorinated terphenyls and/or polybrominated biphenyls	M100
	Phenols, phenol compounds including chlorophenols	M150
	Organo halogen compounds—other than substances referred to in this Table or Table 2	M160
	Polychlorinated dibenzo-furan (any congener)	M170
	Polychlorinated dibenzo-p-dioxin (any congener)	M180
	Cyanides (organic)	M210
	Isocyanate compounds	M220
	Triethylamine catalysts for setting foundry sands	M230
	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250
	Highly odorous organic chemicals (including mercaptans and acrylates)	M260
N	Containers and drums that are contaminated with residues of substances referred to in this list	N100
	Soils contaminated with a controlled waste	N120
	Fire debris and fire wash waters	N140
	Fly ash, excluding fly ash generated from Australian coal fired power stations	N150
	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list	N160
	Filter cake contaminated with residues of substances referred to in this list	N190
	Residues from industrial waste treatment/disposal operations	N205
	Asbestos	N220
	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos	N230
R	Clinical and related wastes	R100
	Waste pharmaceuticals, drugs and medicines	R120
	Waste from the production and preparation of pharmaceutical products	R140
T	Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known	T100
	Waste from the production, formulation and use of photographic chemicals and processing materials	T120
	Tyres	T140
	Waste of an explosive nature not subject to other legislation	T200

A.3 Northern Territory Controlled Waste Codes

Code	Waste description	Waste type
A	Waste resulting from surface treatment of metals and plastics	A100
	Waste from heat treatment and tempering operations containing cyanides	A110
	Cyanides (inorganic)	A130
B	Acidic solutions or acids in solid form	B100
C	Basic solutions or bases in solid form	C100
D	Metal carbonyls	D100
	Inorganic fluorine compounds excluding calcium fluoride	D110
	Mercury; mercury compounds	D120
	Arsenic; arsenic compounds	D130
	Chromium compounds (hexavalent and trivalent)	D140
	Cadmium; cadmium compounds	D150
	Beryllium; beryllium compounds	D160
	Antimony; antimony compounds	D170
	Thallium; thallium compounds	D180
	Copper compounds	D190
	Cobalt compounds	D200
	Nickel compounds	D210
	Lead; lead compounds	D220
	Zinc compounds	D230
	Selenium; selenium compounds	D240
	Tellurium; tellurium compounds	D250
	Vanadium compounds	D270
	Barium compounds (excluding barium sulphate)	D290
	Non-toxic salts	D300
	Boron compounds	D310
	Inorganic sulfides	D330
	Perchlorates	D340
	Chlorates	D350
	Phosphorus compounds excluding mineral phosphates	D360
E	Waste containing peroxides other than hydrogen peroxide	E100
F	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100
	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110
G	Ethers	G100
	Organic solvents excluding halogenated solvents	G110
	Halogenated organic solvents	G150
	Waste from the production, formulation and use of organic solvents	G160
H	Waste from the production, formulation and use of biocides and phytopharmaceuticals	H100
	Organic phosphorous compounds	H110

Code	Waste description	Waste type
	Waste from manufacture, formulation and use of wood-preserving chemicals	H170
J	Waste mineral oils unfit for their original intended use	J100
	Waste oil/water, hydrocarbons/water mixtures or emulsions	J120
	Waste tarry residues arising from refining, distillation, and any pyrolytic treatment	J160
K	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100
	Grease trap waste	K110
	Tannery wastes (including leather dust, ash, sludges and flours)	K140
	Wool scouring wastes	K190
L	Not listed in Schedule A List 1 of NEPM. Heading reported as part of '15' in NEPM annual reporting	-
M	Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated naphthalenes, polychlorinated terphenyls and/or polybrominated biphenyls	M100
	Phenols, phenol compounds including chlorophenols	M150
	Organo halogen compounds—other than substances referred to in this Table or Table 2	M160
	Polychlorinated dibenzo-furan (any congener)	M170
	Polychlorinated dibenzo-p-dioxin (any congener)	M180
	Cyanides (organic)	M210
	Isocyanate compounds	M220
	Triethylamine catalysts for setting foundry sands	M230
	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250
	Highly odorous organic chemicals (including mercaptans and acrylates)	M260
N	Containers and drums that are contaminated with residues of substances referred to in this list	N100
	Soils contaminated with a controlled waste	N120
	Fire debris and fire wash waters	N140
	Fly ash, excluding fly ash generated from Australian coal fired power stations	N150
	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list	N160
	Filter cake contaminated with residues of substances referred to in this list	N190
	Residues from industrial waste treatment/disposal operations	N205
	Asbestos	N220
	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos	N230
R	Clinical and related wastes	R100
	Waste pharmaceuticals, drugs and medicines	R120
	Waste from the production and preparation of pharmaceutical products	R140
T	Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known	T100
	Waste from the production, formulation and use of photographic chemicals and processing materials	T120
	Tyres	T140

Code	Waste description	Waste type
	Waste of an explosive nature not subject to other legislation	T200

A.4 New South Wales Trackable Waste Codes

Code	Waste description	Waste type
A	Waste resulting from surface treatment of metals and plastics	A100
	Waste from heat treatment and tempering operations containing cyanides	A110
	Cyanides (inorganic)	A130
B	Acidic solutions or acids in solid form	B100
C	Basic solutions or bases in solid form	C100
D	Metal carbonyls.	D100
	Inorganic fluorine compounds (excluding calcium fluoride).	D110
	Mercury and mercury compounds.	D120
	Arsenic and arsenic compounds.	D130
	Chromium compounds (hexavalent and trivalent).	D140
	Cadmium and cadmium compounds.	D150
	Beryllium and beryllium compounds.	D160
	Antimony and antimony compounds.	D170
	Thallium; thallium compounds	D180
	Copper compounds.	D190
	Cobalt and cobalt compounds.	D200
	Nickel compounds.	D210
	Lead and lead compounds.	D220
	Zinc compounds.	D230
	Selenium and selenium compounds.	D240
	Tellurium; tellurium compounds	D250
	Vanadium compounds	D270
	Barium compounds.	D290
	Non-toxic salts	D300
	Boron compounds.	D310
	Inorganic sulfides	D330
	Perchlorates	D340
	Chlorates	D350
	Phosphorus compounds excluding mineral phosphates	D360
E	Waste containing peroxides other than hydrogen peroxide	E100
F	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100
	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110
G	Ethers	G100
	Organic solvents excluding halogenated solvents	G110
	Halogenated organic solvents	G150
	Waste from the production, formulation and use of organic solvents	G160
H	Waste from the production, formulation and use of biocides and phytopharmaceuticals	H100
	Organic phosphorous compounds	H110

Code	Waste description	Waste type
	Waste from manufacture, formulation and use of wood-preserving chemicals	H170
J	Waste mineral oils unfit for their original intended use	J100
	Waste oil/water, hydrocarbons/water mixtures or emulsions	J120
	Waste tarry residues arising from refining, distillation, and any pyrolytic treatment	J160
K	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100
	Grease trap waste	K110
	Sewage sludge and residues including nightsoil and septic tank sludge	K130
	Tannery wastes (including leather dust, ash, sludges and flours)	K140
	Wool scouring wastes	K190
M	Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated naphthalenes, polychlorinated terphenyls and/or polybrominated biphenyls	M100
	Phenols, phenol compounds including chlorophenols	M150
	Organo halogen compounds—other than substances referred to in this Table or Table 2	M160
	Polychlorinated dibenzo-furan (any congener)	M170
	Polychlorinated dibenzo-p-dioxin (any congener)	M180
	Cyanides (organic)	M210
	Isocyanate compounds	M220
	Triethylamine catalysts for setting foundry sands	M230
	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250
	Highly odorous organic chemicals (including mercaptans and acrylates)	M260
N	Containers and drums that are contaminated with residues of substances referred to in this Table	N100
	Solids contaminated with a substance or waste referred to in this Table	N120
	Fire debris and fire wash waters	N140
	Fly ash.	N150
	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list	N160
	Filter cake	N190
	Residues from industrial waste treatment/disposal operations	N205
	Asbestos	N220
	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos	N230
R	Clinical and related wastes	R100
	Waste pharmaceuticals, drugs and medicines	R120
	Waste from the production and preparation of pharmaceutical products	R140
T	Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known	T100
	Waste from the production, formulation and use of photographic chemicals and processing materials	T120
	Tyres	T140
	Waste of an explosive nature not subject to other legislation	T200

NSW-specific notes:

Includes codes of waste tracked under NSW's waste tracking system (List A wastes) and codes of waste tracked under interstate (Controlled Waste NEPM) movements only (List B wastes) (<http://www.epa.nsw.gov.au/resources/owt/trackwaste07522.pdf>).

A.5 Queensland Regulated Waste Codes

Code	Waste description	Waste type
A	Waste from surface treatment of metals or plastics	A100
	Waste from heat treatment or tempering operations that use cyanides	A110
	Cyanides (inorganic)	A130
B	Acidic solutions and acids in solid form	B100
C	Basic (alkaline) solutions or bases (alkalis) in solid form	C100
D	Metal carbonyls.	D100
	Inorganic fluorine compounds (other than calcium fluoride).	D110
	Mercury and mercury compounds.	D120
	Arsenic and arsenic compounds.	D130
	Chromium compounds (hexavalent and trivalent).	D140
	Cadmium and cadmium compounds.	D150
	Beryllium and beryllium compounds.	D160
	Antimony and antimony compounds.	D170
	Thallium; thallium compounds	D180
	Copper compounds.	D190
	Nickel compounds.	D210
	Lead and lead compounds including lead-acid batteries.	D220
	Zinc compounds.	D230
	Selenium and selenium compounds.	D240
	Tellurium; tellurium compounds	D250
	Vanadium compounds	D270
	Barium compounds other than barium sulfate.	D290
	Non-toxic salts, for example, saline effluent	D300
	Boron compounds.	D310
	Inorganic sulfides	D330
	Perchlorates	D340
	Chlorates	D350
	Phosphorus compounds other than mineral phosphates	D360
E	Waste containing peroxides other than hydrogen peroxide	E100
	Waste of an explosive nature, other than an explosive within the meaning of the <i>Explosives Act 1999</i>	E120
F	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100
	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110
G	Ethers	G100
	Organic solvents other than halogenated solvents, including, for example, ethanol	G110
	Halogenated organic solvents	G150
	Waste from the production, formulation and use of organic solvents	G160
H	Waste from the production, formulation and use of biocides and phytopharmaceuticals	H100

Code	Waste description	Waste type
	Organic phosphorous compounds	H110
	Waste from manufacture, formulation and use of wood-preserving chemicals	H170
J	Mineral oils	J100
	Oil and water mixtures or emulsions, or hydrocarbons and water mixtures or emulsions	J120
	Tarry residues arising from refining, distillation, and any pyrolytic treatment	J160
K	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100
	Grease trap waste	K110
	Sewage sludge and residues including nightsoil and septic tank sludge	K130
	Tannery wastes (including leather dust, ash, sludges and flours)	K140
	Wool scouring wastes	K190
	Liquid food processing waste	K200
M	Material containing polychlorinated biphenyls (PCB's), polychlorinated naphthalenes (PCN's), polychlorinated terphenyls (PCT's) and/or polybrominated biphenyls (PBB's)	M100
	Phenols, phenol compounds including chlorophenols	M150
	Organo halogen compounds—other than substances referred to in this Table	M160
	Polychlorinated dibenzo-furan (any congener)	M170
	Polychlorinated dibenzo-p-dioxin (any congener)	M180
	Cyanides (organic)	M210
	Isocyanate compounds	M220
	Triethylamine catalysts for setting foundry sands	M230
	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250
	Highly odorous organic chemicals (including mercaptans and acrylates)	M260
N	Waste containers	N100
	Fire debris and fire wash waters	N140
	Fly ash.	N150
	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list	N160
	Filter cake	N190
	Residues from industrial waste treatment/disposal operations	N205
	Asbestos	N220
R	Clinical and related wastes	R100
	Pharmaceuticals, drugs and medicines	R120
	Waste from the production and preparation of pharmaceutical products	R140
T	Chemical waste arising from research and development or teaching activity, including new or unidentified material and material whose effects on human health or the environment are not known	T100
	Waste from the production, formulation and use of photographic chemicals and processing materials	T120
	Tyres	T140

A.6 South Australia Listed Waste Codes

Code	Waste description	Waste type
A	Waste resulting from surface treatment of metals and plastics	A100
	Waste from heat treatment and tempering operations containing cyanides	A110
	Cyanides (inorganic)	A130
B	Acidic solutions or acids in solid form	B100
C	Basic solutions or bases in solid form	C100
D	Metal carbonyls	D100
	Inorganic fluorine compounds excluding calcium fluoride	D110
	Mercury; mercury compounds	D120
	Arsenic; arsenic compounds	D130
	Chromium compounds (hexavalent and trivalent)	D140
	Cadmium; cadmium compounds	D150
	Beryllium; beryllium compounds	D160
	Antimony; antimony compounds	D170
	Thallium; thallium compounds	D180
	Copper compounds	D190
	Cobalt compounds	D200
	Nickel compounds	D210
	Lead; lead compounds	D220
	Zinc compounds	D230
	Selenium; selenium compounds	D240
	Tellurium; tellurium compounds	D250
	Vanadium compounds	D270
	Barium compounds (excluding barium sulphate)	D290
	Non-toxic salts	D300
	Boron compounds	D310
	Inorganic sulfides	D330
	Perchlorates	D340
	Chlorates	D350
	Phosphorus compounds excluding mineral phosphates	D360
E	Waste containing peroxides other than hydrogen peroxide	E100
	Waste of an explosive nature not subject to other legislation	E120
F	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100
	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110
G	Ethers	G100
	Organic solvents excluding halogenated solvents	G110
	Halogenated organic solvents	G150
	Waste from the production, formulation and use of organic solvents	G160
H	Waste from the production, formulation and use of biocides and phytopharmaceuticals	H100
	Organic phosphorous compounds	H110

Code	Waste description	Waste type
	Waste from manufacture, formulation and use of wood-preserving chemicals	H170
J	Waste mineral oils unfit for their original intended use	J100
	Waste oil/water, hydrocarbons/water mixtures or emulsions	J120
	Waste tarry residues arising from refining, distillation, and any pyrolytic treatment	J160
K	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100
	Grease trap waste	K110
	Sewage sludge and residues including nightsoil and septic tank sludge	K130
	Tannery wastes (including leather dust, ash, sludges and flours)	K140
	Wool scouring wastes	K190
M	Waste substances and articles containing or contaminated with polychlorinated biphenyls [(PCBs), polychlorinated naphthalenes (PCNs), polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs)]	M100
	Phenols, phenol compounds including chlorophenols	M150
	Organohalogen compounds – other than substances referred to in this list	M160
	Polychlorinated dibenzo-furan (any congener)	M170
	Polychlorinated dibenzo-p-dioxin (any congener)	M180
	Cyanides (organic)	M210
	Isocyanate compounds	M220
	Triethylamine catalysts for setting foundry sands	M230
	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250
	Highly odorous organic chemicals (including mercaptans and acrylates)	M260
N	Containers and drums which are contaminated with residues of substances referred to in this list	N100
	Soils contaminated with a controlled waste	N120
	Fire debris and fire washwaters	N140
	Fly ash	N150
	Encapsulated, chemically fixed, solidified or polymerised wastes	N160
	Filter cake	N190
	Residues from industrial waste treatment/disposal operations	N205
	Asbestos	N220
	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos	N230
R	Clinical and related wastes	R100
	Waste pharmaceuticals, drugs and medicines	R120
	Waste from the production and preparation of pharmaceutical products	R140
	Waste chemical substances arising from research and development or teaching activities including those which are not identified and/or are new and whose effects on human health and/or the environment are not known	T100
T	Waste from the production, formulation and use of photographic chemicals and processing materials	T120
	Tyres	T140

A.7 Tasmania Controlled Waste Codes

Code	Waste description	Waste type
A	Waste resulting from surface treatment of metals and plastics	A100
	Waste from heat treatment and tempering operations containing cyanides	A110
	Cyanides (inorganic)	A130
B	Acidic solutions or acids in solid form	B100
C	Basic solutions or bases in solid form	C100
D	Metal carbonyls	D100
	Inorganic fluorine compounds excluding calcium fluoride	D110
	Mercury; mercury compounds	D120
	Arsenic; arsenic compounds	D130
	Chromium compounds (hexavalent and trivalent)	D140
	Cadmium; cadmium compounds	D150
	Beryllium; beryllium compounds	D160
	Antimony; antimony compounds	D170
	Thallium; thallium compounds	D180
	Copper compounds	D190
	Cobalt compounds	D200
	Nickel compounds	D210
	Lead; lead compounds	D220
	Zinc compounds	D230
	Selenium; selenium compounds	D240
	Tellurium; tellurium compounds	D250
	Vanadium compounds	D270
	Barium compounds (excluding barium sulphate)	D290
	Non-toxic salts	D300
	Boron compounds	D310
	Inorganic sulfides	D330
	Perchlorates	D340
	Chlorates	D350
	Phosphorus compounds excluding mineral phosphates	D360
E	Waste containing peroxides other than hydrogen peroxide	E100
	Waste of an explosive nature not subject to other legislation	E120
F	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100
	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110
G	Ethers	G100
	Organic solvents excluding halogenated solvents	G110
	Halogenated organic solvents	G150
	Waste from the production, formulation and use of organic solvents	G160
H	Waste from the production, formulation and use of biocides and phytopharmaceuticals	H100
	Organic phosphorus compounds	H110

Code	Waste description	Waste type
	Waste from manufacture, formulation and use of wood-preserving chemicals	H170
J	Waste mineral oils unfit for their original intended use	J100
	Waste oil/water, hydrocarbons/water mixtures or emulsions	J120
	Waste tarry residues arising from refining, distillation, and any pyrolytic treatment	J160
K	Animal effluent and residues (abattoir effluent, poultry and fish processing waste)	K100
	Grease trap waste	K110
	Sewage sludge, sewage residue, nightsoil or sludge from an on-site waste water management system	K130
	Tannery wastes (including leather dust, ash, sludges and flours)	K140
	Wool scouring waste	K190
M	Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs), polychlorinated naphthalenes (PCNs), polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs)	M100
	Phenols, phenol compounds including chlorophenols	M150
	Organohalogen compounds - other than substances referred to in this list	M160
	Polychlorinated dibenzo-furan (any congener)	M170
	Polychlorinated dibenzo-p-dioxin (any congener)	M180
	Cyanides (organic)/nitriles	M210
	Isocyanate compounds	M220
	Triethylamine catalysts for setting foundry sands	M230
	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250
	Highly odorous organic chemicals (including mercaptans and acrylates)	M260
N	Containers which are contaminated with residues of substances referred to in this list	N100
	Soils contaminated with a controlled waste	N120
	Fire debris and fire washwaters	N140
	Fly ash excluding fly ash generated from Australian coal fired power stations	N150
	Encapsulated, chemically-fixed, solidified or polymerised wastes (referred to in this list)	N160
	Filter cake contaminated with residues of substances referred to in this list	N190
	Asbestos	N220
	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos	N230
Q	A waste within the meaning of the Quarantine Regulations 2000 of the Commonwealth, as amended	Q100
	Exhibits an environmentally significant characteristic and is derived or arises from an agvet chemical as defined in the Dangerous Substances (Safe Handling) Act 2005	Q200
	Exhibits an environmentally significant characteristic and is derived or arises from dangerous goods as defined in the Dangerous Goods (Safe Transport) Act 1998	Q300
	Exhibits an environmentally significant characteristic and is derived or arises from a poison as defined in the Poisons Act 1971	Q400
	Exhibits an environmentally significant characteristic and is derived or arises from a scheduled waste within the meaning of a National Management Plan*	Q500
R	Clinical and related wastes	R100
	Waste pharmaceuticals, drugs and medicines	R120
	Waste from the production and preparation of pharmaceutical products	R140

Code	Waste description	Waste type
T	Waste chemical substances arising from research and development or teaching activities including those which are not identified and/or are new and whose effects on human health and/or the environment are not known.	T100
	Waste from the production, formulation and use of photographic chemicals and processing materials	T120
	Tyres	T140
	Residues from industrial waste treatment/disposal operations	T190
	Oxidising Agents	T200
	Reactive chemicals	T210
	Reducing agents	T220

A.8 Victoria Prescribed Industrial Waste Codes

Code	Waste description	Waste type
A	Cyanide-containing wastes.	A100
B	Acids in a solid form or acidic solution with pH value of 4 or less.	B100
C	Alkaline solids or alkaline solutions with pH value of 9 or more. Includes, but is not limited to: caustic soda, alkaline cleaners, and waste lime.	C100
D	Metal carbonyls.	D100
	Inorganic fluorine compounds (excluding calcium fluoride).	D110
	Mercury and mercury compounds.	D120
	Equipment and articles containing mercury.	D121
	Arsenic and arsenic compounds.	D130
	Chromium compounds (hexavalent and trivalent).	D140
	Tannery wastes containing chromium.	D141
	Cadmium and cadmium compounds.	D150
	Beryllium and beryllium compounds.	D160
	Antimony and antimony compounds.	D170
	Thallium; thallium compounds	D180
	Copper compounds.	D190
	Cobalt and cobalt compounds.	D200
	Nickel compounds.	D210
	Lead and lead compounds.	D220
	Zinc compounds.	D230
	Selenium and selenium compounds.	D240
	Waste from the production, formulation and use of photographic chemicals and processing materials (containing silver).	D261
	Barium compounds.	D290
	Non-toxic salts (e.g. sodium chloride, calcium chloride).	D300
	Boron compounds.	D310
	Inorganic sulfur-containing compounds.	D330
	Phosphorus compounds, excluding mineral phosphates.	D360
	Inorganic chemicals, NOS.	D390
	Smelter waste containing prescribed waste.	D400
E	Oxidising agents, including peroxides, NOS.	E100
	Waste of an explosive nature not subject to other legislation, including azides.	E120
	Highly reactive chemicals, NOS.	E130
F	Aqueous-based wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish.	F100
	Aqueous-based wastes from the production, formulation and use of resins, latex, plasticisers, glues and adhesives.	F110
	Solvent-based wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish.	F120
	Solvent-based wastes from the production, formulation and use of resins, latex, plasticisers, glues and adhesives.	F130

Code	Waste description	Waste type
G	Ethers and highly flammable hydrocarbons, such as petrol and jet fuel.	G100
	Non-halogenated organic solvents.	G110
	Dry-cleaning wastes containing organic solvents, such as perchloroethylene.	G130
	Halogenated organic solvents.	G150
	Wastes from the production, formulation and use of organic solvents, NOS.	G160
H	Waste from the production, formulation and use of biocides and phytopharmaceuticals, NOS.	H100
	Organophosphorus pesticides.	H110
	Mixed pesticide residue.	H160
	Copper-chrome-arsenic (CCA).	H170
J	Waste oils unfit for their original intended use (lubricating, hydraulic).	J100
	Waste hydrocarbons.	J110
	Waste oils and water mixtures or emulsions, and hydrocarbon and water mixtures or emulsions.	J120
	Triple interceptor waste and stormwater contaminated with oil or hydrocarbons.	J130
	Transformer fluids (excluding PCBs).	J140
	Other (cutting oils, soluble oils).	J150
	Tarry residues arising from refining, distillation and any pyrolytic treatment.	J160
	Used oil filters. Note: this waste must be reused or recycled and is prohibited from disposal to landfill.	J170
K	Animal effluent and residues. Examples: abattoir wastes, poultry wastes, fish and shellfish wastes.	K100
	Grease interceptor trap effluent.	K120
	Tannery wastes (not containing chromium) and wool scouring wastes.	K140
	Food and beverage processing wastes, including animal and vegetable oils and derivatives.	K200
L	Car and truck washwaters.	L100
	Industrial washwaters from cleaning, rinsing or washing operations, NOS. Examples: textile cleaning/processing effluent NOS, industrial plant and machinery washwaters, cooling tower washwaters.	L150
M	Polychlorinated biphenyls (PCBs) (PCBs >50 mg per kg).	M100
	Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs) ([PCBs] >50 mg per kg).	M110
	Solvents, oils and materials contaminated with PCBs ([PCBs] >2 mg per kg and [PCBs] <50 mg per kg).	M120
	Non-halogenated organic chemicals (non solvent), NOS. Examples: glycol coolant, radiator fluid, brake fluid.	M130
	Phenol and phenol compounds, including halogenated phenols.	M150
	Halogenated organic chemicals, NOS.	M160
	Isocyanate compounds (organic).	M220
	Amines and other nitrogen compounds.	M230
	Detergents and surface active agents (surfactants).	M250
	Highly odorous organic chemicals (including mercaptans and acrylates).	M260
N	Prescribed waste residues in rigid steel or plastic containers with an original volume less than 200 litres (hazardous substances to be specified).	N100

Code	Waste description	Waste type
	Prescribed waste residues in rigid steel or plastic containers with an original volume greater than or equal to 200 litres (hazardous substances to be specified). Note: this waste must be reused or recycled and is prohibited from disposal to landfill.	N105
	Prescribed waste residues in bags or containers not specified under N100 and N105 (hazardous substances to be specified).	N110
	Category A contaminated soil - hazardous substances to be specified. (Refer to EPA guidance material for details on identifying Hazard Category). Note: these wastes must not be disposed directly to landfill without prior treatment.	N119
	Category B contaminated soil - hazardous substances to be specified. (Refer to EPA guidance material for details on identifying Hazard Category).	N120
	Category C contaminated soil - hazardous substances to be specified. (Refer to EPA guidance material for details on identifying Hazard Category).	N121
	Spent catalysts (must specify contaminants).	N130
	Fire debris and fire wash-waters that are contaminated with chemicals (must specify contaminants).	N140
	Fly ash.	N150
	Prescribed industrial wastes that are immobilised in accordance with a classification issued by EPA.	N160
	Prescribed industrial wastes that are chemically fixed and/or encapsulated.	N170
	Prescribed industrial waste that are solidified or polymerised.	N180
	Filter cake.	N190
	Ion-exchange column residues.	N200
	Residues from pollution control operations, NOS. Examples: activated carbon, baghouse dust, residues from industrial waste disposal operations.	N210
	Asbestos.	N220
	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos.	N230
	Absorbents contaminated with prescribed waste residues, such as rags contaminated with oils, hydrocarbons and organic solvents (must specify contaminants).	N250
	Solid wastes contaminated with prescribed waste residues, NOS (must specify contaminants). Examples: contaminated bricks and concrete, contaminated steel, shredder floc.	N260
R	Clinical and related wastes, NOS (biomedical waste).	R100
	Pathogenic substances and quarantine wastes.	R110
	Waste from the use of pharmaceutical products, NOS.	R120
	Cytotoxic substances.	R130
	Waste from the production of pharmaceutical products and cosmetics, NOS.	R140
T	Waste chemical substances arising from laboratories, research and development, or teaching activities.	T100
	Waste from the production, formulation and use of photographic chemicals and processing materials (which do not contain silver).	T120
	Inert sludges or slurries, such as clay or ceramic suspensions, drilling mud, and pit water with negligible hydrocarbon contamination.	T130
	Foundry sands.	T160
	Waste chemicals in small quantities, NOS, such as collected household chemicals.	T170

A.9 Western Australia Controlled Waste Codes

Code	Waste Description	Waste Type
A	Waste resulting from surface treatment of metals and plastics	A100
	Waste from heat treatment and tempering operations containing cyanides	A110
	Cyanides (inorganic)	A130
B	Acidic solutions or acids in solid form	B100
C	Basic solutions or bases in solid form	C100
D	Metal carbonyls	D100
	Inorganic fluorine compounds excluding calcium fluoride	D110
	Mercury; mercury compounds	D120
	Arsenic; arsenic compounds	D130
	Chromium compounds (hexavalent and trivalent)	D140
	Tannery wastes containing chromium	D141
	Cadmium; cadmium compounds	D150
	Used nickel cadmium batteries	D151
	Beryllium; beryllium compounds	D160
	Antimony; antimony compounds	D170
	Thallium; thallium compounds	D180
	Copper compounds	D190
	Cobalt compounds	D200
	Nickel compounds	D210
	Used nickel metal hydride batteries	D211
	Lead; lead compounds	D220
	Used lead acid batteries	D221
	Zinc compounds	D230
	Selenium; selenium compounds	D240
	Tellurium; tellurium compounds	D250
	Vanadium compounds	D270
	Barium compounds (excluding barium sulphate)	D290
	Non-toxic salts	D300
	Boron compounds	D310
	Inorganic sulfides	D330
	Perchlorates	D340
	Chlorates	D350
	Phosphorus compounds excluding mineral phosphates	D360
E	Waste containing peroxides other than hydrogen peroxide	E100
	Waste of an explosive nature not subject to other legislation	E120
	Highly reactive chemicals nos	E130
F	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100
	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110
	Solvent based waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F120

Code	Waste Description	Waste Type
	Solvent based waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F130
G	Ethers	G100
	Organic solvents excluding halogenated solvents	G110
	Dry cleaning waste containing perchloroethylene	G130
	Halogenated organic solvents	G150
	Waste from the production, formulation and use of organic solvents	G160
H	Waste from the production, formulation and use of biocides and phytopharmaceuticals	H100
	Organic phosphorous compounds	H110
	Organochlorine pesticides	H130
	Waste from the manufacture, formulation and use of wood-preserving chemicals	H170
J	Waste mineral oils unfit for their original intended use	J100
	Waste oil/water, hydrocarbons/water mixtures or emulsions	J120
	Oil interceptor waste	J130
	Waste tarry residues arising from refining, distillation, and any pyrolytic treatment	J160
	Used oil filters	J170
	Oil sludge	J180
K	Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100
	Grease trap waste	K110
	Sewage waste from reticulated sewerage system	K130
	Tannery wastes not containing chromium	K140
	Wool scouring wastes	K190
	Food and beverage processing wastes	K200
	Septage wastes	K210
L	Car and truck wash waters	L100
	Industrial wash water contaminated with a controlled waste	L150
M	Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated naphthalenes, polychlorinated terphenyls and/or polybrominated biphenyls	M100
	Waste containing PBB, PCN, PCT	M105
	Non-halogenated organic chemicals	M130
	Phenols, phenol compounds including chlorophenols	M150
	Organo halogen compounds—other than substances referred to in this Table or Table 2	M160
	Polychlorinated dibenzo-furan (any congener)	M170
	Polychlorinated dibenzo-p-dioxin (any congener)	M180
	Cyanides (organic)	M210
	Isocyanate compounds	M220
	Triethylamine catalysts for setting foundry sands	M230
	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250
	Highly odorous organic chemicals (including mercaptans and acrylates)	M260
N	Containers and drums that are contaminated with residues of substances referred to in this list	N100
	Soils contaminated with a controlled waste	N120

Code	Waste Description	Waste Type
	Fire debris and fire wash waters	N140
	Fly ash, excluding fly ash generated from Australian coal fired power stations	N150
	Encapsulated, chemically-fixed, solidified or polymerised wastes referred to in this list	N160
	Filter cake contaminated with residues of substances referred to in this list	N190
	Residues from industrial waste treatment/disposal operations	N205
	Asbestos	N220
	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos	N230
R	Clinical and related wastes	R100
	Waste pharmaceuticals, drugs and medicines	R120
	Waste from the production and preparation of pharmaceutical products	R140
T	Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known	T100
	Waste from the production, formulation and use of photographic chemicals and processing materials	T120
	Tyres	T140
	Waste of an explosive nature not subject to other legislation	T200

A.10 Basel Y-codes

Basel Y Codes	Y Code Description
Y1	Clinical wastes from medical care in hospitals, medical centres and clinics
Y2	Wastes from the production and preparation of pharmaceutical products
Y3	Waste pharmaceuticals, drugs and medicines
Y4	Wastes from the production..... of biocides and phytopharmaceuticals
Y5	Wastes from the manufacture..... of wood preserving chemicals
Y6	Wastes from the production, formulation and use of organic solvent
Y7	Wastes from heat treatment and tempering operations containing cyanides
Y8	Waste mineral oils unfit for their originally intended use
Y9	Waste oils/water, hydrocarbons/water mixtures, emulsion
Y10	Waste substancescontaining or contaminated with PCBs, PCTs, PBBs
Y11	Waste tarry residues ... from refining, distillation and any pyrolytic treatment
Y12	Wastes from production..... of inks, dyes, pigments, paints, etc.
Y13	Wastes from production.....resins, latex, plasticizers, glues, etc.
Y14	Waste chemical substances arising environment are not known
Y15	Wastes of an explosive nature not subject to other legislation
Y16	Wastes from production, formulation and use of photographic chemicals...
Y17	Wastes resulting from surface treatment of metals and plastics
Y18	Residues arising from industrial waste disposal operations
Wastes having as constituents (Annex I to Basel Convention)	
Y19	Metal carbonyls
Y20	Beryllium; beryllium compounds
Y21	Hexavalent chromium compounds
Y22	Copper compounds
Y23	Zinc compounds
Y24	Arsenic; arsenic compounds
Y25	Selenium; selenium compounds
Y26	Cadmium; cadmium compounds
Y27	Antimony; antimony compounds
Y28	Tellurium; tellurium compounds
Y29	Mercury; mercury compounds
Y30	Thallium; thallium compounds
Y31	Lead; lead compounds
Y32	Inorganic fluorine compounds excluding calcium fluoride
Y33	Inorganic cyanides
Y34	Acidic solutions or acids in solid form
Y35	Basic solutions or bases in solid form
Y36	Asbestos (dust and fibres)
Y37	Organic phosphorus compounds
Y38	Organic cyanides
Y39	Phenols; phenol compounds including chlorophenols

Basel Y Codes	Y Code Description
Y40	Ethers
Y41	Halogenated organic solvents
Y42	Organic solvents excluding halogenated solvents
Y43	Any congener of polychlorinated dibenzo-furan
Y44	Any congener of polychlorinated dibenzo-p-dioxin
Y45	Organohalogen compounds other than ...(e.g. Y39, Y41, Y42, Y43, Y44)
Categories of wastes requiring special consideration (Annex II to Basel Convention)	
Y46	Wastes collected from households
Y47	Residues arising from the incineration of household wastes
Additional waste categories not included in Y-Codes	
Y+1	Other metal compounds
Y+2	Other inorganic chemicals
Y+3	Other organic chemicals
Y+4	Putrescible/ organic waste
Y+5	Waste packages and containers containing Annex 1 substances in concentrations sufficient to exhibit Annex III hazard characteristics
Y+6	Soils contaminated with residues of substances in Basel Y-codes 19-45
Y+7	Sludges contaminated with residues of substances in Basel Y-codes 19-45
Y+8	Tyres