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# Underground petroleum storage systems leakage

Leakage from underground petroleum storage systems (UPSS) is a significant problem with both environmental and safety implications. Improved UPSS management practices are necessary to ensure protection of people, property and the environment.

To comply with statutory duties under the *Environment Protection Act 1970*, owners/operators of UPSS are expected to either implement the measures from EPA Victoria *Guidelines on the design, installation and management requirements for underground petroleum storage systems* (Publication 888.4), or demonstrate that their alternative approach is as good, or better, when it comes to protecting people, property and the environment.

This checklist has been developed with assistance from industry bodies (including the Victorian Automobile Chamber of Commerce [VACC] and the Australasian Convenience and Petroleum Marketers Association [ACAPMA]) to assist businesses to provide a low-cost way of reviewing compliance with Victoria’s environmental requirements. Because the requirements are numerous and often complicated, this checklist cannot be a complete guide to all of your legal obligations. You may have obligations that are not covered in this checklist.

If you have questions regarding this checklist, please call EPA Victoria on 1300 372 842 (1300 EPA VIC).

**Who should complete this checklist?**

This checklist should be completed by the company or persons which have primary responsibility for managing and maintaining the UPSS on-site.In some businesses, UPSS ownership and management structures may be complex. If you are struggling to answer an item on the checklist, you may be able to find out more information by contacting your company’s environmental management team, service providers, or regional manager.

Completed copies of this checklist should be kept for your records.

## General information

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| --- | --- | --- |
| Date self-evaluation completed: | Owner of the site (company name): | |
| Site name: | Owner of the UPSS (company name): | |
| Address: | Operator of the UPSS (company name): | |
| Suburb: | State: | Postcode: |
| Contact person(s): | Contact phone number(s): | |
| Contact email(s): | | |

As per EPA Publication 888.4 Section 2 (page 5), at a *minimum*, the following details need to be readily available on-site:

* documented information on who owns and occupies both the site and its UPSS, including specific contractual/franchise arrangements
* responsibilities (and contact details) for activities associated with the management of the UPSS
* details (for example, size and location) of all UPSS infrastructure (including tanks, pipes and fill parts).

## Document all currently operating on-site UPSS

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| --- | --- | --- | --- | --- | --- |
| UPSS ID# | UPSS contents / fuel grade | Dimensions | Capacity | UPSS type  (corrodible steel, non-corrodible tanks, tanks with secondary containment) | Year installed |
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## Tank leak detection

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|  | Are all UPSS at the site operating under a leak detection system? | Yes | No **Action needed: All UPSS should operate under a leak detection system**  *See 888.4 Section 4.1 (page 14)* |
|  | Examples of leak detection methods include:   * automatic tank gauging plus line leak detection * Statistical Inventory Reconciliation Analysis (SIRA)   *For more examples, see 888.4 Table 3 Section 4.1 (page 12) and Table 4 Section 4.2 (page 13)* |  | List the tank/UPSS ID#s not operated under a  **leak detection system**  N/A |
|  | Is the leak detection system rated to detect a release of at least 0.76 L/hour (or a release of 18 L/day), with greater than 95 per cent confidence (and less than 5 per cent false positive)? | Yes | No **Action needed: Leak detection systems need to meet minimum detection standard**  *See 888.4 Section 4.1 (page 12)* |
|  | Do you have documents available on-site (or at a readily accessible location) to confirm that the leak detection system meets the performance standards and verification requirements set out in publication 888.4? | Yes | No **Action needed: You should be able to demonstrate that the leak detection system is adequate**  *See 888.4 Section 4.1 (page 12)* |
|  | Does the leak detection system report monthly or more? | Yes | No **Action needed: Leak detection reporting needs to happen at an adequate frequency**  *See 888.4 Section 4.1 (page 12)* |
|  | Are tank pit observation bores installed for all UPSS commissioned or upgraded since May 2008? | Yes | No **Action needed: Tank pit observation bores are needed for all systems installed since May 2008.**  *See 888.4 Section 3.2 (Table 1) and Section 4.1  (page 12). Refer to section 4.4.3 of Australian Standard AS 4897-2008 for detailed guidance on requirement to install tank pit observation bores* |
|  | Are records of all aspects of leak detection maintained on-site or at a readily accessible location? | Yes | No **Action needed: Records of all aspects of leak detection should be maintained**  *See 888.4 Section 4 (page 12) and Appendix 5  (page 23)* |

## Statistical inventory reconciliation analysis (SIRA)

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|  | Is SIRA used to monitor for leakage from UPSS  on-site? | Yes | No  *Go to 14* |
|  | Are SIRA data and reports maintained on-site or at a readily accessible location? | Yes | No **Action needed: Leak detection records need to be readily accessible**  *See 888.4 Section 4 (page 12)* |
|  | Have any SIRA reports in the last 12 months indicated a potential or likely leak from a UPSS? | Yes | No  *Go to 15* |
|  | Have you promptly investigated the reported potential or likely leaking UPSS? | Yes | No **Action needed: All potential UPSS leaks must be investigated and verified**  *See 888.4 Section 5 (page 14)* |
|  | Did the investigation identify a leak from the UPSS? | Yes | No **Detail the identified reason for the leakage false report**  *Go to 15* |
|  | Have you stopped the leak and undertaken clean-up of leaked fuels/oils so as to mitigate threats to people, property and the environment? | Yes | No **Action needed: Appropriate action to stop and clean up a leak from a UPSS must be taken**  *See 888.4 Section 5 (page 14)* |
|  | Were measures taken to:   * repair, upgrade or replace the leaking UPSS   or   * ensure that the leak does not recur? | Yes  *Go to 15* | No  **Action needed: Appropriate action to ensure the leak does not recur must be taken**  *See 888.4 Section 5 (page 14)*  *Go to 15* |
|  | Is another form of leak detection used on this site? | Yes  Specify: | No **Action needed: Every UPSS needs to operate under a leak detection system**  *See 888.4 Section 4.1 (page 12)* |

## Site sensitivity assessment

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| --- | --- | --- | --- |
|  | Has a competent and experienced hydrogeologist,  or a professional with demonstrated competence  and experience in hydrogeology, undertaken a site sensitivity classification for the site (or alternatively:  has the site been assumed to be a sensitive site)? | Yes | No **Action needed: Site sensitivity classifications need to be performed (alternatively you should assume the site is a sensitive site)**  *See 888.4 Appendix 4 (page 19)*  *Go to 17* |
|  | Did the assessment confirm that the site is sensitive? | Yes | No, this site was not classified as sensitive.  **End of self-assessment** |

## Groundwater monitoring

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|  | Are groundwater monitoring bores installed at this site? | Yes | No **Action needed: Groundwater monitoring bores must be installed at sensitive sites**  *See 888.4 Section 3.2 (page 7)*  **End of self-assessment** |
|  | Has a competent and experienced hydrogeologist,  or a professional with demonstrated competence  and experience in hydrogeology, assessed the site  to determine the number and location of groundwater monitoring bores required? | Yes | No **Action needed: Need to ensure the number and location of groundwater monitoring bores is appropriate**  *See 888.4 Section 4.1 (page 13)* |
|  | If the site has been classified as, or assumed to be,  a sensitive site, are you undertaking periodic groundwater monitoring at a minimum monthly frequency? | Yes | No **Action needed: Groundwater quality monitoring at a sensitive site should include monthly observation** **for separate phase hydrocarbons**  *See 888.4 Section 4.1 (page 13)* |
|  | Are groundwater monitoring records maintained on-site or at a readily accessible location? | Yes | No **Action needed: Records of all aspects of leak detection should be maintained**  *See 888.4 Section 4 (page 12)* |
|  | Do the groundwater monitoring results indicate the presence of hydrocarbons in groundwater? | Yes | No |
|  |  | **End of self-assessment** |
|  | Has an investigation of the indicated leak begun? | Yes | No **Action needed: All potential UPSS leaks must be investigated and verified**  *See 888.4 Section 5 (page 14)*  **End of self-assessment** |
|  | Did the investigation identify a leak (as opposed to another source of hydrocarbons such as spills)? | Yes | No |
|  | *Efforts should be made to identify the potential source/s of hydrocarbons in groundwater*  **End of self-assessment** |
|  | Have you stopped the leak and undertaken clean-up of leaked fuels/oils so as to mitigate threats to people, property and the environment? | Yes | No **Action needed: Appropriate action to stop   and clean up a leak from a UPSS must be taken**  *See 888.4 Section 5 (page 14)* |
|  | Were measures taken to:   * repair, upgrade or replace the leaking UPSS   or   * ensure that the leak does not recur? | Yes | No **Action needed: Appropriate action to ensure the leak does not recur must be taken**  *See 888.4 Section 5 (page 14)*  **End of self-assessment** |

*Guidelines on the design, installation and management requirements for underground petroleum storage systems* (Publication 888.4 )is available on EPA’s web site **www.epa.vic.gov.au**.

Contact EPA Victoria on 1300 372 842 (1300 EPA VIC) if you require any assistance.