



APPENDIX 9-D

**GUIDANCE FACT SHEET FOR USE WHEN PETROLEUM
CONTAMINATION IS ENCOUNTERED DURING SUBSURFACE
SOIL EXCAVATION**

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DURING SUBSURFACE SOIL EXCAVATION**

PURPOSE: The purpose of this Guidance Fact Sheet is to provide guidance for construction projects when petroleum or petroleum contaminated soil (PCS) is encountered. These guidelines apply to construction projects that involve soil excavation, except associated with underground storage tank (UST) removal. These guidelines are consistent with Hawaii Revises Statutes Chapter 128D, Hawaii Environmental Response Law. Administrative procedures must be in place within your organization, so that project managers, contract workers, field workers, health and safety personnel, and essentially anyone who might be involved in construction and the excavation of soils follow these basic guidelines:

When must notification to the HEER Office be made?

The reportable quantity for petroleum is one of the following:

- a) Any amount of oil which when released into the environment causes a sheen to appear on surface water, or any navigable water of the State.
- b) Any free product that appears on groundwater.
- c) Any amount of oil released to the environment greater than 25 gallons.
- d) Any amount of oil released to the environment, which is not contained and remediated within 72 hours. Note: The HEER Office interprets this criteria to require petroleum-stained soil encountered during excavation work to be reported.

Who must notify?

Any person who has any knowledge of a release of a reportable quantity must immediately notify the HEER Office. Failure to notify the HEER Office of a release is subject to a civil penalty not to exceed \$10,000 for each day of failure to report.

What is the number to call?

Hawaii State Department of Health, Hazard Evaluation and Emergency Response Office (HEER Office):

(808) 586-4249 during working hours, Monday – Friday, 7:45 a.m. – 4:30 p.m.

or

(808) 247-2191 during non-working hours including holidays.

What information is required to be provided to the HEER Office?

The information gathered should be sufficient to answer the following, but notification shall not be delayed due to incomplete notification:

- 1. Name of the observed chemical released
- 2. Approximate quantity observed
- 3. The location and an address of the release. The location may be determined by either surveying by a licensed surveyor or the use of a Global Positioning System (GPS) unit, which provides latitude and longitude. The latitude and longitude of the

contaminated area should be accurate to within 25 feet of the actual position. A detailed map should be submitted to the HEER Office at a later date

4. The name, address, and telephone number of the caller
5. The name, address, and telephone number of the owner/operator of the site where the release has occurred
6. The name, address, and telephone number of the contact person at the site where the release has occurred
7. Measures taken or proposed to be taken in response to the release at the time of the notification
8. Any other information, including but not limited to, potential on-site worker and public or environmental impacts

Who else should be notified?

If a party other than the landowner is conducting the project, then a separate notification needs to be made to the landowner to allow them to determine their liability and the next course of action.

What additional steps must be taken?

1. When petroleum or PCS is discovered during construction activities, an immediate determination is needed as to whether it may be a threat to the health and welfare of on-site workers or the nearby public.

If a combustible hazard is identified, an Emergency Response Plan should be put into effect. No work may continue until the area is determined to be safe.

[Note: A Combustible Gas Indicator may be used to determine if there is a flammable or explosive potential. Each combustible gas has its own Lower Explosive Level (LEL) and its Upper Explosive Level (UEL). For example, methane gas has a LEL of 5 percent (%) by volume and an UEL of 15% by volume. Between 5 to 15% by volume, a spark could cause an explosion. If the atmosphere has less than 5% methane, an explosion cannot occur even if a source of ignition is present. Likewise, if the atmosphere has greater than 15% methane, the air-fuel mixture is too rich to burn. Gasoline has a LEL of 1.4% by volume and an UEL of 7.4% by volume.

2. The project may continue with implementation of a Health and Safety Plan in accordance with applicable occupational safety and health regulations. This plan should address exposure issues and include appropriate air monitoring.
3. If free-floating petroleum product is encountered during the project, the product is to be recovered and either re-used or disposed of appropriately.
4. Petroleum-contaminated water encountered during dewatering projects must be tested and treated as necessary prior to discharge into a storm drain or other pathway that leads to surface water bodies. At a minimum, this will usually require that the water be passed through an oil/water separator. The water should also be tested for dissolved-phase petroleum contaminants prior to discharge (at least initially). The water should be treated to meet HDOH Environmental Action Levels for discharges to surface waters or a more site-specific assessment of potential

impacts to aquatic habitats carried out. The HEER Office Environmental Hazard Evaluation (EHE) guidance can be consulted for applicable surface water environmental action levels, or call the HEER Office (808) 586-4249 during business hours for assistance.

Groundwater Management:

Groundwater that contains free product or a sheen can assumed to be contaminated with dissolved analytes. Re-infiltration, reinjection, treatment, disposal, or discharge are all acceptable options for the disposition of groundwater generated during subsurface excavation that encounters contaminated groundwater. Of these choices, re-infiltration within the Work Area where the water was extracted is the least expensive and easiest way to manage contaminated groundwater; however this option may not be feasible at all project locations.

- A. Groundwater should be reused within the Work Area and within the same aquifer where it was removed. Reuse in other areas could spread unidentified contamination or cause existing plumes in those areas to migrate.
- B. Removal and reuse must meet existing Federal and State permit requirements.
- C. If discharged to storm sewers or surface water bodies:
 - 1. National Pollution Discharge Elimination System and State permit requirements also apply. Prior to dewatering, clearance and/or permits from the CWB are required.
 - 2. Removal of floating product via an oil water separator and/or passage of the water through settling ponds or sand filters may not be adequate to reduce dissolved-phase contaminant concentrations to below action levels. Therefore, in addition to analytical screening required in applicable Federal and State permits, the HEER Office recommends:
 - a. At a minimum, all groundwater discharged to storm sewers must be analyzed for constituents related to petroleum and solvents.
 - b. Additional analytical data may be required based on knowledge of contamination within the vicinity of the work area.
 - c. The groundwater must be analyzed for known or suspected contaminants and the results must be screened against the Estuarine EALs for Surface Water Bodies, in Table D of Volume 1 of *Screening for Environmental Hazards at Sites with Contaminated Soil and Groundwater*, Fall 2011 Updates, Revised January 2012 (and updates).
 - d. For some site-specific locations, the HEER Office analytical requirements may be adjusted with advance approval. Permit requirements will not be adjusted.
- D. If discharged to sanitary sewers, contractors must follow the requirements of all permits.
- E. If discharged to a re-infiltration trench:

1. The trench must be within the Work Area, especially if the groundwater is extracted from a Work Area in the vicinity of known or observed contamination.
 2. The trench must not be an underground injection control (UIC) well by SDWB definitions. If some part of the trench system is deemed to be a UIC well, then the whole system is considered an injection well.
 3. Advance clearance from SDWB is required if a re-infiltration trench is deeper than 10 feet.
- F. UIC wells may be used, but advance planning and approval are required. SDWB permit requirements must be met for well construction, placement, use, and closure.
- G. In instances where “oily water” is disposed, the receiving facility must be permitted for that type of waste.
5. Petroleum contaminated soil is to be excavated and segregated from clean soils. Excavated contaminated soil must be placed under a liner and covered. Contaminated soil must be treated or disposed of in accordance with all applicable local, state and federal requirements.

On-Site Management of Contaminated Soils:

When deciding whether to re-deposit contaminated soil, the time saved by proceeding with the project immediately should be weighed against the possible increase in cost caused by deferring remedial action to a later date. If re-deposition is chosen, be advised that this does not absolve any party from liability should the actions taken exacerbate potential health and environmental impacts. If the option of re-depositing is chosen, excavated soils should be stored under cover before re-deposit into the excavation. Excavated soil that is contaminated should not be placed into an excavation that is clean, i.e., an excavation other than that from which the soil was removed, otherwise the soil should be treated as in No. 5 above. Excavated soil with petroleum contamination that is re-deposited into the excavation should be provided with a cover of clean soil or cap of asphalt/concrete once the work has been completed.

6. Detailed records of the investigation, any re-deposited contaminated soils, and any other clean-up activities are to be maintained and submitted to the HEER Office.
7. In cases where a site assessment and evaluation is to be conducted, the HEER Office Technical Guidance Manual, Environmental Hazard Evaluation (EHE) Guidance, and the State Contingency Plan are accessible through the HEER Office website:

<http://hawaii.gov/doh/heer>

If uncertain of the action to take, call the HEER Office at 808-586-4249