HAWAII STATE DEPARTMENT OF HEALTH

The **Hazard Evaluation and Emergency Response Office** (HEER Office) is part of the Hawai'i Department of Health (HDOH) Environmental Health Administration whose mission is to protect human health and the environment. The HEER Office provides leadership, support, and partnership in preventing, planning for, responding to, and enforcing environmental laws relating to releases or threats of releases of hazardous substances.

# A Landowner's Guide to Environmental Hazard Management Plans (EHMP)

This fact sheet provides landowners and interested parties with an explanation and discussion of their responsibilities associated with an Environmental Hazard Management Plan (EHMP) in Hawai'i. This fact sheet explains what an EHMP is, what you need to know about it, and landowner responsibilities under the EHMP as well as provides resources for further information.

## *What is an EHMP?*

An EHMP documents the presence of a contaminated environmental medium (e.g., soil, soil vapor, sediment, surface water, and/or groundwater) remaining on a site following assessment and any partial cleanup actions, and describes how the contamination must be managed in the future. Usually this means that the contamination left in place at the property does not pose a current hazard to site operators or users if the EHMP is followed. However, if the property use changes, for example, from commercial/industrial use to residential/unrestricted use, if deeper contaminated soil is unearthed and brought to the surface, transported offsite, uncovered, or the EHMP is not followed, human or ecological receptors might be exposed and harmed.


***Example of map noting specific areas of residual contamination onsite as well as types of contamination.***

The HDOH HEER Office requires all contaminant concentrations to be screened against unrestricted/residential land use criteria during environmental assessments, even if a property is located in an industrial zoned area, so that potential hazards for the most sensitive possible (or potential future) land use will be identified. Therefore, the most common case for the need to prepare an EHMP is if contaminants at a property exceed HDOH unrestricted/residential screening criteria, but not commercial/industrial screening criteria.

The EHMP presents all necessary information in a single, stand-alone document that identifies what contaminants remain on the property above unrestricted/residential use screening criteria, where the remaining contamination is located, potential environmental concerns posed by the contamination, appropriate handling and disposal instructions, and responsibilities of individual parties (owners and operators) to ensure that EHMP controls are maintained and nobody is harmed. Clear definition of responsibilities for the implementation of the EHMP is essential and multi-party responsibility for individual tasks should be avoided to ensure accountability. Specific contaminants, potential environmental hazards, and the potential routes of exposure (i.e., a Conceptual Site Model) are documented in an Environmental Hazard Evaluation (EHE). A brief

EHE is typically included as a section within the EHMP, although a more detailed EHE might be prepared in a separate document.

There may be different types of EHMPs based on the specific phase and associated exposure concerns at a property. For example, there are construction-related EHMPs for handling contamination during surface or subsurface construction activities that could expose construction workers, nearby people, or ecological receptors. This type of EHMP is linked to a specific activity (construction) and is generally labelled as an EHMP for Construction activities. Interim EHMPs may be prepared for large operating facilities where environmental assessments are limited (and on-going) due to structures and work activities at the site. For example, the HEER Office recommends Interim EHMPs for petroleum terminals that often lack a complete assessment due to the difficulty of access to environmental media at these active terminals. These EHMPs require periodic (e.g., annual) updates as new information becomes available as well as on-going HEER Office oversight.

Site-specific final EHMPs are generally self-implementing, meaning HDOH does not actively oversee the site after a *No Further Action Letter with Institutional Controls (ICs)* letter is issued with the associated EHMP, and it is the owner's responsibility to ensure that the EHMP is followed. However, EHMP controls for such sites may include periodic notification or reporting to the HEER Office regarding maintenance of controls or monitoring of contaminants. The HEER Office also has the option to conduct periodic site visits and review EHMP controls. For some EHMPs such as those addressing low-level petroleum contamination, there may not be a need for periodic notification requirements to the HEER Office or long-term monitoring requirements. Refer to the HDOH guidance on *Long-Term Management of Petroleum Contaminated Soil and Groundwater* (HDOH, 2007) for additional information on petroleum sites and long-term management.

If contamination above applicable HDOH screening criteria remains on a site and an EHMP is required, the EHMP is typically referenced in the site's regulatory "closure" document. A common regulatory closure document used in these cases is a *No Further Action (NFA) with Institutional Controls* letter. The NFA with Institutional Controls letter (that references the site EHMP) should be noted to the property deed so that information on the remaining contamination and specific controls required by HDOH will be clearly identified in any property transaction. Under some circumstances the HEER Office might request that the EHMP be recorded with the property deed as well, or as part of a covenant to the deed.

The HDOH HEER Office is responsible for reviewing and approving the EHMPs. The HEER Office also is the point of contact for landowners in case the EHMP needs to be updated, and to ensure the property owner/operator is complying with the EHMP. Depending on property-specific circumstances, other state and federal agencies may have complementary roles in helping to manage long-term residual contamination and reduce future exposure.

## *What is the purpose of an EHMP?*

An EHMP is designed to protect those working or living on the property from contamination that is left in place following assessment and any partial cleanup actions. The EHMP also typically restricts the disturbance of contaminated soil and/or groundwater to avoid off-site migration, or the reuse of contaminated media off-site. The EHMP is intended to be user-friendly, providing clear and precise information about the specific chemicals of concern at the property, what hazards are presented if you are exposed to contamination, the specific location of contaminated soil and/or groundwater, and requirements for long-term management. The EHMP also describes the responsibilities of the landowner to notify those working or living on the property in order to prevent accidental disturbance of the contamination and exposure to these chemicals.

The EHMP is a means for the protection of human health and the environment, but contamination remaining on a site does reduce the value of the property. The HDOH HEER Office can only require protection of human health and the environment under current or reasonably anticipated future conditions, which are often linked to commercial/industrial use criteria. Therefore, it is strongly advised that property owners clean up contamination to unrestricted/residential use criteria (or to the extent feasible) to avoid land use restrictions, long-term institutional controls, and/or reduced property value. Phase I and Phase II Environmental Site Assessments can help current or prospective property owners and operators determine the environmental contamination status of a property.

**Purpose of an EHMP**

- ✓ **Details long-term protective measures that must be maintained to prevent exposure now and in the future**
- ✓ **Provides protection of people working or living at the property (including contractors/guests/visitors) from exposure to on-site chemical hazards**
- ✓ **Informs landowners (and site users) about their responsibility to protect others on the property from exposure to contaminants**
- ✓ **Identifies specific chemicals of concern and their potential hazards, and provides a summary of site environmental investigations**
- ✓ **Explains HDOH's decision leading to long-term management of the contaminants on site (versus removal or other options)**
- ✓ **Informs future landowners (and site users) of remaining site contamination, controls, and related responsibilities**

## *What is typically included in an EHMP?*

The EHMP documents the chemicals of concern associated with the site contamination, the location and depth of the soil, soil vapor, sediment, surface water, and/or groundwater contamination present, and the specific potential environmental hazards posed by those chemicals. These potential hazards might include direct exposure of property residents or workers to the chemicals, the need to cap areas to prevent leaching and contamination of groundwater, the potential for vapors from contaminated soil or groundwater to intrude into overlying buildings, the presence of contaminated groundwater that exceeds acceptable levels for drinking water or that could be toxic to aquatic life if discharged into storm sewers during underground utility work, or the presence of soil and water heavily contaminated with petroleum that could foul equipment, pose potential explosion/backflash risks, or cause odor and runoff concerns if disturbed. Specific environmental hazards are typically documented in a separate Environmental Hazard Evaluation (EHE) and summarized in the EHMP to ensure that the risks of any remaining impacted media are clearly identified and are properly managed.

A discussion of the need for and management of any institutional controls (administrative and/or engineering controls) must be included in the EHMP. This could include restrictions on future use of the property, for example, only commercial/industrial use, restrictions such as not using on-site water as drinking water, use of physical barriers that prevent exposure to contamination such as installation of vapor mitigation systems under buildings, capping of contaminated soil to prevent exposure or leaching, long-term monitoring of groundwater, or other options. The EHMP can also provide information on proper handling and disposal of contaminated material and directions for additional sampling should a property configuration change (e.g. if new buildings are constructed in an area of potential vapor hazards, or if access is obtained to areas that could not be evaluated previously due to the presence of buildings or other hard surfaces). The EHMP should also include emergency and response actions if people are accidentally or unintentionally exposed to residual contamination. A suggested outline for a typical EHMP is provided on page 5 of this fact sheet.

## *How long is the EHMP required to be maintained?*

The EHMP provides long-term management of on-site residual contamination. The EHMP must be maintained and management activities, notifications, and training followed unless site conditions change. To ensure human health and the environment will be protected, landowners must coordinate with HEER Office and get prior approval for activities that might disturb contamination managed under an EHMP. The EHMP outlines the procedures for working with HDOH if these conditions arise. For sites with only petroleum contamination, the HEER Office guidance on *Long-Term Management of Petroleum Contaminated Soil and Groundwater* (HDOH, 2007) provides more specific guidance of relevance to EHMPs. If at a later time, a site is no longer believed to pose any hazards under unrestricted/residential use criteria, data supporting a change in status can be submitted to the HEER Office for review. If the data demonstrates that there are no further residual hazards under unrestricted land use, HDOH may issue a NFA letter (without ICs) and an EHMP for the property would no longer be necessary.

## *What are the landowner's responsibilities under an EHMP?*

The landowner is the primary responsible party for the implementation of the EHMP at the property. The principle responsibility of the landowner is to make sure the requirements of the EHMP are accessible and properly carried out in order to protect people living and working on the property from the remaining contamination. Oversight and compliance with the requirements described in the EHMP are also the responsibility of the landowner to ensure protection of the environment.

***All on-site workers and contractors that expose soil (for example for utility repairs and even landscaping), must have access to and be informed of the EHMP on residual contamination at the property and what protection(s) may be needed.***

**Some Common Landowner Responsibilities Under an EHMP**

- ✓ **Protect those living and working at the property by maintaining and managing the property according to the details listed in the EHMP**
- ✓ **Provide training for people living or working at the property about the environmental hazards and what they need to do and not do to avoid them**
- ✓ **Notify tenants, contractors, visitors, and others about on-site contamination and environmental hazards they may encounter**
- ✓ **Notify HDOH beforehand of any changing site conditions affecting the EHMP and residual contamination**
- ✓ **Update the EHMP as needed, especially if site conditions or land ownership changes**
- ✓ **Update the EHMP only after discussed and approved by HDOH**
- ✓ **Be aware that the EHMP is typically referenced in a final site closure letter and should be noted to the property deed so that any future landowners are aware of the need to continue these responsibilities**

Training and notification about the on-site environmental hazards for people living and working on the property, including temporary workers like construction workers, is a key responsibility of landowners. Even if there are on-site activities conducted at the property by parties other than the landowner, the landowner is responsible for notifying these parties of the EHMP, providing them with a copy of the EHMP, if appropriate, and ensuring they are following the necessary procedures to protect human health and the environment. The EHMP will provide direction on how to conduct site actions that could affect the on-site contamination. Following these directions, even if the work is done by contractors, is ultimately the responsibility of the landowner.

The landowner and contractors conducting work at the site should coordinate with HDOH, as necessary, to ensure that the EHMP is properly followed. The EHMP might need to be periodically updated to reflect changes in site conditions or other issues. Changes in site conditions could also trigger the need for additional environmental evaluations or sampling. Updating an EHMP requires prior HDOH consultation and approval. The EHMP also provides details on emergency and other response actions that should be taken if people are accidently or unintentionally exposed to the on-site contamination. The landowner needs to be familiar with these response actions and know how to initiate their implementation if necessary.

## *Does HDOH have a template for an EHMP?*

The outline below lists the primary topics that should be covered in an EHMP. Additional information should be included as agreed to by the landowner and HDOH. This outline is also included in Section 18.5.16 of the HDOH Technical Guidance Manual (TGM). See the following page for information on how to access the TGM.

### Outline for a Typical EHMP

**1 Introduction and Purpose**
**2 Background**
- 2.1 Brief Summary of the Site Background and History of Contaminant Releases
- 2.2 Chemicals of Potential Concern
- 2.3 Conceptual Site Model

**3 Clear Map Descriptions of the Extent and Magnitude of Remaining Contamination**
Map must be to scale, with a north arrow, and include footprints of any on-site buildings or planned building structures, and nearby contaminated areas

**4 Summary of Potential Environmental Hazards**
**5 Long-Term Monitoring Requirements**
**6 Engineering Control Requirements**
**7 Institutional Control Requirements**
**8 Implementation**
**9 Soil and Groundwater Management for Future Site Activities Affecting On-Site Contamination**
- 9.1 Consultation with HEER Office
- 9.2 Pre-Excavation Evaluation of Soils and Groundwater
- 9.3 Soil Excavation and Handling
- 9.4 Soil Stockpiling/Storage
- 9.5 Soil Disposal
- 9.6 Groundwater Handling
- 9.7 Groundwater Disposal

**10 Exposure Management**
- 10.1 Awareness/Training for Contamination Managed On-Site
- 10.2 Construction Worker Notifications and Protections
- 10.3 Use Restrictions to Protect Site Workers and Guests
- 10.4 Emergency Response for Chemical Exposure
  - 10.4.1 Eye and Skin Exposure to Chemicals
  - 10.4.2 Internal Exposure to Chemicals
  - 10.4.3 Inhalation Exposure to Chemicals

**11 Conclusion**
**12 References**

## Further Information

***For questions related to Environmental Hazard Management Plans contact:***

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Hazard Evaluation and Emergency Response Office
919 Ala Moana Boulevard, Room 206
Honolulu, Hawai'i 96814

Telephone: (808) 586-4249
Website: http://hawaii.gov/doh/heer

***Other Resources for Environmental Hazard Management Plans:***

The on-line HEER Office Technical Guidance Manual (TGM) provides information about EHMPs in Sections 18.5.16, 19.3, and 19.6. The TGM is available at: http://www.hawaiidoh.org

HDOH, 2007. Hawai'i Department of Health, Office of Hazard Evaluation and Emergency Response. Long-Term Management of Petroleum-Contaminated Soil and Groundwater. June 2007. Website URL: http://www.hawaiidoh.com/references/HDOH%202007c.pdf
This guidance also is included as Appendix 19-A (Section 19) of the HEER Office TGM: http://www.hawaiidoh.org

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