

RESPONSES TO COMMENTS

DRAFT CLASSIFICATION – CONTAMINATED SOILS

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INTRODUCTION

The *Industrial waste management policy (Prescribed Industrial Waste) 2000* (the policy) establishes a framework for the classification and management of prescribed industrial wastes based on opportunities for the reuse, recycling, recovery of energy and treatment of the waste. On 1 October 2001 EPA Victoria (EPA) released a draft classification for contaminated soils (EPA Publication 786: Draft Classification (Contaminated Soil) and Background Information) seeking public comment. During the development and following the release of the draft classification for contaminated soils, EPA also conducted public consultation through an information session, seminars and discussions with individual stakeholders.

EPA received 15 written comments in response to the draft classification, as well as feedback from the seminars and discussions held with stakeholders. An external technical advisory committee, established to assist EPA with implementation of the policy, also provided advice on the development of the classification for contaminated soils.

This Response to Comments summarises feedback received along with EPA's response to this feedback. EPA has now finalised the Classification for Contaminated Soils (available on EPA's website at www.epa.vic.gov.au) incorporating changes set out in this Responses to Comments.

SUMMARY OF PUBLIC COMMENT AND EPA RESPONSE

Written comments are referenced as follows [1:2], with the first number referring to the author and the second to the page number of the submission. The feedback received has been summarised and categorised under the following sections:

1. Classification for contaminated soils
2. Environment Improvement Plans
3. On-site / Off-site treatment and technologies
4. Uncertainty for the land development industry
5. Use of interim measures
6. Management of low level contaminated soil
7. Other issues

Comments of an editorial nature have been noted, although they have not been specifically addressed in this document. This classification applies to contaminated soils containing one or more of the following contaminant types:

- Total Petroleum Hydrocarbons
- Monocyclic Aromatic Hydrocarbons
- Organochlorine Compounds
- Polycyclic Aromatic Hydrocarbons

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Solid inert materials and bio-solids are not subject to the conditions of this classification as was queried in some comments.

From the written submissions and other feedback received from seminars and discussions, there is overall support for the principles and objectives of the policy and of reducing the amount of contaminated soil disposed to landfill. Comments included:

- “We support entirely the diversion of waste from landfill that has an alternative, higher value use” [9:1].
- “The Urban and Regional Land Corporation supports and endorses the principles of the IWMP” [11:5].
- “The classification of PAH contaminated soils requiring treatment as opposed to disposal to landfill is supported in principle by the City of Stonnington” [15:1].

Other comments were generally supportive of the overall objectives while raising issues of current practicability:

- “Melbourne Water supports the aim of moving the management of contaminated soil up EPA Victoria’s waste management hierarchy. However, there is a need to be aware of the costs of this, especially when there are no existing management options” [12:1].
- Urban Development Institute of Australia states: “We will support the direction discussed in the paper when it can be proven that the recommendations are achievable and commercially viable” [14:3].

1. CLASSIFICATION FOR CONTAMINATED SOILS

Summary of comment – Clarification was sought on the types of contaminated soils to which the classification applied, for example would it apply to soils that had both classified and non-classified contaminants [2:1, 5:2]. In its comments DHS encouraged the development of evaluation forms for inorganic contaminated soils similar to those proposed for organic contaminated soils in EPA Publication 786, and further development of the evaluation forms as new technologies arise [8:1]. JCON also queried how EPA intended to ensure consistency of approach to classification and sought further guidance from EPA [2:1].

The City of Stonnington encouraged EPA “to explore alternative strategies for implementation of classification of contaminated soil” [15:2]. The City of Stonnington was concerned about mandating the use of technologies that are not yet well established within industry and about the resulting increased risks and costs which would make it difficult to commit to site redevelopment and remediation [15:2].

WREC believe that for the proposed classification table (Table 2, EPA Publication 786) the proposed classification of ‘available in the foreseeable future’ should read as follows “These soils must be stored in EPA licensed repository pending the establishment of treatment technologies for reuse either on-site or off-site” [7:3]. WREC did not believe it was appropriate “to suggest that ‘Where reuse is not practicable...’ because if so then it would not be classified as ‘in the foreseeable future’ but would go to containment facilities” [7:3].

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GHD suggested the additional dot point “The practicability of treatment to achieve the guideline where practicability takes into account cost, energy use, overall environmental effect of treatment reuse and disposal, health risk and technical feasibility” under section 2, Classification process, EPA Publication 786 [13:2]. GHD suggested this be taken into account by EPA in relation to case-by-case consideration of alternative classifications [13:2].

Discussions were held with various stakeholders and EPA’s technical advisory committee on the availability of contaminated soil storage and treatment facilities within Victoria or in a practicable location in Australia. Concerns were raised over the timing of the establishment of a facility to treat or store contaminated soils and the implementation of the classification, and whether the classification would be more appropriate as “available in the foreseeable future” rather than “currently available”.

Response to comment – EPA has developed an information bulletin to accompany the final classification, which provides guidance to generators, transporters and managers of contaminated soils on their responsibilities under the policy and the classification. Opportunities exist for the treatment and recycling of contaminated soils, however Victoria does not currently have a licensed facility that can store and/or treat contaminated soils. As such EPA has classified all four soil contaminant type groups as ‘available in the foreseeable future’. EPA will implement the classification by amending landfill licences to prohibit the acceptance of contaminated soils in parallel with the development of such facilities.

Where there is a mixture of contaminants in the soil, with contaminants both included and not included by the classification, a generator must comply with the classification.

In making decisions about the practicability of options for the management of waste under the policy, EPA has regard to factors including environmental hazard, technical, logistical and financial considerations (clause 8(4) of the policy). In relation to alternative classifications, it is the generator’s responsibility to demonstrate to EPA that the classification cannot be achieved practicably and that an alternative classification would achieve the best environmental outcome.

2. ENVIRONMENT IMPROVEMENT PLANS (EIPS)

Summary of Comment: There were a number of comments relating to the amount of contaminated soils that might trigger the formal requirement to prepare an environment improvement plan (EIP), proposed in the draft classification as 10,000 tonnes of contaminated soil and low level contaminated soil (LLCS). These included increasing the proposed amount to 20,000 tonnes (ie 10,000m³) [2:2] or applying 5,000m³ [7:2] as the threshold limit for the requirement for an EIP. If 5,000m³ was not adopted by EPA, WREC proposed an alternative process whereby site managers lodge a report to EPA when their level of contaminated soil reaches 5,000m³ and 8,000m³ indicating why an EIP may or may not be required [7:2].

Alternative methods for managing contaminated sites were also suggested. One comment suggested that an assessment of the environmental impact of

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the contaminated soil and the options developed to manage it be used rather than an arbitrary amount [12:2]. Another suggestion was that EIPs might be triggered based on both exceedance of a contaminant concentration and a minimum volume of contaminant load [3:1]. This suggestion was made so that sites might be managed based on toxicity/hazard instead of volumes generated.

Clarification was sought on whether 10,000 tonnes of LLCS only requires an EIP [5:2]. Melbourne Water also sought clarification on the need for an EIP based on a 10,000 tonne limit [12:2].

A number of comments received indicated concerns that EPA would not be able to assess in a timely manner the number of EIPs that would be submitted. One suggestion was that Publication 394 *Environment Improvement Plans 1993* be updated to address contaminated soil remedial works and include a statutory response time for assessment of EIPs [2:2]. It was also commented that EPA could implement an Accredited Licensee type of system where accredited remediation companies could issue EIPs [2:2]. ACLCA recommended that auditors could have authority to review and approve EIPs. ACLCA recommended that EPA develop a Technical Advisory Team that would assist auditors in addressing the objectives of the policy and relevant SEPPs [4:2]. URLC was concerned that recent changes to the auditor system coupled with the proposed requirement for EIPs, prior to remediation of a contaminated site, would lead to major uncertainty and huge time and cost implications for a developer [11:2]. URLC noted that there appeared to be a “separation of authority and responsibility between the auditor and the EPA for different aspects of the single project”.

There were a number of queries on how the EIP process would work; including what the requirement would be if large volumes of contaminated soil were not discovered until after remediation works had begun, and whether contaminated soil could be transported off-site prior to receiving approval of an EIP [2:2,3].

DHS noted that whilst smaller generators were not required to generate an EIP, they were still required under the policy to “classify their wastes and apply the policy” [8:1].

Response to Comment: As the objective of the classification is to divert large volumes of contaminated soil away from landfill to management options further up the waste management hierarchy, the 10,000 tonne quantity was proposed as a potential trigger for the development of EIPs to include those sites that have the potential to generate large volumes of contaminated soils that may be sent to landfill. In order to make it easier for contaminated site managers to determine whether their site would be likely to trigger the requirement for an EIP, the threshold limit has been changed to 5,000m³ in ground.

EPA encourages the development of EIPs for all contaminated sites as described in clause 15(2) of the policy, irrespective of whether the contaminated soils are to be managed on or off-site. The development of an EIP will assist generators determine if they are complying with the policy and in identifying whether on-site or off-site management of the contaminated soils will provide a greater environmental benefit.

In applying clause 15(1) of the policy, where an EIP has not been developed voluntarily, EPA will by

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notice, works approval of other statutory devices, require the development of EIPs for sites that have approximately greater than 5,000m³ in ground of contaminated soil and low level contaminated soil.

In response to the feedback received, EPA will be requiring the use of environmental auditors to verify EIPs for sites that have approximately greater than 5,000m³ in-ground of contaminated soil and low level contaminated soil, prior to submission to EPA for approval.

The EIP publication has also been updated and can be found in EPA Publication 739: Guidelines for the Preparation of Environment Improvement Plans.

**3. TREATMENT TECHNOLOGIES
AND ON-SITE AND OFF-SITE
TREATMENT**

Summary of comment – A number of submissions received raised the issue of on-site versus off-site management and treatment, and what EPA considers to be suitable options. For example, one comment queries whether encapsulation on-site would be a suitable option [2:3].

Shell and ExxonMobil raised the matter of treatment and suitability for different soil types (in particular fine-grained soils) and that the size of the sites which these companies manage do not allow for on-site treatment [5:3, 6:2]. ExxonMobil were also concerned about the potential for a monopoly to be created and suggested that “EPA consider establishing a joint stakeholder committee chartered to set reasonable soil treatment pricing standards” [6:2]. Shell commented, “We consider that the role of controlled landfarming on site is a

viable and practicable option and could be included in Appendix A of the document” and noted that any such treatment would be subject to environmental controls that ensure environmental quality objectives of SEPPs are maintained [5:2].

Boral was supportive of the comment on page 4 of EPA Publication 786 regarding use of off-site facilities in preference to on-site treatment where this can provide an enhanced environmental outcome [3:2]. Boral also commented that “the soil treatment facilities when established should be actively supported by the regulators as they will provide greater environmental benefit than an on-site treatment” [3:2].

In its comments, Landfill Victoria anticipated that on-site remediation would need to meet the same siting criteria as licensed treatment facilities [9:2]. Landfill Victoria expected that a level playing field would be maintained to ensure that confidence in the private sector (to establish a treatment facility) would not be undermined through lower environmental constraints. Landfill Victoria also queried whether financial assurance and pollution abatement notices would be required where soil was kept in an on-site repository, and whether such repositories would be subject to similar engineering standards as landfills [9:2].

The Property Council wanted more information on when a treatment option would be deemed “available” and “economically viable” [10:2]. The Property Council also noted that the Government appeared to be relying on market forces to create a viable soil remediation industry [10:3]. It recommended that the Government provide

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investment in research and development for commercially viable soil remediation technology.

URLC stated that it was its experience that technologies were not readily available, and suggested that EPA works with URLC and other representatives from industry to “bring suitable technologies into the industry by developing their application on current contaminated site redevelopment projects” [11:2-3]. URLC also commented that a working group could be established to identify where the regulatory process could be improved and examine alternatives [11:4].

Response to comment – EPA does not have a preference for on-site or off-site management of contaminated soil. EPA encourages the use of management options that provide the best environmental outcome.

In accordance with the waste management hierarchy, the treatment of soil to enable recycling, irrespective of it occurring on-site or off-site, is preferred to treatment followed by on-site or off-site containment. Any on-site treatment or containment would need to provide equivalent environmental protection to that which could be achieved off-site. EPA requires ongoing management of sites where contaminated soils have been placed in an on-site repository.

Following the comments received from the Property Council, URLC, other stakeholders and EPA’s technical advisory committee, EPA has classified the contaminated soil types as “available in the foreseeable future”. Facilities for the off-site storage or treatment of the classified contaminated soils are not currently available in Victoria. However there are technologies that could be used on-site in some

circumstances, and EPA encourages adoption of such treatment options where practicable.

4. UNCERTAINTY FOR THE LAND DEVELOPMENT INDUSTRY

Summary of comment - The land development industry was concerned about the uncertainty associated with the implementation of the proposed classification and the expected shortage of landfill space for contaminated soils [4:1]. Concerns were also raised about the economic risk to the development industry through ineffective implementation of the classification, and the impact that the classification would have on “planned developments that already have significant investment” [10:2]. UDIA commented that “Developers seek to improve sites and the environment through their activity not create waste” and “Developers are not the waste creators but are branded as such by ownership of a contaminated site” [14:3]. UDIA and URLC believed that the proposed classification and recent changes to the auditor system have the potential to be a disincentive to development and might push the development of housing to sites that can be more easily developed. UDIA commented that the paper appears to be focussed on “creating a market for contaminated soil treatment at the detriment of the development industry’s activities” [14:3].

The potential increased cost of remediation (through on-site or off-site treatment) was also a concern for developers, as this was seen to increase the risk associated with the development of contaminated sites [10:3] [11:2]. The lack of guaranteed technologies, alternatives and the use of “locally

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untested, uncertain and unknown approaches to site remediation” was another issue raised by the development industry [11:4-5]. UDIA commented that as EPA is unable to assure or guarantee that new technologies are available and commercially viable, this would put the building and land development industry at risk [14:2].

URLC wanted to see the “rapid introduction of cost effective and efficient treatment processes into the Victorian remediation industry” [11:2]. In order to mitigate the effect of increased costs “EPA must assist in the facilitation of new treatment technologies”, via an efficient and flexible approval and licensing process [11:3]. The City of Stonnington noted that none of the proposed treatment technologies were successful in treating soils from the West Melbourne Gasworks, and did not want to see money wasted in “attempting to deliver an outcome by prematurely attempting to use this approach” [15:1].

URLC noted the State Government’s Metropolitan Development objectives and that EPA should consider these [11:2-3]. Rather than “mandating the requirement for locally untested, uncertain and unknown approaches to site remediation” URLC recommended that EPA aid research and development into testing and implementing new technologies in order to assist the Metropolitan Development objectives [11:3-4].

Response to comment – Landfill costs for contaminated soils have increased significantly over the past few years, with current prices at approximately \$160 per tonne. Treatment costs are expected to be of the same magnitude for most

contaminated soils, with the additional likely benefit of being able to recycle the soil.

While the transition period during the implementation of the classification may result in some uncertainty for the industry, if no action were to be taken now there would be no infrastructure in place to treat contaminated soils once landfills able to accept contaminated soils have reached capacity. The Government is undertaking a consultation process with community and industry on siting of facilities that can treat a range of contaminated soils. The aim of the process is to assist in the establishment of soil treatment and recycling facility(s) in the near future. Therefore, it is expected that opportunities for treatment and recycling will become available in the foreseeable future.

EPA agrees that the redevelopment of contaminated sites results in its improvement. However, the traditional practice of ‘dig and dump’, moving the contaminated soil from one place to another, is simply transferring the problem. This practice also does not recognise the potential value of the soil.

EPA will work with industry in implementing the classification to minimise the uncertainty and risk during the transition from landfilling to contaminated soil treatment and recycling wherever practicable.

EPA does not consider that the classification of contaminated soil will inhibit the remediation and development of contaminated sites for productive purposes; rather the classification provides a framework to support the development of infrastructure for the storage and treatment of contaminated soils.

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5. USE OF INTERIM MEASURES

Summary of comment - ExxonMobil and Shell raised concerns about uncertainty associated with the interim measures required during the implementation of the classification, and what impact that may have on underground storage tank replacement programs (that generate contaminated soil). The cost of using interim measures for small volumes of contaminated soil generated through these replacement programs was also a concern [5:3, 6:1].

Shell suggested that waste “generators” be allowed to establish repositories (possibly also with treatment technologies) on existing owned sites, and for these to be exempted from the works approval and licensing process but subject to conditions and reporting requirements to ensure “ambient environmental quality objectives established in SEPPs are maintained” [5:3]. Shell was also concerned about repositories for soil being operated by third parties, as there might be uncertainty about costs and liability and noted that these issues should be addressed further [5:4]. ExxonMobil requested that limited landfilling be allowed when “greater overall environmental benefit is demonstrated” [6:2].

Melbourne Water commented that the cost of having to transport the soil twice, once from the site to the storage facility, and then to the treatment facility, needed to be taken into account (as transport was seen to be a major cost in managing soil) [12:2].

WREC believed that storage options be developed immediately pending recycling [7:3]. These storage facilities could divert contaminated soils from sites such as Docklands away from landfill.

The development industry recommended that a transition period of 3-5 years be set to minimise the risks associated with the new classification, with interim measures provided during this time [10:2]. Both the Property Council and UDIA sought more time for consultation and development of interim measures, so that Government could work in partnership with the industry [10:2, 14:2-3]. UDIA asked what would happen to those soils that go to recycling centres that cannot be treated and would interim storage facilities be provided while the technology becomes available [14:2].

Response to comment – The use of interim measures, such as the use of storage facilities, will assist industry during the transition between landfilling of contaminated soil and the establishment of soil treatment facilities. However the development of interim facilities will be subject to relevant statutory approval processes and will be required to provide an equivalent level of environmental protection as permanent facilities.

EPA will work with industry to assist in the transition from landfilling to soil treatment and recycling during the implementation of the classification.

6. MANAGEMENT OF LOW LEVEL CONTAMINATED SOIL (LLCS)

Summary of comment – A number of submissions raised issues relating to LLCS. It was commented that LLCS is a significant portion of the waste that could be diverted from landfill and that reuse without treatment can be practicable and should be allowed for [1:1]. Clarification was sought on when LLCS was considered to be part of the classification, that is, when to include it in the quantity that

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triggers the requirement to prepare an environment improvement plan [5:2]; whether transport of LLCS to landfill remains an acceptable option [2:2]; and if the classification covered reuse of solid inert waste materials [1:2].

Landfill Victoria queried the use of LLCS as cover material at landfills, seeking clarification whether this practice would still be allowed under the classification [9:2], and others commented that this practice was just a “back door” method of dumping LLCS [7:1].

WREC wanted EPA to ensure that if both contaminated soil and LLCS have been identified at a site that all soils would be treated, not just the higher-level contaminated soils [7:1].

Melbourne Water requested that EPA develop guidance on reuse methods for LLCS, in particular for sediments from waterway management activities [12:1-2]. Melbourne Water offered its assistance in this process. Melbourne Water also suggested that transport requirements be eased for LLCS being used as cover material, such as the need for permitted vehicles and transport certificates [12:2].

Response to comment – The classification for contaminated soils is applicable to soils contaminated with total petroleum hydrocarbons, monocyclic aromatic hydrocarbons, polycyclic aromatic hydrocarbons and organochlorine compounds. EPA encourages the development of environment improvement plans for all contaminated sites, including those with LLCS. Section 2 of this document provides further information on the use of EIPs.

Reuse of LLCS without treatment is not prohibited by the classification, nor is the use of LLCS as cover material at landfills.

All requirements for the transport of LLCS under the *Environment Protection (Prescribed Waste) Regulations 1998* (the Regulations) will still apply. Where wastes are being transported to undergo reuse or recycling, exemptions from certain requirements are available under the regulations and must be approved by EPA.

This classification does not apply to the reuse of solid inert waste materials.

7. OTHER ISSUES

Relationship of draft classification with other existing EPA documents

Summary of comment – JCON International et al. [2:1] queried which ‘classification’ would take precedence if there was a conflict between EPA Publications 448 *Classification of Wastes 1995* and 626 *Management of Waste Contaminated Soil and Low Level Contaminated Soil 1998* and the new classification under the policy.

Melbourne Water suggested reviewing the above documents to see if a simpler approach could be established, as the increasing number of documents that require consideration when ‘classifying’ contaminated soil was making the management of contaminated soils overly complicated [12:1].

Response to comment – The information bulletin “Classification for Contaminated Soil” (Publication 878) describes how to manage soils contaminated with total petroleum hydrocarbons, monocyclic

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aromatic hydrocarbons, polycyclic aromatic hydrocarbons and organochlorine compounds. Classification in this context is purely for the purposes of meeting the objectives of the policy.

Publications 448 and 626 are intended to complement each other; there should be no conflict between the requirements contained within these publications and the classification under the policy. Together they explain the statutory framework for different aspects of the management of contaminated soils.

EPA Publication 448 specifies the quantitative standards used to define contaminated soil and low level contaminated soil as prescribed industrial wastes under the Regulations. EPA Publication 626 provides detailed guidance on how to manage contaminated soil and low level contaminated soil in accordance with the Regulations and other requirements under the *Environment Protection Act* 1970.

Role of risk assessment

Summary of comment - Shell noted that risk assessment did not appear to be recognised as an option within EPA Publication 786.

Response to comment – The use of risk assessment to assist in identifying the need for remediation for a contaminated site is supported by EPA. While risk assessment may identify options such as leaving some contaminated soils on-site with on-going management, this would need to be reviewed on a regular basis to determine if circumstances had changed over time that would make on-site management no longer acceptable.

Limited landfill space

Summary of comment - Landfill Victoria disagreed with the inference that there is a scarcity of landfill airspace in Victoria [9:1]. Landfill Victoria commented that the policy driver should be to “improve Victoria’s management of residual contaminated soil (and other Prescribed Wastes), not to respond to a landfill airspace crisis”. In its view, the landfill space debate was around permitting new space rather than the availability of existing space.

Response to comment – The Government has stated its commitment to phase out landfills and support the use of the waste management hierarchy in the management of wastes, including contaminated soils. By allowing new prescribed waste landfills, the use of management options further up the hierarchy may be deterred and waste generators may be discouraged from adopting cleaner production.

Transportation of contaminated soil

Summary of comment - Landfill Victoria was concerned that the location of soil treatment facilities may see contaminated soil being transported over large distances (compared to current landfill locations) and “transportation to a repository licensed to accept LLCS by-product” [9:2]. Landfill Victoria called for some type of economic analysis to be conducted on this.

Response to comment – Current costs for disposal of contaminated soil to landfill have increased significantly over the past few years as the demand on landfill space has also increased. In addition, the costs associated with any future containment

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facility are likely to be greater than current costs of landfill disposal and the location of any containment facility is yet to be determined.

While the future location of soil treatment facilities is unknown at this time, the establishment of these facilities is aimed at providing certainty for industry that there will be facilities able to receive contaminated soils following the introduction of the classification.

11	Urban and Regional Land Corporation (URLC)
12	Melbourne Water
13	GHD
14	Urban Development Institute of Australia (Victoria)
15	City of Stonnington

LIST OF SUBMISSIONS

The following submissions were received in response to the Draft Classification (Contaminated Soil) and Background Paper.

- 1 Ian Gregson, Environmental Auditor (Contaminated Land) – Egis Consulting
- 2 JCON International, Austech Petroleum Services and Kingston Environmental Services
- 3 Boral Landfill and Waste Business, Boral Recycling Pty Ltd
- 4 Victorian Chapter of Australian Contaminated Land Consultants Association (Inc.)
- 5 Shell Engineering Pty Ltd
- 6 ExxonMobil
- 7 Western Region Environment Centre (WREC)
- 8 Department of Human Services (DHS)
- 9 Landfill Victoria – Waste Management Association of Australia (Victorian Branch)
- 10 Property Council of Australia