***GTA 05-08-017**

The Environment and Deployment: Tactical Risk and Spill Response Procedures

A Soldier's Guide to Hazardous Material and Hazardous Waste Spill Prevention and Cleanup Response

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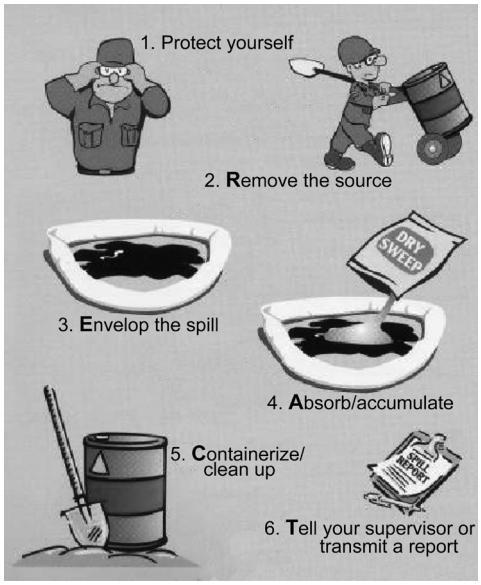

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PURPOSE

This graphic training aid (GTA) provides spill prevention and response information. Soldiers must remember that tactical risks are real, accidents happen, and spills occur. This GTA will help Soldiers and leaders prevent, prepare for, and respond to spills.

PREVENTION

Risk management is the process of detecting, assessing, and controlling risks that come from operational factors and balancing those risks with mission benefits (see FM 3-34.5). One of the main goals of risk management is to reduce risk to a negligible level. To be prepared for a spill (regardless of the cause), ensure that—

- Pollution prevention devices are in place.
- Necessary response materials are available.

Fueling points, vehicle maintenance areas, hazardous waste (HW) collection points, and hazardous material (HM) storage areas may not be available or set up at deployed locations. The key to pollution prevention is proper planning; for example, build HM and HW areas in a manner that prevents accidental spills and releases.

Material Safety Data Sheets

Material Safety Data Sheets (MSDS) are required for every HM in the supply inventory. An MSDS describes the chemical makeup of a specific product and provides health, safety, and environmental information. MSDSs may be kept with each HM area or storage locker, or they may be kept in a central location. All who work with or around HM are required to know where they are kept. MSDSs may also be kept in the HW collection areas to aid in characterizing HW generated from the use of HM.

MSDSs must be reviewed before the unit accepts unfamiliar or new HM. The MSDS describes the required personal protective equipment (PPE) which must be available to those

using the HM. Personnel using HM must be familiarized with the MSDS as part of the Hazard Communication (HAZCOM) Program. The HAZCOM Program is part of the education control measures for the Composite Risk Management process.

Hazardous Material and Hazardous Waste Areas

Careful consideration must be taken when choosing a location to establish the HM and HW areas. HM and HW areas should be located—

- Away from living areas, bunkers, ammunition storage facilities, fence lines, and dining facilities.
- Near areas where they will be used.
- Near waste generation points to reduce spill potential.

The proper location of HM and HW areas reduces the tactical risk of an adversary using the chemicals against your unit.

Keep HM and HW areas clean and orderly to reduce accidents, therefore reducing spill potential. Use the acronym **C-H-E-C-K** for HM and HW areas (table 1).

Everyone who works around or with HM and HW should be properly trained on spill response. Emergency response procedures should be posted in HM and HW areas. These procedures should include contact information for activities and individuals who require notification if a spill occurs or assistance is needed. Include the name, office, telephone number, and location of the—

- Unit environmental officer.
- Installation directorate of public works environmental office.
- Local fire department.

Note. A unit environmental SOP should be available at HM and HW areas. All deployed units should comply with the U.S. Army major command environmental SOP.

Table 1. C-H-E-C-K

Containment	• Ensure that secondary containment is used and in good condition. • Empty water from secondary containment on a regular basis, and properly dispose of it as HW if an oily sheen or another obvious sign of contamination exists.
HM and HW areas	• Choose appropriate HM and HW areas. • Post site identification and warning signs designating the HM or HW areas, according to the environmental SOP, in all languages of personnel operating in the immediate or surrounding area. • Keep HM and HW areas clean and orderly. • Provide overhead cover to reduce the amount of storm water on or around the containers, thereby reducing the likelihood of contaminants spreading or seeping into the environment.
Environmental documentation	• Keep a MSDS for each HM. • Maintain documentation of completed laboratory analysis for HW characterization. • Update the unit standing operating procedure (SOP) and spill response plan regularly. • Maintain waste accumulation logs and turn-in documents.
Containers	• Check the containers for signs of compromise (rusting, bulging). • Keep incompatible material containers segregated (see TM 38-410). • Keep container lids and bungs closed when not adding HM or HW.
Kits	• Place spill kits, first aid kits, emergency response kits, and fire extinguishers near HM and HW areas. These items should be visible (not blocked by other equipment) and checked frequently for serviceability and contents • Ensure that personal protective equipment (PPE) fits and that replacement items are available.

Compatibility of Materials

Different classes of HM and HW are required to be stored and disposed of separately. MSDS provide information to determine the classification of HM. There are specific requirements that must be met. Refer to TM 38-410 for assistance with storage requirements and determining what HM or HW are compatible and what are not. Storing incompatible HM or HW together could lead to catastrophic accidents.

Four common classifications are—

- Flammable (fuels, nonlatex paint, and paint thinner).
- Corrosive (battery acid, bleach).
- Reactive (explosives, lithium batteries).
- Toxic (rat poison, cyanide).

Secondary Containment

Secondary containment is used to prevent leaks and spills from contaminating surface water, groundwater, and soils. Secondary containment can take several forms. Examples are: barriers around storage containers to prevent liquids from escaping; containment pallets under storage drums; and engineered controls such as the floor of a containment structure sloping away from the door to prevent liquids from flowing out.

All liquid HM and HW must have secondary containment. To effectively contain a spill, the secondary containment should be large enough to hold 10 percent of the total volume of HM or HW containerized in the area; or 110 percent of the largest container in the area. Commercial drum pallets are available through the General Service Administration (GSA).

A field-expedient method of containment can be made by using a seamless, ultraviolet-resistant plastic liner and sandbags. You may need to excavate the area slightly so that it is lower than the ground around it. Place the liner in the depression and pile the sandbags around the outer edges of the

depression at ground level to ensure that spills are contained. Drum pallets may be used with this field expedient method of secondary containment but care must be taken regarding their placement to ensure the integrity of the liner is not compromised.

RESPONSE

Be prepared to respond to spill immediately. Advanced planning for environmental risks while in garrison can reduce the impact to human health and the environment and reduce the time required to clean up spills while deployed.

Ensure that up-to-date unit SOPs and spill response plans are readily available in HM and HW areas. The spill response plan will include the proper steps to take for spill response. Implementing steps is the key to successful spill response. Take the following actions for spill response:

- Locate PPE at the entrance to every HM and HW area.
- Ensure that MSDSs are available for safe and effective spill response.
- Maintain spill stations with spill response equipment (first aid kits, fire extinguishers, spill response kits, and PPE) near HM and HW areas.
- Provide training, to include a hands-on reaction to a mock spill, for personnel who use or work around HM and HW. Practice the spill response plan on a regular basis to improve readiness.
- Know who to contact if assistance is needed for spill response.
- Know the spill reporting process and to whom the incident needs to be reported.
- Know the proper procedures for cleanup and disposal of spill waste.

PREPAREDNESS

In spill situations, take the following steps.

STEP 1: PROTECT YOURSELF AND OTHER PERSONNEL

- Evacuate the area, as necessary, based on the properties and amount of the HM or HW spilled.
- Take personal precautions as detailed on the MSDS for the material spilled.
- Use the proper PPE.
- Extinguish smoking materials and ignition sources.
- Turn off power if there is the possibility of fire.
- Ventilate the area.

STEP 2: STOP THE FLOW SAFELY AND REMOVE THE SOURCE

- Shut off valves, turn drums upright, and take other actions as necessary.
- Do not take unnecessary chances. Stop the flow, if possible, without injury or contamination. Initiate decontamination procedures if contact with HW occurs. This may mean washing hands or succumbing to a complete decon shower.

STEP 3: CONTAIN THE SPILL QUICKLY AND SAFELY

- Use spill kit booms if the spill is small.
- Make berms to keep the spill from spreading farther
- Do not let the spill enter storm or sewer drains or other waterways.
- Divert the flow if necessary.

STEP 4: ABSORB/ACCUMULATE

- Contain the spill by throwing absorbent, floor sweep, or cat litter on it.

STEP 5: CLEAN UP THE SPILL

- Scoop up contaminated material, and put it in a container.

- Mark the container Hazardous Waste, Contaminated Soil, or with another label as defined in the environmental SOP.
- Check with the unit supply sergeant or the directorate of public works environmental office for disposal instructions. If deployed, contact the U.S. Army major command environmental officer or refer to the environmental SOP for guidance.

STEP 6: REPORT THE SPILL IMMEDIATELY

- Sound the alarm, or give a verbal warning.
- Have another person call for assistance while you continue to assess the size and severity of the spill.
- Report spills immediately to the supervisor, the unit environmental officer, installation directorate of public works environmental office, or fire department according to the unit SOP and spill response procedures.

STEP 7: REPLACE SPILL EQUIPMENT

- The spill response team noncommissioned officer in charge will account for tools and supplies immediately after the spill is cleaned up.
- Missing property is identified and appropriate action is initiated (a statement of charges or Financial Liability Investigation for Property Loss: FLIPL) to maintain accountability. Spill kit inventories are completed and replacement supplies are ordered.
- The acronym R-E-A-C-T is used to remember spill response steps (see cover figure):
  - **R**emove the source.
  - **E**nvelop the spill.
  - **A**bsorb/accumulate.
  - **C**ontainerize/clean up the spill.
  - **T**ell your supervisor, or transmit a report.

Note. Always preface the R-E-A-C-T steps with protecting yourself and others from unnecessary harm.