

# **HAZARDOUS MATERIAL / WASTE MANAGEMENT PLAN**

**409<sup>TH</sup> BASE SUPPORT BATTALION  
GRAFENWOEHR / VILSECK**

**FEBRUARY 2002**

PREPARED BY:

Environmental Division  
Dir, Public Works  
409<sup>TH</sup> BSB  
UNIT 28130  
APO AE 09114

APPROVED BY:

---

JAMES P. DRAGO  
LTC, FA  
Commanding

# APPENDICES

- A** Document abbreviations
- B** 409<sup>TH</sup> BSB Grafenwoehr/Vilseck facility points of contact
- C** Identification and labeling of hazardous waste
- D** Environmental Inspection Forms
- E** Hazardous materials classification
- F** Hazardous materials and waste handling
- G** Hazardous materials and waste storage requirements
- H** Hazardous waste storage facilities at 409<sup>th</sup> BSB
- I** Sample Incident Report Form
- J** Spill reporting procedures

## TABLE OF CONTENTS

	PAGE
Table of Contents	2
Appendices	ii
Goal	3
Objective	3
About This Document	3
Authority and Regulatory Requirements	4
Applicability	5
Definitions and Abbreviations	6
Responsibilities	8
409 <sup>th</sup> BSB Hazardous Waste/Materials Management Board	10
Hazardous Materials Inventory and Usage	11
Hazardous Substance Handling and Storage	12
Hazardous Waste Disposal	13
Transportation	14
Emergency Procedures	16
Training Requirements	17
Inspection Requirements	17
Hazardous Waste Minimization (HAZMIN)	17
Waste Analysis Plan	18
References	18

# **HAZARDOUS MATERIALS AND WASTE MANGEMENT PLAN 409<sup>TH</sup> BSB GRAFENWOWEHR / VILSECK**

## **GOAL**

To protect human health and preserve, protect and restore environmental resources from past, present and future sources of contamination from hazardous materials and waste used or generated at 409<sup>th</sup> BSB Grafenwoehr / Vilseck.

## **OBJECTIVE**

To provide a management plan for 409<sup>th</sup> BSB Grafenwoehr / Vilseck that outlines policies, and describes responsibilities, management requirements and procedures for the identification, handling, storage, transportation and disposal of hazardous materials and waste that meet United States Army Europe (USAREUR) and German legal requirements.

## **ABOUT THIS DOCUMENT**

This hazardous waste/materials management plan (HW Plan) follows the outline suggested by USAREUR for hazardous waste management plans. The first section on “Authority and Regulatory Requirements” provides a brief summary of U.S. and German laws and regulations most pertinent to hazardous waste management and are meant to promote an understanding of why certain management practices are required. “Definitions and Abbreviations” clarify words or expressions that may be interpreted in ways inconsistent with regulations and as used in the management plan. The section on “Responsibilities” defines roles between offices at 409<sup>th</sup> BSB, both for effective coordination between offices, and guidance for hazardous materials managers and waste generators who must determine which office will provide the information and assistance they require. The Hazardous Waste/Materials Management Board (HW Board), established under UR 200-1, is outlined as required. The Hazardous Materials Inventory and Usage section describes the variety of hazardous substances used at 409<sup>th</sup> BSB subject to management under this plan. Sections on “Hazardous Waste Storage,” “Hazardous Waste Disposal,” and “Transportation” is written to provide basic information that all hazardous waste managers and handlers should know. More detailed information needed for offices with specific responsibilities is provided in appendices. “Emergency Procedures” is an essential section that requires implementation at all levels of each organization. An incident report form is to be used for reporting spills and other incidents at 409<sup>th</sup> BSB Grafenwoehr / Vilseck involving hazardous substances. “Training Requirements” and “Hazardous Waste Minimization” are directly applicable to proper management by all hazardous materials managers and waste generators. Finally, the sections on “Waste Analysis Plan,” “Record keeping Requirements,” and “Resources” are most relevant to the Community Installation Commander the HW Board for tracking procedures and expanding current programs.

## **AUTHORITY AND REGULATORY REQUIREMENTS**

The environmental goals of USAREUR are to preserve, protect and restore the quality of the environment. The USAREUR program in Germany is governed by:

- NATO Status of Forces Agreement (SOFA)
- Final Governing Standards
- Executive Order 12088
- Applicable United States (US) and German Laws
- USAREUR and Army Regulations
- 409<sup>th</sup> BSB Spill Prevention & Counter Measure Plan

The development and implementation of this Hazardous Waste Management Plan is under the auspices of:

- **SOFA.** Under Article II, “It is the duty of a force and its civilian component and the members thereof as well as their dependents to respect the law of the receiving State and to abstain from any activity inconsistent with the spirit of the present Agreement.....”
- **Final Governing Standards (FGS).** FGS define criteria and standards for compliance with applicable US Laws, Executive Orders, DOD Directives, Component Regulations and Host Nation Laws.
- **Executive Order (EO) 12088.** This Order requires overseas Department of the Army (DA) activities to comply with pollution control standards of general applicability to the host country or jurisdiction.  
USAREUR Regulations used as the primary basis for developing this Management Plan include:
  - **Army Regulation (AR) 200-1** Environmental Protection and Enhancement. This regulation prescribes DA responsibilities, policies and procedures to preserve, protect, and restore the quality of the environment. It incorporates all applicable statutory and regulatory requirements including those for solid and hazardous waste management, oil and hazardous substances spill contingency planning, control and emergency response, environmental restoration, and other environmental programs. Applicable sections include Chapters 5, 6, 8 and 9
  - **Army Regulation AR 420-47** Solid and Hazardous Waste Management. This regulation prescribes responsibilities, standards, and procedures for the efficient and economical collection, recycling and disposal of solid and hazardous waste: a) in an environmentally acceptable manner, and b) consistent with good sanitary engineering principles. The statutory authority for this regulation is derived from the Resource Conservation and Recovery Act (RCRA ).
  - **USAREUR Regulation (UR 200-1)** USAREUR Environmental Quality Program. This regulation establishes USAREUR policy and procedures for protecting environmental quality. The regulation includes the responsibilities and regulatory requirements for environmentally safe management of hazardous waste at USAREUR installations including information on recycling programs.
  - **USAREUR Regulation (UR 55-4)** Joint Transportation of Hazardous Materials prescribes policy and procedures for transporting hazardous material safely in the Federal Republic of Germany and consolidates Host Nation, NATO and US military requirements for transporting hazardous material.
  - **409<sup>th</sup> BSB Spill Prevention, Control, and Countermeasure Plan (SPCC).** The BSB Spill Plan prescribes procedures on the avoidance of spills and the proper clean-up procedures if a spill occurs.

German laws, regulations and ordinances also incorporated into this plan include:

- **Abfallgesetz (AbfG)** Law on the Avoidance and Elimination of Waste. This law requires that disposal of ordinary and hazardous waste is regulated to protect human health and environmental resources. It states that avoidance of waste and recycling are equally important to proper disposal. The law includes the proper disposal of waste oil and requires companies selling oil to accept waste oil for recycling or disposal.

- **Wasserhaushaltsgesetz (WHG) Federal Water Act.** This law establishes policy for water management to serve the public interest and to prevent the contamination or alteration of waters. It is applicable to surface, ground and coastal waters.
- **Altoelverordnung (AltOELV) Ordinance on Waste Oil.** The ordinance defines waste oils appropriate for recycling and provides technical instructions for companies that upgrade waste oil. It establishes maximum concentrations of Polychlorinated Biphenyl (PCBs) in waste oils, prohibits mixing PCB contaminated oils with non-PCB contaminated oils and provides guidance on waste oil acceptance.

## APPLICABILITY

Most military communities use chemicals and other substances that are hazardous if not handled, stored, or used properly. This Management Plan addresses proper storage and handling of chemicals, including petroleum, oils and lubricants (POL), and spill prevention, contingency and response requirements related to these hazardous materials (see inventory under Hazardous Materials Inventory and Usage section). Asbestos and radioactive substances are not included; they are subject to separate management plans.

This plan applies to all personnel and activities assigned to or using the facilities of the Grafenwoehr Training Area and the 409<sup>TH</sup> BSB Military Community at Grafenwoehr and Vilseck, as well as all federal civilian and local national employees. Persons, units or activities not specifically mentioned are not exempt from adhering to the intent and procedures contained in this plan. The plan is required reading for all personnel managing the generation, handling, packaging, transport, and disposal of hazardous materials and waste.

## DEFINITIONS AND ABBREVIATIONS

The following definitions provide the basis for interpreting this management plan and are consistent with regulations listed under “Authority and Regulatory Requirements.” Additional terms will be defined in the text at applicable locations. All abbreviations used in this management plan are provided in **Appendix A**.

**Hazardous Material:** A material, because of its quantity, concentration, or physical, chemical or infectious characteristics, that may (a) cause or significantly contribute to an increase in mortality or in serious, irreversible, or incapacitating reversible illness, or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed, or otherwise managed. Materials subject to the Atomic Energy Act are not considered a hazardous material for the purpose of this document.

**Waste:** A waste is any material that has served its original purpose including materials intended for reuse, recycling, and recovery.

**Solid Waste:** A solid waste includes solid, liquid, semi-solid, or gaseous materials except, (a) domestic sewage treated in public owned treatment works, (b) point source discharges subject to section 402 under the Clean Water Act, (c) irrigation return flows, (d) material subject to Atomic Energy Act, and (e) materials subject to onsite mining techniques but not removed from the ground as part of the extraction process.

**Hazardous Waste (HW):** Hazardous waste is solid waste that is ignitable, corrosive, reactive, or toxic, or is identified as a hazardous waste under applicable German Law, rule or regulation. Compounds that contain hazardous waste as a component part are also considered hazardous waste. A waste may be declared hazardous if the owner chooses to avoid testing the material to determine

its hazardous characteristics. However, detailed descriptions of the chemical components of the waste are still required.

**Special Waste:** Special wastes are substances that are not allowed to be disposed of in the regular municipal landfill under German Law. This includes a much broader class of compounds than US-defined hazardous waste. Oil and grease must be handled as special waste in Germany. The German terms for special waste are Sondermuell or Sonderabfaelle.

**Dangerous Waste:** A German waste classification that corresponds roughly to the US definition of hazardous waste, including only substances that are acutely toxic, hazardous, or explosive. The German terms for dangerous waste are Gefaehrlicher Muell or Gefaehrliche Abfaelle.

**Hazardous Substance:** An element, compound, or mixture that, when discharged in any quantity onto land, or into or upon navigable or coastal waters, presents an imminent and substantial danger to the public health or welfare, or to fish, shellfish, wildlife, shorelines, or beaches. When used in this document, the term includes hazardous materials, hazardous waste, special waste and dangerous waste, all of which are under the jurisdiction of the HW Plan.

**Disposal:** Disposal means the removal of hazardous waste from the accumulation points through an existing DRMO removal contract or alternate approved sources.

**Hazardous Waste Generator (HWG):** The hazardous waste generator is a person, activity, unit, or agency that produces hazardous waste. For reporting purposes in the Army, the Community Commander is considered the generator. For reporting purposes at 409<sup>th</sup> BSB the responsible facility manager or unit commander is considered the generator.

**Hazardous Waste Storage Area:** A place where at least 206 liters (55 gal) of hazardous waste of one waste stream is stored before shipment for disposal. A “conforming hazardous waste storage area” is an area that meets HN criteria for storage of hazardous waste.

**Hazardous Waste Treatment:** Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non hazardous or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

**Facility:** All buildings, structures, public works, equipment, aircraft, vessels, and other vehicles and property under control of, or constructed or manufactured for leasing to, the Army.

**Approved Storage Facility:** An approved storage facility is designed to safely store hazardous substances on a short-term (under 90 days) or long-term basis. The storage facility should have appropriate containers for storage of each class of hazardous materials or waste, protection from the elements, secondary containment for potential spills, sufficient ventilation, equipment to handle small spills, and sufficient space and partitioning to separate incompatible hazardous substances. All storage facilities are subject to inspection by the military command hazardous waste manager to determine if the facility meets requirements for approved storage.

**Hazardous Waste Storage:** The containment of hazardous waste in such a way as not to constitute disposal of such waste. Containment may be either on a temporary basis or for a period of years. There are no permanent HW storage or disposal facilities at the 409<sup>th</sup> BSB. All facilities are for interim holding of hazardous waste and must meet the specifications for an approved storage facility given above. Storage containers holding hazardous waste in these facilities are emptied by contractor on a regular basis and removed from 409<sup>th</sup> BSB for recycling, long-term storage or disposal.

**Spill:** A generic term that encompasses the accidental and the deliberate but unpermitted leaking, pumping, pouring, emitting, emptying, or dumping into or onto the land of hazardous wastes or materials which, when spilled, become hazardous waste. Any spill will be reported.

## **RESPONSIBILITIES**

The following descriptions are restricted to duties pertinent to handling hazardous substances and are not meant to be comprehensive for other duties for which these personnel are responsible. Additional detail may be found in UR 200-1. These descriptions are directly applicable to responsible personnel at 409<sup>th</sup> BSB.

**Installation Commander (IC)** has overall responsibility for hazardous waste management operations. The IC ensures that (1) excess hazardous substance disposal is reduced, (2) materials are stored in a safe and environmentally acceptable manner, and (3) all hazardous waste generators comply with regulatory requirements. He is responsible for all hazardous waste facilities in the command including those of tenants. The IC is responsible to regulatory authorities for ensuring compliance with their regulations. He chairs or appoints a chairperson for the Community Hazardous Waste Management Board (HW Board), and ensures the Directorate of Public Works has sufficient support to carry out functions.

**Directorate of Public Works (DPW)** will act as the IC's representative for managing hazardous materials and hazardous waste disposal. As the Military Command Hazardous Waste Manager (MHWM) the DPW will (1) coordinate the installation-wide hazardous waste inventory, (2) prepare and update the Community Hazardous Waste Management Plan (HW Plan), (3) serve as the EQCC executive secretary and expert representative for the management of HW, (4) validate needs for each installation storage facility, (5) provide technical help and guidance to HWGs and storage facility managers, (6) comply with regulatory requirements, (7) provide proper on-the-job or formal training locally or in the continental United States to personnel who manage, use, or store hazardous substances, (8) ensure that local medical department activity (MEDDAC) or the medical center commander is informed of hazardous substances used or stored on post (user organizations are to maintain a list of personnel in contact with hazardous substances for inclusion in occupational health survey programs), (9) ensure that on-post fire departments are told what and where hazardous substances are stored, (10) provide appropriate US and German regulations and other reference material to support units that handle, use, store, and dispose of hazardous substances.

**Directorate of Logistics (DOL)** will: (1) serve as a member of the EQCC and HWMB, (2) advise HWGs on how to handle, package, label, and ship hazardous waste according to US Department of Transportation (DOT) and German transportation regulations, (3) ensure environmentally safe, on-post transportation of hazardous waste, (4) ensure hazardous waste is appropriately packaged, labeled, placarded and loaded on vehicles for transportation on and off post and (5) be responsible to the IC for HWG transportation activities.

**Community Hazardous Waste Manager (HWM)** will (1) serve as a member of the HW Board, (2) develop and update appropriate management plans, (3) assess the successful implementation of plans, (4) maintain data files on current facilities, installation deficiencies, and violations, and (5) evaluate the long term generation, storage and release of HM and HW. The HWM provides recommendations for reducing the production (e.g. proper ordering and use of hazardous materials), improving storage, and preventing release of hazardous substances.

**Defense Reutilization and Marketing Office (DRMO)** is responsible for the sale, donation, reutilization and disposal of Army Hazardous Waste. The DRMO provides contractual support to USAREUR installations to ensure pick-up and disposal of HW complies with applicable HW disposal standards.

**Community Safety Officer (SO)** will (1) serve as a member of the EQCC and HW Board, (2) check the storage, packaging and transportation of hazardous waste to comply with current hazardous substances safety standards, (3) ensure that proper safety materials and measures are available for routine treatment and control of hazardous substances and emergency clean-up when necessary, (4) ensure that hazardous materials are used according to laws and regulations and instructions on labels, and (5) ensure that safety personnel are trained in the proper handling of hazardous substances and include this information in safety inspections.

**Community Industrial Hygienist** will (1) serve as a member of the EQCC and HW Board, (2) advise HWGs on all health and hygiene requirements, (3) inspect installation storage facilities with DPW, (4) ensure disposal of infectious waste according to AR 40-5 and AR 420-47, and (5) provide technical assistance for special hazardous waste problems, on request, through local resources or the U.S. Army Center for Health Promotion and Preventive Medicine, Europe (CHPPM-EUR), Landstuhl.

**Unit Commanders** ensure unit compliance with the HW Plan. Unit commanders are to (1) minimize waste generation, (2) handle hazardous materials and store hazardous waste properly, (3) prevent accidental or intentional releases, (4) contain and remove hazardous wastes released into the environment and deposit the waste in approved hazardous waste storage facilities. Releases of hazardous substances by the unit must be reported within one hour of occurrence to the Fire Department and prompt corrective action taken. Information on the time, location, amount and type of hazardous waste is provided to EAC. The commanders will also provide follow-up information to the Environmental Office on the cause for hazardous waste release. The unit commander will appoint a Unit Environmental Coordinator who is accountable for, and has the authority to ensure compliance.

**Hazardous Waste Generators (HWG, e.g. Facility Manager, Unit Commander or Unit Environmental Coordinator)** will (1) track hazardous substances from acquisition through disposal, (2) manage all materials for reuse by the HWG, or other community users and disposal by the Defense Reutilization and Marketing Office (DRMO), (3) recycle materials when possible, (4) package, store and transport wastes to proper on-post sites according to the HW Plan, (5) arrange for off-post transportation for hazardous waste according to the HW Plan if the servicing DRMO will not accept accountability, (6) ensure proper handling of hazardous substances so as to prevent release into the environment.

In addition to the above requirements, Facility Managers are to set up a contingency plan with the HW Board to provide temporary storage or alternative disposal of all hazardous substances in the event that regular disposal techniques cannot be used, (8) provide the HWM with biannual reports to update the HW inventory list, (9) operate HW storage facilities, and (10) properly dispose of all hazardous substances that cannot be reused, sold or disposed of by DRMO as listed in UR 200-1. The manager of each facility generating hazardous waste will serve as the environmental coordinator point of contact (POC), or will designate a POC who is accountable for, and has the authority to ensure, compliance with the HW Plan, and will serve as a member of the HW Board if assigned by the IC.

**Fire Protection and Prevention** will respond on a 24-hour basis to emergencies involving the release of hazardous substances or fires involving hazardous substances to prevent further danger, and damage to, or contamination of humans or the environment. The Fire Department will (1) provide training to fire department personnel on how to safely handle hazardous substances, (2) maintain appropriate equipment to protect personnel from exposure to hazardous substances, (3) maintain equipment and materials necessary to contain and remove contaminated materials and hazardous substances released into the environment, and (4) properly store hazardous waste in hazardous waste storage facilities. The Fire Department POC will serve on the EQCC HW Board.

## **409<sup>TH</sup> BSB GRAFENWOEHR/VILSECK HAZARDOUS WASTE/MATERIALS MANAGEMENT BOARD**

The functions of the EQCC HW Board are to (1) resolve and coordinate on-post recycling and disposal program issues and plans, (2) promote on-post reuse and recycling to minimize hazardous waste that requires disposal, (3) help the HWM conduct community hazardous substance inventories and implement the HW Plan, (4) help resolve community hazardous waste conflicts in responsibility, (5) coordinate alternate disposal or storage plans to provide relief in the event of storage facility malfunctions, contractor shutdown, or other reasons preventing access, and (6) ensure budget requirements are identified and programmed to support implementation of the hazardous waste management program including equipment acquisition, personnel training, and adequate storage and disposal.

The IC, or designee, will chair the EQCC HW Board. The EQCC HW Board should consist of a representative of each activity in the community that generates hazardous waste. Membership will include:

Directorate of Public Works  
Utilities Division  
Fire Prevention & Protection  
Environmental Division  
Installation Material Maintenance Activity (IMMA)  
Safety Office  
Directorate of Logistics  
AAFES  
Health Clinic POC  
Dental Clinic POC  
Industrial Hygiene Office POC  
RSSA Vilseck POC  
Permanent and Tenant Unit POCs at Grafenwoehr and Vilseck

The office designated to serve as the hazardous waste managing office is:

Environmental Division  
Directorate of Public Works  
409<sup>TH</sup> BSB Grafenwoehr  
DSN 475-7209/7048

and

Environmental Office  
Directorate of Public Works  
409<sup>TH</sup> BSB Vilseck  
DSN 476-2944

The HW Board will meet semi-annually, as part of the EQCC to identify deficiencies, address problems and budget issues and ensure the implementation of the 409<sup>TH</sup> BSB HW Plan.

### **HAZARDOUS MATERIALS/WASTE INVENTORY AND USAGE**

Under AR 420-47 and UR 200-1, USAREUR training facilities must conduct a one time comprehensive survey, updated annually, of hazardous materials and waste storage and disposal. Inventories should also be updated when changes occur in operations related to hazardous waste handling and disposal. An initial survey was conducted some years ago for the USAREUR Seventh

Army Training Command, by the Joint Venture Engineering firm Baker/TSA, Inc.-H.P. Gauff Ingenieure GmbH & Co. (BAKER/GAUFF). This survey included Grafenwoehr and Vilseck Communities.

The survey identified over 100 individual hazardous materials that are used or stored at 7<sup>th</sup> ATC communities. These materials can be grouped into the following categories:

- \* Engine Oils
- \* Brake Fluids
- \* Greases
- \* Solvents
- \* Antifreeze
- \* Decontaminating Agents
- \* Fuels
- \* Paint Thinners/Removers
- \* Cleaners
- \* Miscellaneous Chemicals
- \* Lubricating/Penetrating Oils
- \* Hydraulic Fluids
- \* Alcohols
- \* Acids/Caustics
- \* Insecticides/Pesticides
- \* Compressed Gases
- \* Paints/Varnishes
- \* Sealers/Adhesives
- \* Film Processing Chemicals
- \* Miscellaneous Materials

The category “Miscellaneous Chemicals” includes acetone, sodium hypochlorite solutions, calcium hypochlorite solution and ammonium hydroxide. “Miscellaneous Materials” includes starting fluid, wood preservative and corrosion inhibitor. Each of the other categories contains numerous individual materials.

Items excluded from this survey include: (1) ammunition and explosives, (2) nuclear and radioactive materials, (3) asbestos, (4) PCBs and (5) infectious waste.

A list of current POCs for facilities handling hazardous substances within 409<sup>th</sup> BSB Grafenwoehr / Vilseck is provided in **Appendix B**. Updated storage facility inventories are to be completed by community facilities and included in revisions to the HW Plan.

## **HAZARDOUS SUBSTANCE HANDLING AND STORAGE**

Improper storage of hazardous substances may result in serious injuries, property damage, and environmental risk. There are three main components to hazardous substance storage: (1) storage in appropriately constructed and labeled containers, (2) storage in appropriate facilities, and (3) separation of incompatible chemicals during storage.

The Department of Defense (DOD) consolidated guidance for hazardous materials/hazardous waste disposal for conforming storage is a facility or location that conforms to FGS and regulations of EPA. The following guidelines are based on EPA standards and FGS, which are important for all handlers of HW:

1. Hazardous substances are stored in original or comparable containers constructed of non-reactive material of sufficient structural integrity to assure long term (over six months) containment. The containers must conform to U.S. Department of Transportation (DOT) and German regulations.
2. All containers are clearly marked to include contents, warning signs, and date of expiration or date when accumulation of waste storage began. Warning signs should be in English and German. See **Appendix C** for labeling guidance and hazardous substance identification.
3. Monthly inspections of equipment and storage areas are conducted by the manager of each generating, storage and disposal facility to ensure that hazardous substances remain properly contained and organized to prevent releases that will be hazardous to human health or the environment. The community HWM inspects all hazardous waste generating and storage

facilities quarterly to ensure compliance with applicable laws and regulations. Check-off inspection sheets with signature blocks are used by HWG and Environmental Office to ensure quality assessments and the maintenance of adequate records (see **Appendix D**).

4. Security is sufficient to prevent unauthorized entry, physical contact or disturbance of hazardous substances on a 24-hour basis. Security may include 24-hour surveillance or television monitoring, barriers, entry control and posted danger signs.
5. Storage facility personnel are provided with, or have access to, a communication or alarm system, telephone or two-way radio during the handling of hazardous substances. Fire control equipment appropriate for the type of hazardous substances being stored, and an adequate water supply is available and easily accessible in the facility at all times.
6. Aisle space in the storage areas remains sufficient (minimum one meter) at all times to allow easy movement of personnel and incident response equipment through the area.
7. Incompatible hazardous substances are not stored in the same facility, incompatible hazardous substances are stored with sufficient structural and space separation to prevent contact in case of release. **Appendix E** provides a guide to the appropriate classification and compatibility of chemicals.
8. Personnel handling hazardous property are provided training and appropriate protective equipment in accord with their job description to protect them from contact with hazardous substances and prevent releases into the environment. The product MSDS provides instructions for proper handling of hazardous substances and proper protective clothing required. **Appendix F** provides additional guidelines on the handling of HM/HW.
9. Appropriate storage facilities are provided for classes of hazardous substances. General provisions include: (1) secure floors, (2) curbs and other secondary containment structures to prevent the release of possible spills, (3) protection from weather, (4) construction of noncombustible or fire retardant materials, and (5) safe dry wells are available for drainage when drains are used to collect spills. **Appendix G** provides additional storage and compatibility guidelines.

**Appendix H** provides a listing of storage facilities for activities at Grafenwoehr and Vilseck. Storage facilities are undergoing re-evaluation to update this list.

## **HAZARDOUS WASTE DISPOSAL**

The 409<sup>th</sup> BSB DPW Environmental Division contracted Hazardous Management Services at Grafenwoehr and Vilseck. We have 15 Management Points and 4 pick-up points at Grafenwoehr. At Vilseck we also have 15 Management Points and 11 pick-up points. Under Management Services the contractor is responsible for the proper disposal of all hazardous waste through an existing DRMO contract. He is responsible for proper segregation of hazardous waste and timely pick-ups as well as keeping the management points clean. Waste generators, however, are directed to place the hazardous waste in the appropriate containers provided and labeled by the contractor. Pick-up points are small accumulation points where the waste generator will have to call the contractor's on site technician if a pick-up is required. Only unserviceable hazardous substances will be classified as disposable hazardous waste.

In addition to the above mentioned management points and pick-up points, central collection / segregation centers have been established for the disposal of any excess amounts of hazardous waste.

The Grafenwoehr Sanitary Landfill is open from 08:00 hrs to 15:30, Monday, Tuesday, Thursday and Friday, on Wednesday the opening hours are from 08:00 to 12:00

Vilseck, Bldg. 124. Opening hours every Monday from 09:00 to 12:00. In case a holiday falls on Monday, hazardous waste will be accepted on Wednesday from 09:00 to 12:00.

## **TRANSPORTATION**

Transportation of hazardous substances are planned and executed to (1) satisfy the needs of shippers and handlers, and (2) meet US and German safety labeling requirements. Transportation is one of the most important areas of concern associated with handling hazardous substances because the packaging and method of transporting hazardous substances will determine the likelihood that an accident or spill will occur. Proper and rapid identification of a spilled substance will determine how effectively and safely the situation can be controlled.

There are specific German Regulations and DOT regulations governing the transportation of hazardous substances over public highways and other modes of transportation. These regulations specify how hazardous substances should be packaged, labeled, marked, placarded and loaded to help prevent transportation related accidents and spills, and make them less dangerous when spills do occur. Hazardous substances must be transported in UN and ADR approved containers. USAREUR Regulation 55-4 provides instructions for transportation of hazardous materials and includes information on necessary transport conditions; compatibility groups for shipping; accident information sheets for drivers, police and firefighters; motor vehicle inspections; special instructions for motor vehicle drivers, driver training and licensing requirements; security and limited loading requirements.

**Packaging.** DOT specification containers are required to transport hazardous substances on or off post. Actual specifications for approved DOT containers are complex and must be followed by manufacturers. When German specifications are more stringent, they will be used.

The generator is responsible for properly packaging hazardous wastes. The containers must be UN and ADR approved, and be able to withstand normal handling and retain integrity for a minimum of six months. In general, packaging for hazardous substances must meet the following requirements:

1. Items must be of such a strength, construction, and type as not to break open or become defective during transportation.
2. Items must be constructed and closed in a manner to prevent spillage of hazardous substances.
3. Re-packaging materials including fastening must not be affected by the contents, or form a dangerous combination with them.

**Labeling.** There are several marking and labeling systems in use that allow handlers to identify a hazardous substance or its general class including the DOT marking requirements, the United Nations Classification System, FGS Labeling requirements and the National Fire Protection Association No. 704 system of hazard identification. In Germany the FGS labeling requirement applies. Contractors and military units transporting hazardous wastes from Grafenwoehr and Vilseck to disposal sites are responsible for meeting all German labeling and transportation requirements. At Grafenwoehr and Vilseck contractor will label containers.

Hazardous waste may be a combination of several hazardous substances. If the hazardous waste is a mixture that has been tested for its hazardous components, the chemicals contributing to the hazard are to be provided on the label. If the hazardous waste mixture has not been tested, components that contribute to actual or presumed hazardous characteristics of the mixture are to be listed on the label

but the composition or proportions of individual components need not be listed. If the composition of a hazardous mixture is a trade secret, the specific chemical names need not be listed but a full disclosure of the hazard is required including all protective and precautionary measures to be used when handling the material. Labels on hazardous mixtures must reflect the multiple hazards associated with these mixtures.

All hazardous waste containers must be clearly marked with current contents. The markings must be waterproof and firmly attached so they cannot be removed. Previous content labels, when different, should be obliterated. Proper marking of containers is essential.

**Manifesting Requirements.** The hazardous waste manifest is the primary tracking tool from the generator to the disposal site. All hazardous wastes must be accounted for on a manifest when transported off post. Manifests (i.e. Begleitschein) must include a shipping description, detailed descriptions of the type and quantity of material, and the destination including the name, address and telephone number of the shipper and disposal facility receiving the hazardous waste. Signature blocks for the generator, transporter, and receiver of transported hazardous wastes are to be signed to verify shipping and receipt of the waste. The Environmental Offices Grafenwoehr and Vilseck maintain records.

**Vehicle Inspections.** DOL is responsible for ensuring that tactical and other vehicles transporting hazardous substances on post and in the training area are properly maintained, checked and loaded to meet the requirements for transporting hazardous substances. Contractor vehicles used to transport hazardous waste from Grafenwoehr and Vilseck are also subject to inspection by DOL.

**Driver Training.** Hazardous waste contractors transporting hazardous waste from Grafenwoehr and Vilseck must provide verification that all drivers are appropriately trained and certified. Units stationed or training at Grafenwoehr and Vilseck are to provide verification that military personnel driving vehicles containing hazardous substances (e.g. refueling trucks) are certified hazardous materials/waste drivers. Drivers of DPW vehicles handling hazardous substances must also be certified.

## **EMERGENCY PROCEDURES**

When accidents or spills involving hazardous substances occur, the responsible unit or facility will report the incident immediately to the Fire Department as specified in the Spill Prevention, Control and Countermeasure Plan (SPCC) and Installation Spill Contingency Plan (ISCO) for the 409<sup>th</sup> BSB. The Fire Department will take immediate action to contain and retrieve spilled hazardous wastes. The Fire Department also notifies the Environmental Office Grafenwoehr or Vilseck (depending on the location of the spill) during normal working hours of all incidents.

Clean up is the obligation of the responsible unit or facility. Fire Department and Environmental personnel will provide guidance as appropriate to ensure clean-up operation is completed in an environmentally safe manner. If clean up is not possible by those responsible, DPW will provide assistance.

The Fire Department and Environmental Office are required to record the incident on the Incident Report Form to ensure that all relevant information is recorded and communicated completely and accurately between the agencies. All facilities and units on post, and the training units, should use the same form for their records and for communicating the incident. Environmental Office performs follow-up investigations to determine the circumstances of the incident. Data on incident type and cause will be used to develop revised management plans to prevent future incidents (see **Appendix I**). An incident reporting flow diagram with office POCs and telephone numbers is provided in **Appendix J**. 409<sup>th</sup> BSB Grafenwoehr / Vilseck has an "Installation Spill Contingency Plan and Spill Prevention Control and Countermeasure Plan" available at the Environmental Office.

## TRAINING REQUIREMENTS

All personnel at ASG, BSB and Unit level who are involved in handling, storage and disposal of POL, hazardous material and hazardous waste will attend the annual USAREUR Hazardous Material/Waste Seminars. In addition to the USAREUR seminars a qualified Environmental Staff member provides a quarterly "Environmental Orientation Training". Attendance of these classes is mandatory for all unit environmental coordinators. A training certificate will be issued to all participants upon passing a test. Further more on-site training will be conducted during inspections, if necessary. The Hazard Communication Training is also required for personnel handling, store and dispose of hazardous substances. This training course is offered by 7<sup>th</sup> ATC Safety Office.

## INSPECTION REQUIREMENTS

The facility managers using an "Environmental Inspections" questionnaire (**see Appendix D**) conduct inspections on a monthly basis. Facility managers responsible for inspections are listed in **Appendix B**. These reports are maintained on file at the facility and a copy forwarded to the HWM. Deficiencies are reported to the HWM with implementation plans to correct problems. The HWM inspects storage facilities quarterly to determine whether corrective actions are being taken, and to evaluate problems that will require construction and budget recommendations. The 409<sup>th</sup> BSB Safety Office performs annual OSHA inspections at facilities handling hazardous materials.

Training units generate a significant portion of hazardous waste at the 409<sup>th</sup> BSB. Monthly inspections of these generators are conducted by Environmental Staff to ensure that hazardous waste is placed in appropriate containers. Additional inspections are handled through Troop Billeting when a unit clears, to ensure that all hazardous waste generated has been transported to the sanitary landfill and storage facilities are clean.

## HAZARDOUS WASTE MINIMIZATION (HAZMIN)

Under DOD policy, facilities generating hazardous waste are required to limit the generation of waste and to reuse, reclaim or recycle resources where possible.

409<sup>th</sup> BSB has implemented a hazardous waste recycling program where wastes like used solvents, used oil, empty oil cans, empty paint cans and grease from deep fat fryers are recycled.

In order to develop a plan to minimize hazardous waste, careful inventories of hazardous materials ordered and on hand and their expiration dates are needed. Facility managers are required to maintain a current inventory and to consult the inventory prior to ordering additional hazardous materials. Effective record keeping assists the HWM in identifying where unnecessary waste is generated.

As part of the 409<sup>th</sup> BSB waste minimization plan, a Hazardous Material Reuse Center has been established at Vilseck, Bldg. # 113. Tenant Units and Training Units as well as facility managers **will** offer useable hazardous material to the Reuse Center prior to disposal under the DRMO hazardous waste disposal contract. The waste disposal contractor **will not** accept useable hazardous substances for disposal, unless the unit representative or facility manager can present a statement of rejection from the Reuse Center.

## WASTE ANALYSIS PLAN

Under FGS and UR 200-1, proper identification of wastes is required. When the composition of a hazardous waste is not known, waste analyses are the responsibility of the waste generator. When waste characterization is not completed and documented properly, noncompliance is repeated and compounded during handling.

Waste analysis is performed by the Environmental Office through the assistance of the US Army Laboratory in Mannheim. Waste analysis may also be requested under the current DRMO Waste Disposal Contract.

## **REFERENCES**

Final Governing Standards (FGS)

AR 200-1, Environmental Protection and Enhancement

UR 200-1, Environmental Quality Program

AR 420-47, Solid and Hazardous Waste Management

UR 55-4, Joint Transportation of Hazardous Materials

UR 710-5, Turn-in Procedures

Department of Defense Federal Hazard Communication Training Program Trainer's Guide, Office of the Assistant Secretary of Defense (Force Management and Personnel), 6050.5-G-1

Technical Note No. 420-90-01 Facilities Engineering: Hazardous Materials (HAZMAT) Hazardous Materials for First Responders.

US Army Logistics Management Center, Workbook for Defense Hazardous Materials Handling Course; ALM 44-0465-WB.

Regulations concerning the Movement of Dangerous Goods by Road (GGVS) for Traffic within Germany

European Regulations concerning the Movement of Dangerous Goods by Road

The Status of NATO Forces Agreement in the Federal Republic of Germany Article II

**Abbreviations:**

AltOELV:	Altoelverordnung: German Ordinance on Waste Oil
AbfG:	Abfallgesetz: Law on the Avoidance and Elimination of Waste
AR:	Army Regulation
CFR:	US Code of Federal Regulations
DA:	Department of the Army
DIN:	German Regulations
DLA:	Defense Logistics Agency
DRMO:	Defense Reutilization and Marketing Office
DOL:	Directorate of Logistics
DOT:	US Department of Transportation
DPW:	Directorate of Public Works
DOD:	US Department of Defense
EO:	Executive Order
EPA:	US Environmental Protection Agency
FGS:	Final Governing Standards
HAZCOM:	Hazardous Communication Training Program
HAZMIN:	Hazardous Waste Minimization Program
HN:	Host Nation
HW:	Hazardous Waste
HWG:	Hazardous Waste Generator
HW Board:	Hazardous Waste/Material Management Board
HW Plan:	Hazardous Waste/Material Management Plan
HWM:	Hazardous Waste Manager
IC:	Installation Commander
JMMA:	Joint Material Maintenance Activity
MP:	Management Practice

POC: Point of Contact

POL: Petroleum, Oil and Lubricants

PCB: Polychlorinated Biphenols

RCRA: US Resource Conservation and Recovery Act

SO: Safety Officer

SOP: Standard Operating Procedure

NATOSOFA: North Atlantic Treaty Organization Status of Forces Agreement

US: United States

USAREUR: United States Army Europe

UR: USAREUR Regulation

WHG: Wasserhaushaltsgesetz

**APPENDIX B**

**409<sup>th</sup> BSB GRAFENWOEHR  
UNIT & ACTIVITY POINTS OF CONTACT 2002**

<b>UNIT/ACTIVITY</b>	<b>POC</b>	<b>PHONE #</b>	<b>BLDG #</b>
DPW Tech. Dir	Mr. Bogdanow	475-1560	329
DPW Env Div	Mr. Rieck/Mr. Salavs	475-7209	329
DPW Util Div	Mr. Ohla	475-7144	329
DPW B&G Div	Mr. Oestereicher	475-7231	329
DPW Heavy Equipm.	Mr. Schopf	475-6236	329
DPW Self Help	Mr. Mueller Mr. Speth	475-6300 475-6331	394
DPW Supply Branch	Mr. Schmidt Mr. Stopfer	475-7119 475-6647	319 319
Fire Department	Mr. Keck Mr. Schneider	475-8303 475-8303	521 521
AAFES	Mr. Charette Mr. Merkl	99-6690	537 443
Car Care Center	Mr. Engelhardt Mr. Stich	475-6239 475-6239	528 528
TMP Grafenwoehr	Mr. Stuetz Mr. Odoerfer	475-6223 475-6223	322 322
JMMA Grafenwoehr	Mr. Fichtl	475-6120	301
JMMA DPW	Mr. Speckner	475-7251	319
POL Class III	Mr. Gomez Mr. Carr	475-7101 475-7101	332 A
DRMO	Mr. Stradford Mr. Sporer	475-6384 475-7146	455
7 <sup>th</sup> ATC Flight Detach	SGT Savoie SPC Bunton	475-6117 475-7177	4629
Range Warehouse	Mr. Walczok Mr. Arnold	475-6342 475-6342	645
535 <sup>th</sup> Engr Co	PV2 Frederick PFC Sherman	475-7212 475-7212	602
515 <sup>th</sup> MP Co	SGT Dunham Sgt Cunhoe	475-6286 475-6286	630
3/58 <sup>th</sup> Aviation	Sgt Armajo SGT Taylor	475-7233 475-7233	629
2 <sup>nd</sup> EOD	SGT Mc Inally Sgt Cornelison	475-6238 475-6238	3001
71 <sup>st</sup> Med Detachm.	SPC Claudy PFC Gobel	475-6350 475-6350	535
255 <sup>th</sup> Med Detachm.	CPT Carder CPT Sherbert	475-7491 475-7491	535
11 <sup>th</sup> Transp. Co	Sgt Sealey SPC Mc Neal	475- 6750	4029
Dental Clinic	Sgt Minor	475-8340	131

<b>UNIT/ACTIVITY</b>	<b>POC</b>	<b>PHONE #</b>	<b>BLDG #</b>
Health Clinic	Sgt Kumi SPC Edmunds	475-6203 475-6203	475
DOL, TISA	Mr. Albersdoerfer	475-6155	244
HHC 100 <sup>th</sup> ASG	Sgt Livingston Sgt Teacy	475-6340 475-6211	101
Range Operations	Mr. Wisgickl Ms. Butscher	475-7939 475-7939	3015
Sanitary Landfill	Mr. Schroeder Mr. Englhardt	475-6459 475-6459	
OMA (Nat. Guards)	SGT Johnson Mr. Thaller	475-7678 475-7117	1024
OMA Tank Park 1	Mr. Haimerl Mr. Schatz	475-7149 475-7149	1030

**POINTS OF CONTACT**

UNIT/ACTIVITY	POC	PHONE	BLDG. #	COMMENTS
DPW 409 <sup>th</sup> BSB	MAJ Kunkle	476-1560	140	DPW
Technical Director	Mr. Hays	476-1560	140	Technical Director Vilseck
Environmental Office	Mrs. Prem, Mr. Kirsch, Mr. Härtl	476-2944/ 476-3509	234	Env Engineer Env Engineer Env Engineer
NCOIC	N.N	476-2204	140	
Utilities Division	Mr. Alex	476-2670	140	C/Util Div
Building & Grounds Div	Mr. Rauker	476-2405	144	C/B&G Div
DPW Supply	N.N	476-2515	115	Supply and Storage
Self Help	N.N	476-2577	104	
Fire Department	Mr. Rodler	476-2883	201	C/Fire Department
RSSA Reuse Center	Mr. Brown Ms. Campbell	476-2898 476-2898	113 121	Accountable Officer HazMat Manager
MAV	Mr. Thieme Mr. Scherm	476-2754 476-2893	308	Env Coordinator Alt. Env Coordinator
Logistics Division	Mr. Rittner Mr. Mueller	476-2872 476-2564	351 622	Env Coordinator Alt Env Coordinator
ASP #1	SSG Marx	476-3007	509	Env Coordinator
HHC 3rd BDE	SGT Dallman CPL Henderson	476-2347	721	Env Coordinator Alt Env Coordinator
2/2 IN	SGT Kennedy PFC Barngrover	476-2310	650	Env Coordinator Alt Env Coordinator
201 <sup>st</sup> SB	CPT Mabine SFC Thompson	476-2825 476-2120	726	Env Coordinator Alt Env Coordinator
1/63 AR	1LT Ohman SSG Shelton	476-2677	670	Env Coordinator Alt Env Coordinator
2/63 AR	SSG Hardy SGT Price	476-2933	660	Env Coordinator Alt Env Coordinator
561 <sup>st</sup> Med Com	SGT White	476-2514	353	Env Coordinator
529 <sup>th</sup> Ord	LT Ryg SSG Moats	476-3103 476-2552	630	Env Coordinator Alt Env Coordinator
94 <sup>th</sup> Eng	CPT Lehman SFC Ross	476-2212 476-2929	640	Env Coordinator Alt Env Coordinator
41 <sup>st</sup> Trans	CW2 Hagan SSG Simmons	476-2188 476-2847	630	Env Coordinator Alt Env Coordinator
317 <sup>th</sup> Maint	SPC Fitch SPC Tagomata	476-2440	640	Env Coordinator Alt Env Coordinator

**POINTS OF CONTACT (Ctd)**

UNIT/ACTIVITY	POC	PHONE	BLDG. #	COMMENTS
TSC	Mr. Schertl Mr. Stein	476-2596	247	Env Coordinator Alt Env Coordinator
Health Clinic	SPC Gapuzan SPC Rodriguez	476-2356 476-2005	250	Env Coordinator Alt Env Coordinator
Dental Clinic	SFC Hunter SGT McCarey	476-2787	250	Env Coordinator Alt Env Coordinator
Vet Clinic	SGT Streif	476-2381	222	Env POC
Auto Craft Shop	Mr. Winter Mr. Herold	476-2521	711	Env Coordinator Alt Env Coordinator
AAFES Auto Pride	Mr. Drobig Mr. Kreuzer	09662-83- 9741	718	Env Coordinator Env POC
AAFES PX	Mr. Ohlberg	476-2700	2203	Env Coordinator
Commissary	Mr. Wright Mr. Britton	476-2923 476-2924	2204	Env Coordinator Alt Env Coordinator
High School	Mr. Johnson Mr. Gehring	476-2255 476-2864	1801	Env Coordinator Alt Env Coordinator
Detail Plus	Mr. Hammond Mr. Whyno	09662-83- 6026	717	Env Coordinator
CATC/CTC	Mr. Dickman Mr. Williams	476-2553	349	Env Coordinator Alt Env Coordinator
JMMA, CST Vilseck	Mr. Kraus Mr. Hammer	476-2930	144	Env Coordinator Alt Env Coordinator
LOG Div Vilseck	Mr. Rittner Mr. Mueller	476-2872 476-2564	342 622	Env Coordinator Alt Env Coordinator

IDENTIFICATION AND LABELING

**Please note! At the 409<sup>th</sup> BSB Vilseck and Grafenwoehr the Hazardous Waste Disposal Contractor will label and transport your hazardous waste to the disposal site. All instructions in this Appendix are for your information, because the generator is always responsible for the proper labeling, transportation and disposal.**

1. Properly identify and classify hazardous material packages by examining labels and other markings. Use Hazardous Material information System (HMIS), Chemical Hazardous Response Information System (CHRIS), and the Department of Transportation (DOT) Hazardous Material Table to identify and classify hazardous materials and to determine labeling requirements. Properly label hazardous materials packages in accordance with both DOT and the National Fire Protection Association (NFPA) systems.
2. Almost before you can take any other action, the first thing you must be able to do with a hazardous material is identify it. You must know what it is you have so you can determine health and environmental effects and handling, storage and disposal procedures. Generally, this is accomplished during initial receipt of the material. The materials handler, however, must also be able to quickly identify classes of materials for immediate use in either normal handling or emergency situations. Much of the needed information can be obtained from package labels and markings. More detailed information can be found in various reference materials normally available at your organization.
3. Hazardous Material Identification.
  - a. Package Information. Various information sources are located on the package itself. These bits of information can provide considerable information on the hazards and handling procedures associated with the material and can also provide a starting point for further research using available reference material.
    - (1) National Stock Number (NSN). Property can be identified by NSN, Local Stock Numbers (LSN), or Federal Supply Class (FSC). With this information, you can use the Department of Defense (DOD) HMIS to gain additional information on the material.
    - (2) Noun Nomenclature. The name itself gives you some idea of the characteristics of the material you are handling. In addition, the name can be used to look up additional information in various references available at your organization. If the noun nomenclature cannot be found in these references, you should try the following:
      - (a) Contact your supply channels or the user for any additional information they may be able to provide.
      - (b) Examine the manufacturer's label.
      - (c) Contact the environmental coordinator for assistance
      - (d) Check Military Specifications (MIL-SPEC)
      - (e) Check the Federal Item Logistics Data Record (FILDR).
      - (f) Check with the item manager for assistance.
      - (g) Have a chemical analysis made

(3) Labels and Markings. There are several marking and labeling systems in use today that will allow handlers to easily identify a hazardous material or at least its general class. Packages handled at the installation may or may not have these labels.

(a) DOT System. The DOT system is the most widely used labeling system and applies to hazardous materials being transported by various means of conveyance. Hazardous material being transported to or from the installation over public roads must comply with DOD requirements, with certain exceptions.

(1) Dot Marking Requirements.

- a. The shipper must mark packages, which contain hazardous material with the proper shipping name as it appears in the DOT Hazardous Material Table.
- b. The package will have the other regulated materials (ORM) designation if it contains materials designated as "Other Regulated Materials."
- c. Packages, which contain liquid hazardous material, must be marked with "This End Up" designation.
- d. Radioactive substances must be marked as such in addition to the above requirements.
- e. The identification number (par. 3A of the DOT Hazardous Materials Table) is required to be displayed on packages along with the proper shipping name.

(2) Labeling Requirements.

- a. Packages must be labeled with the proper DOT label as shown in the DOT Hazardous Materials Table.
- b. Exemptions: Military ammunition handled by DOD personnel; hazardous material handled by DOD personnel and escorted by DOD personnel in a separate vehicle; and others not specifically applicable to DOD.
- c. Multiple Hazard Labeling: Some substances have more than one hazard characteristic. The DOD regulations require that some of these be labeled with more than one label to reflect the multiple hazards.
- d. Mixed and consolidated packaging: When hazardous materials which have different hazard classes are packed in the same container or overpack, the outside packaging must be labeled as required for each class of material in the container.

(b) United Nations (UN) Classification System. DOT labels may have the UN hazard class number stamped in a lower corner of the rectangle. These numbers are required by some foreign governments. (Another four-digit UN number, found for each chemical in the DOT Hazardous Materials Table, is used for vehicle placards and will be discussed the transportation section.) The UN hazard class numbers and their corresponding DOT classification are:

<b>DOT Classification</b>	<b>U.N. Class</b>
Class A Explosives	1
Class B Explosives	1
Class C Explosives	1
Blasting Agents	1
Flammable Compressed Gas	2
Nonflammable Compressed Gas	2
Flammable Liquid	3
Flammable Solid	4
Oxidizing Material	5
Poisonous Gas, Class A	2 or 6
Poisonous Liquid, Class A	6
Poisonous Liquid or Solid, Class B	6
Irritating Material	6
Etiologic Agent	6
Radioactive Materials	7
Corrosive Material	8

(c) Resources Conservation and Recovery Act (RCRA) Labeling Requirements. Before a hazardous waste (HW) generator offers a hazardous waste for transportation offsite he must label each package in accordance with DOT regulations on hazardous materials. RCRA also requires marking of hazardous waste according to DOT regulation for hazardous materials.

(d) Toxic Substances Control Act (TSCA) Labeling Requirements. Polychlorinated biphenyls (PCB) are regulated by TSCA.

1. The labeling requirements are according to the transportation regulations (ORM-E), no specific label required).

2. TSCA requires PCBs to be marked. The following items must be marked with approved labels as containing PCBs in concentrations of 50 or more ppm (in the case of PCB transformers 500 or more ppm): PCB containers, PCB transformers (containing 500 or more ppm), large capacitors (containing 3 or more pounds of PCBs), equipment containing a PCB transformer or a large, high voltage capacitor (operating at 2,000 or more volts alternating current) containing PCBs; electric motors using PCB coolants, hydraulic machinery using PCB hydraulic fluid, heat transfer systems (other than transformers), PCB overpacks containing articles or equipment listed above.

3. Labels consist of black letter on yellow or white background. US Environmental Protection Agency (EPA) requires 6-inch labels on items large enough to display them. For smaller items, labels as small as 2 inches are appropriate. For extremely small items, EPA authorizes labels as small as 4 inch by .8 inch. Whenever possible use permanent markers to complete the bottom lines of the label.

e. The National Fire Protection Association No. 704 System of Hazard Identification. NFPA 404M, Identification of the Hazards of Materials, is a symbol system intended for use on fixed installations, such as chemical processing equipment, storage and warehousing rooms, and laboratory

entrances. It tells a fire fighter what he must do to protect himself from injury while fighting a fire in the area.

1. The NFPA 704 Diamond. The information system is based on the "704 diamond" which is the vehicle for visually presenting information on flammability, health, and self-reactivity hazards as well as special information associated with the hazards. Numbers from 0 through 4 are placed in the three upper squares of the diamond to show the degree of hazard present for each of the three hazards. The 0 indicates the lowest degree of hazard, the 4, the highest. The fourth square, at the bottom, is used for special information. One symbol that can be used here is the letter W with a bar through it to indicate that a material may have a hazardous reaction with water. Another symbol is the "radioactive pinwheel" for radioactive materials. The NFPA 704 diamond symbol is intended to provide immediacy at some sacrifice of adequacy, and there is a tendency to read more into it than it says. The five degrees of hazard, in the order of their descendency, have these general meanings to firefighters:

4- -Too dangerous to approach with standard fire-fighting equipment and procedures. Withdraw and obtain expert advice on how to handle.

3- -Fire can be fought using methods intended for extremely hazardous situations, such as unmanned monitors or personal protective equipment, which prevents all bodily contact.

2- -Can be fought with standard procedures, but hazards are present which require certain equipment or procedures to handle safely.

1- -Nuisance hazards present, which require some care, but standard firefighting procedures can be used.

0- -No special hazards, which require special measures

2. Health Hazards. In general, health hazard in firefighting is that of a single exposure which may vary from a few seconds up to an hour. In assigning degrees of hazard, local conditions must be considered. The following explanation is based upon protective equipment normally used by firefighters.

4- -Materials too dangerous to health to expose firefighters. A few whiffs of vapor could cause death, or the vapor or liquid could be fatal on penetrating firefighter's normal protective clothing. Protective clothing and breathing apparatus available to the average fire department will not provide adequate protection against inhalation or skin contact with these materials.

3- -Materials hazardous to health but areas may be entered with extreme care. Full protective clothing, self-contained breathing apparatus, rubber gloves, boots, and bands around legs, arms and waist should be provided. No skin surface should be exposed.

2- -Materials hazardous to health but areas may be entered freely with self-contained breathing apparatus.

1- -Materials only slightly hazardous to health.

0- -Materials, which on exposure under fire conditions, would offer no health hazard beyond that of ordinary combustible material.

3. Flammability Hazards. Susceptibility to burning is the basis for assigning degrees within this category. The method of attacking the fires is influenced by this susceptibility factor.

4- -Very flammable gases or very volatile flammable liquids. If possible, shut off flow and keep cooling water streams on exposed tanks of containers. Withdrawal may be necessary.

3- -Materials, which can be ignited under almost all normal temperature conditions. Water may be ineffective because of the low flashpoint of the materials.

2- -Materials which must be moderately heated before ignition will occur. Water spray may be used to extinguish the fire because the material can be cooled below its flashpoint.

1- -Materials that must be preheated before ignition can occur. Water may cause frothing if it gets below the surface of the liquid and turns to steam. However, water fog gently applied to the surface will cause a frothing which will extinguish the fire.

0- -Materials that will not burn.

#### 4. Reactivity (Stability) Hazards.

a. The assignment of degrees in the reactivity category is based upon the susceptibility of materials to release energy either by themselves or in combination with other materials. Fire exposure was one of the factors considered along with conditions of shock and pressure.

4- -Materials which are so susceptible to detonation that it is too dangerous for firefighters to approach the fire. Vacate the area.

3- -Materials which when heated and under confinement are capable of detonation. These materials are too dangerous to fight with hand lines, but may be kept from Detonating if unmanned portable monitors or hose holders can be set up from behind explosion-resistant locations.

2- -Materials, which will undergo a violent chemical change at, elevated temperatures and pressures at elevated temperatures and pressures. Use portable monitors, hose holders, or straight hose streams from a distance to cool the tanks and the material in them. Use caution.

1- -Materials, which are normally stable but may become unstable in combination with other materials or at elevated temperatures and pressures. Normal precautions in approaching any fire should suffice.

0--Materials which are normally stable and, therefore, do not produce any reactivity hazard to firemen.

b. Special Information. When W appears in 4<sup>th</sup> space:

4- -W is not used with reactivity hazard 4.

3- -In addition to the hazards above, these materials can react explosively with water. Explosion protection is essential if water in any form is used.

2- -In addition to hazards above, these materials may react violently with water or form potentially explosive mixtures with water.

1- -In addition to hazards above, these materials may react vigorously but not violently with water.

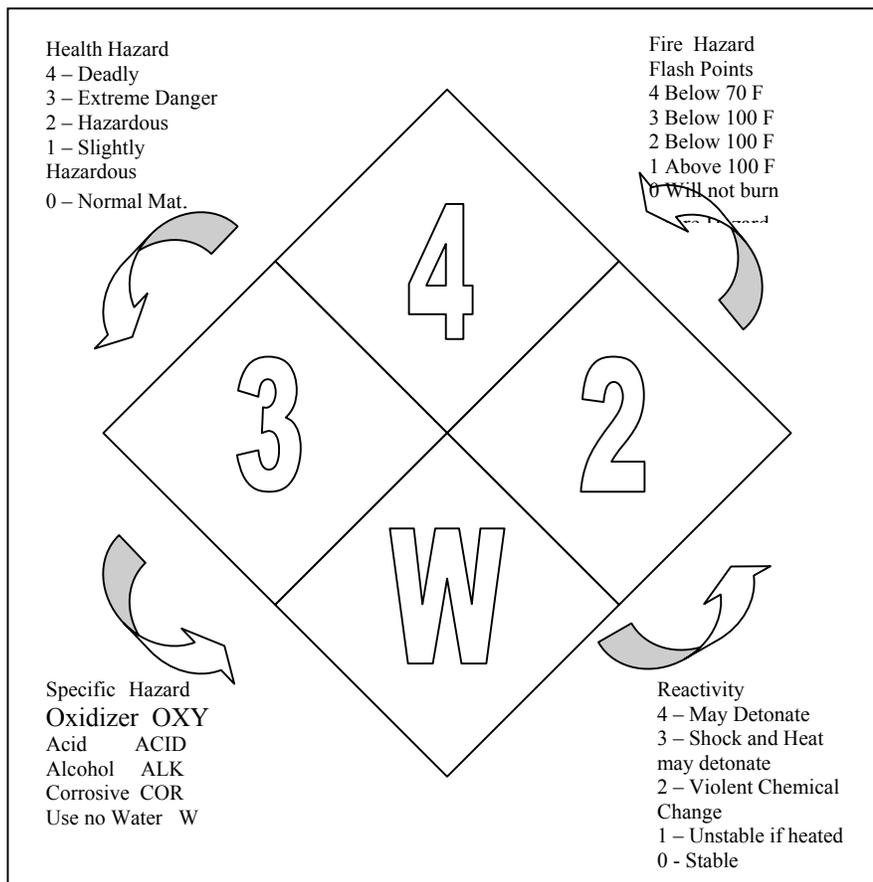
0- -is not used with reactivity hazard 0.

5. Assigning Degrees of Hazard. Numbers (degrees of hazard) for use in the diamond are assigned to the chemical by NFPA on the basis of the worst hazard expected in the area, whether it be from hazards of the original material or of its combustion or breakdown products. The effects of local conditions must be considered. Basic NFPA hazard codes may be found in the Fire Protection Guide on Hazardous Materials, in the HMIS, in CHRIS, and in DOD 4145.19-R-1.

6. Advantages of the NFPA 704 System. The NFPA 704 system can warn against hazards under fire conditions of materials, which other information systems class as non-hazardous. For example, edible tallow produces toxic and irritating combustion products. It would be given a "2" degree of health hazard, indicating the need for air-supplied respiratory equipment. NFPA 704 also can warn against overall fire hazards in an area. On the door of a laboratory or storage room, it can warn of the worst hazards likely in a fire situation. Such information is useful both in preplanning and in actual fires, NFPA 704 can be used without a supplementary manual. Because of its simplicity, the general meanings of the numbers can be memorized easily and the whole symbol read and interpreted quickly on the spot and in poor light.

7. Disadvantages of the NFPA 704 System. The NFPA 704 system makes no provision for oxygen-donor type oxidizers. It gives only minimum information on the hazards themselves. Since the system informs on protective measures, the same number may be used for different types of hazards so that, for instance, a Health Hazard number 3 means "No contact" without saying whether the hazard is corrosiveness to the skin or toxicity by absorption through the skin. Thus, the symbol is useful only to trained or informed persons.

8. Labels. NFPA labels may be obtained through the Federal Supply System (NSN 7690-00-152-0030 for 4 inch by 4 inch size label) or be printed locally in sizes to suit the container dimensions. Symbols may also be applied with rubber stamps, silk screens, stencils, or any other suitable process.



National Fire Protection Association Label

Each standard symbol format (NSN 7690-00-152-0030) requires the application of numerals and symbols to describe the degree of hazard with respect to health, fire, reactivity, and the specific hazard of the packaged product, as applicable. NSNs for numerals (degree of hazard) and symbols (specific hazard) are listed below:

<u>SYMBOL (BLACK)</u>	<u>NSN</u>	<u>NUMERAL (WHITE)</u>	<u>NSN</u>
OXY	7690-00-152-0031	0	7690-00-857-9697
COR	7690-00-152-0032	1	7690-00-857-9688
ACID	7690-00-152-0033	2	7690-00-857-9689
ALK	7690-00-152-0034	3	7690-00-857-9690
	7690-00-152-0035	4	7690-00-857-9691

Examples of combinations of specific hazard symbols follow:

OXY OXY OXY OXY ACID ALK COR  
 ACID ALK COR

(f) The American National Standards Institute (ANSI). This system was established by the Manufacturing Chemists' Association and is intended to identify hazards

associated with specific chemical products. The labels are designed not for protection against specific chemicals but for protection against specific hazards or combination of hazards. These labels are found on many household products. The labels are:

Danger: (Highest degree of hazard).

Warning: (Intermediate degree of hazard).

Caution: (Lowest degree of hazard).

(g) Manufacturers' Labels. These labels can provide valuable information about hazardous ingredients in products, safety precautions, and storage and disposal information.

(h) The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). This law requires certain specific information be included on the regular manufacturers' label in accordance with EPA regulations, including the uses for which the particular pesticide is registered. Pest control offices must make sure they have the most current information; since EPA can change the labeling and use requirements for a pesticide, use of materials with out-of-date labels may be illegal.

(i) Color Coding of Compressed Gas Cylinders. The color coding of compressed gas cylinders can be an indication of what substance is contained in the cylinder.

1. Military compressed gas cylinders should all be color coded in accordance with MIL-STD-101. This standard includes three types of markings:

a. The basic color of the cylinders indicating the hazard of the gas it contains. This is the most important part of the code. The color and indicated hazard are as follows:

Brown - - - - poison.

Gray - - - - - inert (helium, etc).

Yellow - - - flammable.

Green - - - - oxidizer (oxygen, etc.)

Red - - - - - firefighting chemicals (used to extinguish fires).

(Compressed gas cylinders owned by industry are also colored but the color indicates ownership and not hazard.)

b. This system also involves the use of colored bands on cylinders and colored tops of cylinders. These markings provide additional information about the nature of the contents.

2. Examples:

a. Acetylene cylinders. Totally yellow with no markings.

b. Welding oxygen. Totally green with no markings.

c. Medical Oxygen. Green with white top

d. Aviation oxygen. Green with one white band.

3. It is very important to emphasize that the color coding system should not be used alone to identify the contents of a cylinder since color coding systems are not uniformly followed at this time. Therefore, at the present time this is not a dependable system for hazard identification.

c. Other Sources of Information.

(1) DOD Hazardous Material Information System. This system provides information on labeling requirements, chemical characteristics, physical characteristics,

health effects, safety precautions, handling procedures, firefighting instructions, and spill procedures. You may find this information in the HMIS by knowing either NSN or the name of the material.

(2) The Chemical Hazardous Response Information System. If you know the chemical name, the CHRIS manual can be used to determine labeling requirements, physical and chemical properties, fire hazards, and health and environmental hazards.

(3) The DOT Hazardous Materials Table. If you know the chemical name, the DOT Hazardous Materials Table can be used to determine the hazard class, four-digit UN identification number, and required labels.

(4) Manifests. All hazardous wastes require a manifest when shipped. This hazardous waste manifest can provide a considerable amount of information and highlights the fact that the material is considered a hazardous waste. Other shipping documents and manifests can also be used to gain information about the material. All paperwork accompanying the material should be examined carefully.

**ENVIRONMENTAL INSPECTION CHECKLIST**

Note: the Unit Environmental Coordinator (UEC) should conduct Inspections on a monthly basis. Any questions or comments can be directed to the Environmental Office Grafenwoehr 475-7048 or 7209 or the Environmental Office Vilseck 476-2944.

---

Installation: \_\_\_\_\_ UEC: \_\_\_\_\_

Unit/Activity: \_\_\_\_\_ Location: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_ Phone #: \_\_\_\_\_

1. REFERENCE MATERIALS

Are the following reference materials on file?	YES	NO
- Spill Prevention & Cleanup Plan 2001 Version	_____	_____
- Hazardous Waste Management Plan 2002 Version	_____	_____
- Copy of the Final Governing Standards	_____	_____

Note: A copy of above reference material can be obtained from your Environmental Office.

2. STORAGE FACILITY AND HAZARDOUS MATERIAL STORED

Type of Storage Facility:

Type of HAZMAT stored:

A. \_\_\_\_\_

A. \_\_\_\_\_

B. \_\_\_\_\_

B. \_\_\_\_\_

C. \_\_\_\_\_

C. \_\_\_\_\_

D. \_\_\_\_\_

D. \_\_\_\_\_

Examples: Connex, Battery Shop, Pre-Fab. Garage, Wall Locker, Flammable Storage Cabinet, etc. (State WL & FSC location if inside or outside of building.)

Examples: POL, Antifreeze, Acids, Solvents, Pesticides, Paint, NBC, Field Sanitation, etc..

---

**CONTAINER STORAGE AREA \_\_\_\_\_ \*)**

Note: For this section, reproduce this page as required; fill out one per storage facility as listed on the previous page.

\*) Indicate storage location identified in section 2: A, B, C, or D.

	YES	NO	N/A
Are containers in good condition (not rusted/leaking)?	___	___	___
Are containers stored in a neat, orderly manner?	___	___	___
Are containers properly labeled (name readable)?	___	___	___
Are all substances secured against spillage?	___	___	___
Are substances expiration dates current? (not expired)?	___	___	___
Are containers protected from the elements?	___	___	___
Are containers easily accessible (adequate aisle spaces)?	___	___	___
Is storage area secured when not in use (locked)?	___	___	___
Is storage area well illuminated?	___	___	___
Is storage area well ventilated?	___	___	___
Are containers stored below eye level?	___	___	___
Does storage facility have sufficient containment in the event of leaks/spills (catch basins/ drip pans?)	___	___	___
Is MSDS available in German or English?	___	___	___

**Corrective Action:**

---

---

---

---

	YES	NO	N/A
Are fire extinguishers available?	___	___	___
Are emergency procedures and phone numbers posted?	___	___	___
Are warning signs posted?	___	___	___
Are "No Smoking" signs posted?	___	___	___
Do personnel have access to protective equipment?	___	___	___
Do personnel wear appropriate protective equipment when handling HAZMAT?	___	___	___
Are flammable materials protected from ignition sources?	___	___	___
Are incompatible materials stored separately?	___	___	___
Are emergency shower and eye wash facilities available?	___	___	___

**Corrective Action:** \_\_\_\_\_  
 \_\_\_\_\_

### 5. SPILL RESPONSE AND PREVENTION

	YES	NO	N/A
Is unit personnel trained (at least semi-annually on:)			
• Spill prevention measures?	___	___	___
• Spill notification procedures?	___	___	___
• Clean-up procedures?	___	___	___
• Safe handling procedures?	___	___	___
• Proper personnel protective equipment?	___	___	___
Is adequate clean-up equipment available for spills?			
• Overpack containers?	___	___	___
• Absorbent material?	___	___	___
• Shovels/scoops/brooms?	___	___	___
Is area free of evidence of spilled/leaked materials?	___	___	___

**Corrective Action:** \_\_\_\_\_  
 \_\_\_\_\_

## 6. WASTE OIL DISPOSAL

	YES	NO	N/A
Are unit personnel aware of proper disposal methods?	___	___	___
Does the tank have adequate containment (catch basin?)	___	___	___
Is catch basin free of oil and solid waste? Note: Waste oil goes in the tank NOT in the catch basin!	___	___	___
Is tank opening covered with grating and lid?	___	___	___
Is tank open easily accessible (steps provided?)	___	___	___
Is waste oil tank used ONLY for WASTE OIL disposal? (includes: engine oil, lubricating oil, hydraulic fluid, etc. NOT fuels, antifreeze, battery acid, etc.)	___	___	___
Is area around disposal facility free of spills?	___	___	___

**Corrective Action:** \_\_\_\_\_

---

## 7. POL CONTAMINATED SOLIDS DISPOSAL

	YES	NO	N/A
Do personnel know what POL contaminated solids are? (Items contaminated with Petroleum, Oil & Lubricants and include but are not limited to cans, filters, rags, dry sweep, wood, other, not to exceed 1.5 ft diam.)	___	___	___
Do personnel know that these are the ONLY waste products to be disposed of in the POL Waste Containers?	___	___	___
Is the area around the container free of spills?	___	___	___
Is the area around the container free of trash?	___	___	___
Is waste level of container monitored regularly? Note: When container is 70 % full CALL your Environmental Office)	___	___	___

**Corrective Action:** \_\_\_\_\_

---

**HAZARDOUS SUBSTANCE COMPATIBILITY****DEFINITIONS**

1. Acid: substances containing inorganic acids with a pH equal to or less than 4.0
2. Caustic: Substances containing inorganic bases with a pH equal to or greater than 9.0.
3. Organic: Substances containing non-reactive organic materials
4. Oxidizers: Substances such as chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter.
5. Reactive: Substances that react violently with water.
6. General: Substances that are not chemically active and not primarily organic in nature.

**COMPATIBILITY**

	ACID	CAUSTIC	ORGANICS	OXIDIZERS	REACTIVE	GENERAL
ACID	--	NC	NC	NC	NC	NC
CAUSTIC	--	NC	NC	--	NC	NC
ORGANICS	NC	NC	--	NC	NC	NC
OXIDIZERS	NC	--	NC	NC	NC	NC
REACTIVE	NC	NC	NC	NC	--	NC
GENERAL	NC	NC	NC	--	NC	--

NC = NOT COMPATIBLE

**SAMPLES OF CHEMICALS THAT ARE NOT COMPATIBLE**

CHEMICAL	AVOID CONTACT WITH:	DOT CLASSIFICATION
Acetic Acid	chromic acid ethylene glycol hydroxyl compounds nitric acid perchloric acid permanganates peroxide strong oxidizers strong caustics	Corrosive material
CHEMICAL	AVOID CONTACT WITH:	DOT CLASSIFICATION
Acetylene	bromine chlorine	Flammable gas

	copper fluorine silver heat and pressure	
Alkaline Metals	aluminum, powdered carbon tetrachloride magnesium potassium sodium water	
Ammonia; Anhydrous ammonia	bromine calcium hypochlorite chlorine hydrofluoric acid iodine mercury	Non-flammable gas
Ammonium nitrate	acids chlorates combustibles flammables nitrites powdered metals sulfur	
Carbon, Activated	calcium hypochlorite oxidizing agents	
Chlorates	acids ammonium salts combustibles powdered metals sulfur	
Chromic acid	acetic acid alcohol camphor flammables glycerin naphthalene turpentine	
CHEMICAL	AVOID CONTACT WITH:	DOT CLASSIFICATION
Chlorine	acetylene ammonia benzene butadiene butane hydrogen methane propane sodium carbide	

	turpentine
Chlorine dioxide	ammonia hydrogen sulfide methane phosphine
Copper	acetylene Hydrogen peroxide
Flammable liquids	ammonium nitrate chromic acid halogens hydrogen peroxide nitric acid sodium peroxide
Fluorine	water nitric acid most oxidizable materials
Hydrocarbons	bromine calcium hypochlorite chlorine chromic acid fluorine sodium peroxide
Hydrofluoric acid, anhydrous	ammonia
Hydrogen sulfide	nitric acid oxidizing gases

**CHEMICAL**

**AVOID CONTACT WITH:**

**DOT CLASSIFICATION**

Hydrogen peroxide	acetone alcohols aniline nitro methane chromium combustibles copper flammables iron metals nitro methane organics
Mercury	acetylene ammonia fulminic acid oxalic acid
Nitric acid	acetic acid aniline

	chromic acid flammables hydro cyanic acid hydrogen sulfide
Oxalic acid	mercury silver
Potassium permanganate	benzaldehyde ethylene glycol glycerin hydrogen peroxide sulfuric acid
Silver	acetylene ammonia oxalic acid tartaric acid
Sulfuric acid	potassium chlorate potassium perchlorate potassium permanganate

## HAZARDOUS MATERIALS HANDLING

1. If you are going to be handling hazardous materials, it's important that you understand some of the problems that can occur if you fail to take certain precautions. Of course, you can have difficulty in handling any item, but the special characteristics of hazardous materials can really give you trouble. Although many common problems are associated with having to move improperly packaged items, it is important to realize that packaging techniques alone will not necessarily prevent spills or accidents.

2. Material Handling Equipment (MHE). The following items of MHE are used frequently at Army installations and are familiar to most personnel. The safety precautions described for this equipment should be observed at all times but special care must be taken with hazardous materials because of the serious consequences of a mistake or accident. Damaged packaging, spills (especially those in which two or more hazardous materials are mixed), or other accidents caused by misuse of MHE can cause major problems.

a. Forklift Trucks. Forklift trucks are designed to pick up, carry, and stack unit loads of supplies and equipment. Standard forklift trucks are available with lifting capacities of 2,000 to 20,000 pounds and lifting heights of 100 to 210 inches. Gasoline-powered forklift trucks may be equipped with solid rubber or semisolid tires for use in warehouses or pneumatic tires for use in warehouses or pneumatic tires for use in outdoor storage areas; electric powered forklift trucks are equipped with solid rubber or semisolid tires for indoor operation only. Forklift trucks are not designed to be used as tow vehicles and should not be used for this purpose. Electronic powered models are more suitable than gas powered ones for poorly ventilated areas and for handling flammable items and explosives. The National Fire Safety Standard for Powered Industrial Trucks lists 13 different types of forklifts. The fact that different types of forklifts exist is important because different situations require the use of specific types of forklifts to handle material safely.

Fire Hazards. A large number of fires involving forklifts are caused by equipment failure due to a lack of maintenance. Requiring special attention is the detection of faulty fuel connections on gasoline forklifts and the removal of accumulations of grease and dirt on all types of equipment. The number of fires involving battery-powered trucks is comparatively small; however, electrical short circuits, hot resistors, arcing or fused contacts, and exploding batteries have caused fires in some forklifts. Any vehicle that emits hazardous sparks or flames from the exhaust system should be removed from service immediately. When dealing with hazardous materials, not only can the forklift start on fire but the flammable cargo may also ignite or explode.

b. Hand trucks. Hand trucks are useful in all types of storage operations, particularly where mechanical equipment cannot be employed because of space limitations. They are often more economical to use for the movement of a single item than a piece of mechanical equipment. The four-wheel hand truck may be used to advantage in carrying light loads or for any operation involving short hauls with frequent stops. Because they can be more easily controlled, hand trucks are often the safest way to move small quantities of hazardous material.

c. Pallets. A pallet is a low portable platform constructed of wood, metal, or fiberboard, built to specified dimensions, on which supplies are loaded, transported, or stored in units. Flat pallets are either single-faced or double faced. Single faced pallets have one platform with stringers underneath on which the weight of the load rests. Double-faced pallets have two platforms, separated by stringers. Pallets may allow two-way or four-way entry. The two-way entry pallet is so constructed that the forks of a forklift truck may be inserted from either the front or rear of the pallet. The four-way pallet is built so that forks may be inserted from any side. Pallets permit transporting, storing, or issuing quantities of material with a minimum of manual handling. The efficiency of operation is greatly increased since the pallet system of storage provides for the transportation of packaged items

in unit loads and increases the volume and tonnage of materials, which may be handled per man-hour.

3. MHE Selection Factors. The potential savings in terms of time, funds, and personnel resulting from the selection of the right type of MHE for an operation cannot be overemphasized. When handling hazardous materials, this selection can be especially significant. When selecting equipment, the size, shape, and container strength of the commodities to be handled should be considered.

4. Materials Handling Principles. Whether or not an item is hazardous, certain general principles exist that should be recognized when an organization is establishing procedures to handle material. By developing an understanding of these principles, a worker will be able to recognize if the procedures being used at his installation are the best ones possible under the circumstances.

Generally:

a. The least handling is the best handling. The greatest economy in moving materials is secured by not handling the material at all. This is usually impossible but an attempt must be made to keep handling to a minimum. Since there is always a danger of a spill when moving hazardous materials, the less they are moved, the less chance of a major incident. To avoid unnecessary handling, a single individual should be designated as the point of contact for handling and storage questions pertaining to hazardous materials. This individual would be familiar with hazardous materials, safety, storage, and handling considerations and could insure items were properly placed initially and handling requirements minimized.

b. Standardization of methods and equipment benefits the materials handling activity. Costs of operation can be reduced because maintenance and repair, storage, and handling procedures can be simplified. As standardized procedures are repeated, individuals become familiar with the special handling required for different types of hazardous materials and are, thus, more likely to use correct procedures.

c. Advanced planning on materials handling methods and equipment should be carried on at the same times as other planning activities. This is particularly true with hazardous materials since it's much easier to prevent an incident than to respond to one.

d. Equipment capacities should never be exceeded. Overloading causes excessive wear of equipment and creates additional accident potential.

e. The physical state of materials is a factor in determining MHE requirements. The three physical states of material – solid – liquid - or gas determine the method of packing. Gases are contained in cylinders; liquids such as acids are contained in carboys; and solids such as sheet and bar stock metals may require wood skids. This type of packaging, in turn, influences selection of MHE.

f. Short, irregular moves lend themselves to manual materials handling. Some materials handling operations do not occur with any degree of repetitiveness. The use of equipment may be much more costly than manpower. When moves are short, irregular, and the load capacity of the men is not exceeded, it may be more economical to use manpower. Although this principle is generally applicable, when handling hazardous materials, the facility must consider the cost of individual protective clothing and equipment as well as safety.

g. Wherever practical, materials should be pre-positioned for the handling operations. By placing containers in a position to facilitate picking up, by putting containers on a conveyor carefully and by making sure material does not obstruct MHE, you can reduce the number of accidents and prevent equipment/material damage.

h. Wherever practical, materials should be moved in the horizontal plane or with the aid of gravity. When people have to reach either up or down during loading and unloading, excessive effort is used. Changes in the workplace layout could reduce this extra effort and the inherent safety problems associated with lifting things up and down.

5. Materials Handling Safety Precautions. There are a number of safety precautions that should be followed when handling any material. Given the special characteristics of hazardous materials, it makes good sense to be especially sure you take these precautions when working with these materials. When considering the following safety rules, think of how they might prevent spills or personal injuries.

a. Protective clothing and accessories including gloves, face shields, goggles, and safety shoes will be worn when required.

b. Material will be examined for leaks, container damage, corrosion, weakened places, or other factors which may cause injury to workers. Defects should be corrected before proceeding.

c. All stacked materials will be arranged in an orderly manner for convenient and safe handling.

d. Defective or broken strapping on material will be removed, repaired, or replaced.

e. Material will not be thrown from elevated places to the floor or ground. Use suitable lowering equipment.

f. Wheelbarrows, hand trucks, and other similar devices will not be overloaded. These devices will be pushed, not pulled, except when going up inclines.

g. Ropes used for carrying or towing, which have defects, will be replaced.

h. Appropriate tools will be used for each job. For example, nail pullers will be used for opening boxes, strap or wire cutters for cutting metal strapping or wire, and hammers for driving nails. Safety hand tools are constructed of wood or other non-sparkling or sparkling resistant materials. Properly maintained non-ferrous hand tools will be used for work in locations, which contain hazardous concentrations of flammable dusts, gases or vapors. Hand tools used in the vicinity of hazardous materials must be handled carefully and kept clean.

i. Hand operated trucks, dollies, and similar equipment will not be parked in traffic lanes or roadways.

j. Cylindrical objects will be blocked to prevent rolling.

k. When working at high elevations, a lifeline and safety belt will be worn if other safeguards are impractical.

l. Carboy tilters will be used for safe removal of dangerous liquids, such as acids from carboys.

m. Special bung fittings and automatic faucets will be used on drums for dispensing and storing of dangerous liquids.

n. When transferring flammable liquids from one container to another make sure that the container is grounded and that a connector exists between the two containers.

6. Summary. In this annex we have covered the use of MHE, the typical types of MHE available at an Army installation, and why proper handling procedures are necessary. You should now realize the importance of understanding and following the local standing operating procedures on materials handling at the 409th Base Support Battalion Grafenwoehr / Vilseck. Proper materials handling procedures can prevent injury to workers, spills that damage the environment, and damage to valuable Government property.

## ANNEX G

### HAZARDOUS MATERIAL STORAGE AREA (HMSAS) REQUIREMENTS

a. General HMSA Requirements: Hazardous material storage facilities will adhere to DOD 4145.19-R-1 "Storage and Handling and Implementing Regulations Governing Storage and Handling Hazardous Materials" plus the requirements of the Final Governing Standards (FGS), chapter 5.

1. Each HMSA that stores over 200 kg of toxic materials or 50 kg of very toxic materials must have an operations plan that contains information on the maximum admissible storage amount, the separation of materials, the type and amount of stored goods within the facility, the personnel protection practices, and the equipment available. The plan must correspond to the HMSA building design, must be kept up to date and be checked at least once a month to ensure that it accurately represents what is stored in the HMSA. A copy must be kept outside the HMSA in an accessible place.

Hazardous material storage facilities that store less than 200 kg of toxic or oxidizer materials, or less than 50 kg of very toxic materials are not classified as a HMSA. Storage in these facilities must still ensure that the environment and human health are protected and meet the requirements of DOD 4145.19-R-1.

2. Protection of Water Sources. HMSAs must be configured and operated in such a way that surface waters and ground waters are not endangered. They must be protected from high water and flooding.

3. The HMSA that stores toxic material must be well lit. The lighting system must not heat the toxic substances. All lights shall be at least 0.5 m from the toxic materials. The floor of the HMSA that stores toxic substances must be leak proof. Toxic substances must be kept in closed packages or containers, which shall not leak. Should any leaks be identified, the packages or containers will be removed and the substances repackaged.

4. All safety devices and systems, for example, fire alarms and fire extinguisher plants, smoke and heating take-off devices, fire doors, and lightning rods must be regularly certified to be in good working order. There must be adequate systems to exhaust smoke and heat.

5. POL from machinery used in HMSAs that store oxidizers, such as a forklift, must be cleaned and disposed of immediately.

6. Combustible materials that are easily ignited (e.g. paper, textiles, wood, excelsior, hay, straw, or cartons) must not be stored with oxidizers and/or toxic materials. In places where oxidizers are stored, items such as pallets, dunnage, packing fill, etc., must be made of nonflammable materials or treated to be nonflammable. This does not apply to the actual packaging that these hazardous materials come in.

7. Smoking, open flames, and fires are absolutely prohibited in areas storing toxic substances.

8. Flammable substances must never be stored with toxic or very toxic substances that are not combustible. Substances that are completely flammable may be stored with flammable toxic and very toxic substances if the requirements for flammable and toxic storage are met.

9. HMSAs that store over 200 kg of toxic substances and have more than 20 metric tons per storage section, must be supplied with an automatic fire-alarm system.

10. HMSAs that store over 50 kg of very toxic substances and have more than 10 metric tons per storage section must be supplied with an automatic fire alarm system, unless the fire department approves another fire detection system.

b. Specific HMSA Requirements. The following requirements are only to be applied to the type of HMSA indicated.

1. Hazardous Materials Warehouses.

(a) Oxidizing substances will not be stored in multistory buildings.

(b) Toxic substance storage sections must be separated from other storage sections, rooms, and buildings by fire resistant walls and ceilings made of noncombustible materials with a 90-minute fire rating.

(c) In addition to para 5-404f of DOD 4145.19-R-1, liquid oxidizing substances must be stored in such a way that they will not leak out in an uncontrolled manner and mix with other hazardous material.

(d) There must be secondary containment with a volume that will contain at least 10% of the liquid volume of all stored packages and moveable vessels, and at least 100% of the volume of the largest liquid containing vessel.

(e) Buildings in which toxic materials are stored must be ventilated in such a way that fumes or other emissions will never reach a level that could be considered dangerous or a health hazard.

2. Outdoor Storage Areas. In addition to the requirements established in DOD 4145.19-R-1, the following additional requirements must be satisfied.

(a) Outdoor storage areas for toxic substances must be separated from other adjacent storage areas or buildings by fire resistant walls made of noncombustible building materials with a 90-minute fire wall rating. The walls must be at least 1 m higher than the stored material. Toxic material must be at least 5 m from any building doorway.

(b) Outdoor toxic material storage of more than 20 metric tons per storage section, without an automatic fire alarm system, must be patrolled hourly by someone with communication device like a telephone, fire alarm, or radio set.

(c) Oxidizers and toxic substances must have secondary containment with a volume that will contain at least 10% of the liquid volume of all stored packages and moveable vessels, and at least 100% of the volume of the largest liquid-containing vessel.

c. Fire Suppression Requirements. In addition to the DOD 4145.19-R-1 requirements, HMSAs containing more than 200 kg of toxic materials or 50 kg of very toxic materials must also meet the following:

1. Each of these HMSA must have a fire protection plan. The plan shall contain the specific DOD HMSA fire protection requirements, the special considerations due to the location of the HMSA, and the degree of danger associated with the stored substances. The fire department must be consulted when developing the fire protection plan.

2. For each of these HMSA an emergency evacuation plan as to be compiled and posted in several conspicuous places in and around the storage areas.

3. Substances which require different fire extinguishing agents must not be stored together.

4. At least a 12 kg powder extinguisher is necessary for a 50 square meter of toxic materials. For each additional 100 sqm another 10 kg powder extinguisher is required. Toxic substances covering more than 2000 sqm must also have a movable 5 kg powder extinguisher.

5. When using water as the primary fire suppression system, there must be appropriate equipment (e.g. wall hydrants with rolling hoses/tubes or pipes with a diameter of 50mm or more) and a sufficient quantity of water.

6. If high-bay storage areas are supplied with automatic extinguishing devices (e.g. sprinkler or spray water extinguishing systems), the stored material must be directly reached by the extinguishing agent.

7. When storing items that contain highly reactive substances, the appropriate extinguishing agents must be kept on hand and be readily available in sufficient quantity to fight a fire.

8. These HMSA must have an approach road for the fire department and be accessible on two sides.

9. Work in or near these HMSA involving welding, flame-cutting torches, abrasive friction cutting tools, or an open flame must have approval from the installation commander or his/her designated representative.

d. Lightning Protection Systems.

1. If an HMSA stores oxidizers (over 200 kg) and combustible goods, the building must have a suitable lightning protection system.

2. Buildings storing toxic and/or very toxic substances with a total weight of more than 5 metric tons must have a lightning protection system unless the stored materials are composed of entirely noncombustible substances.

4. Every 3 years the lightning protection systems must be tested in these facilities.

### **HAZARDOUS WASTE STORAGE AREA REQUIREMENTS**

a. General. All Hazardous Waste Accumulation Points (HWAPs) and Hazardous Waste Storage Areas (HWSAs) must be designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or an unplanned release of hazardous waste that might:

1. Endanger human health or reduce physical comfort;

2. Endanger livestock, birds, game, or fish;

3. Harm water, soil, or useful plants;
4. Cause damage to the environment by air or noise pollution;
5. Fail to protect nature conservation or city planning efforts; or
6. Endanger or disturb the public.

Particular care must be taken to ensure compliance with restrictions on the storage of hazardous wastes in water protection zones.

b. Thresholds for HWAPs and HWSAs.

1. HWAPs are areas at or near the point of generation for collecting and storing hazardous waste. HWAPs may not store more than 200 kg of a hazardous waste stream or 50 kg of very hazardous waste stream. A HWAP may be a shop, a site, or other work center dealing with one or more waste streams.

2. HWSAs are facilities for storing more than 200 kg of a hazardous waste stream or 50 kg of very hazardous waste stream.

c. Specific Requirements for HWAPs.

1. Each HWAP must be designed and operated to provide appropriate segregation for different waste streams, including those, which are chemically incompatible.

2. When the limits established in para b,1 have been reached, the generator will make arrangements to move the hazardous waste to a HWSA or ship it to a site for treatment or disposal.

3. All tanks or containers storing liquid containing hazardous waste must have containment basins (drip pans) that have sufficient capacity to contain at least 10% of the volume of all the tanks or containers placed in them or 100% of the largest tank or container, whichever is greater.

d. Specific Requirements for HWSAs. In addition to the requirement for hazardous material storage areas, HWSAs must meet the following standards:

1. Each HWSA must have an internal communications or alarm system capable of providing immediate instruction to the HWSA personnel. In addition a HWSA must have immediately available the scene of operations an intrinsically safe phone or hand-held two-way radio capable of summoning emergency assistance from police, fire departments, and emergency response teams. HWSAs also require fire control equipment appropriate to the substances in storage, spill control equipment, and personal protective equipment. All equipment must be periodically tested and properly maintained.

2. Hazardous wastes must be stored in separate containers from reusable hazardous materials. Separated and labeled storage areas must be established for hazardous wastes that are not compatible. The separated storage areas must be a sufficient distance apart to ensure that the different types of waste will not be mixed. Halogenated solvents may not be mixed with any other waste.

3. Storage or work areas for containers that are opened during the normal course of activities must be covered.

4. Underground storage tanks may not be used to store hazardous liquid waste. (Note: If a substance, such as used oil is to be recycled, it is not considered a waste. Therefore it may be stored in an underground storage tank.)

5. Solid and pasty hazardous waste in containers must be stored in multi-compartmented facilities. Sludge waste must be stored in multi-compartmented facilities or in above ground storage tanks. Containers must have leak detectors.

6. Particular care must be exercised to ensure that ignitable, reactive, or incompatible wastes are not handled in a manner, which could result in conditions that might threaten human health or the environment.

7. "No Smoking" signs must be conspicuously posted in the hazardous waste storage areas.

8. Containment. Floor areas where volatile hydrocarbons are dealt with must be constructed of, or coated with, materials that are resistant to these substances. Storage must be so configured that a leak from a single container may not find its way into another storage area. Single walled tanks or containers must be set up in collecting basins that will not allow the mixing of different types of hazardous waste, should there be a leak. The basins must be a sufficient distance apart to ensure there is no fire or safety risk, should there be a leak.

9. All work areas within the HWSA must be labeled according to their function.

10. Operators of HWAPs and HWSAs must maintain an audit trail for all hazardous wastes that pass through the facility. (See FGS Chapter 6,e, 1,2,3).

409<sup>TH</sup> BSB GRAFENWOEHR  
MASTER LIST OF HAZARDOUS MATERIALS AND  
HAZARDOUS / CONTAMINATED WASTE STORED IN PREFAB STORAGES

**HAZARDOUS MATERIALS/WASTES****CONTAMINATED MATERIALS**

Aerosol Cans

Cans, canisters

Technical Alcohol

Drums (metal/plastic)

Denaturated Alcohol

Mixed Waste Streams

Amilic Acid

Filters

Antifreeze

Exhaust Tubes

Battery Acid

Expired Air Filters

Break Fluid

Used Car Batteries

Dry Cleaner

Polluted Soil/Gravel

Engine Starting Fluid

Polluted Dry Sweep

Automotive Artillery Grease

Old Brake Linings

Hydraulic Fluid

Expired Kits

Insect Repellent

Old Decontamination Equipment

Lubricants

Lube Oils

Weapon Oil

Paints (solid/liquid)

Solvents (w/w.o. halogenated hydrocarbons)

Wood Preservatives

DS2 and STB

**APPENDIX H**

**HAZARDOUS MATERIAL (HM) HAZARDOUS WASTE (HW)  
ACCUMULATION POINTS AND STORAGE AREAS AT GRAFENWOEHR  
MAIN CAMP / EAST CAMP / RANGES**

<b>Bldg. #</b>	<b>Type of Waste</b>	<b>Container</b>	<b>QTY</b>	<b>Unit/Activity</b>
301	Solid Paint	240 liter	2 each	JMMA
	POL Cont. Solids	1.1 cbm	2 each	
	POL Cont. Filters	1.1 cbm	2 each	
	POL Cont. Absorbent	240 liter	4 each	
	Cont. Fuel	200 liter	2 each	
	Aersol Cans	120 liter	2 each	
	Break Fluid	50 liter	1 each	
	Empty Plastic Cans	200 liter	2each	
	Empty Metal Cans	200 liter	2 each	
319	POL Cont. Solids	1.1 cbm	3each	JMMA
	POL Cont. Filters	1.1 cbm	2 each	
	Antifreeze	200 liter	2 each	
	Aerosol Cans	60 liter	4 each	
	Break Fluid	50 liter	1 each	
	Empty Plastic Cans	200 liter	1 each	
	Empty Metal Cans	200 liter	1 each	
318	Fluorescent Light Tubes	Pallets	2 each	DPW Self Help
475	Photographic Fixer	120 liter	2 each	Health Clinic
	Photographic Developer	120 liter	2 each	
131	Photographic Fixer	120 liter	2 each	Dental Clinic
	Photographic Developer	120 liter	2 each	
	Acids	60 liter	1 each	
602	POL Cont. Absorbent	1.1 cbm/240 liter	1 ea / 2 ea	535 <sup>th</sup> Engr Co
	POL Cont. Filters	1.1 cbm/240 liter	1 ea / 2 ea	
	Lithium Batteries	120 liter	1 each	
	Magnesium Batteries	120 liter	1 each	
	Battery Acid	200 liter	1 each	
528	POL Cont. Filters	1.1 cbm/240 liter	1 ea / 1 ea	Car Care Center
	POL Cont. Solids	1.1 cbm/240 liter	1 ea / 1 ea	
	POL Cont. Absorbent	1.1 cbm/240 liter	1 ea / 1 ea	
	Cont. Fuel	200 liter/120 liter	2 ea / 1 ea	
	Halogenated Solvents	200 liter	2 each	
	Antifreeze	200 liter	3 each	
	Aerosol Cans	60 liter	1 each	
	Plastic Containers	120 liter	2 each	

**HAZARDOUS MATERIAL (HM) HAZARDOUS WASTE (HW)  
ACCUMULATION POINTS AND STORAGE AREAS AT GRAFENWOEHR  
MAIN CAMP / EAST CAMP / RANGES**

<b>Bldg. #</b>	<b>Type of Waste</b>	<b>Container</b>	<b>QTY</b>	<b>Unit/Activity</b>
629	Antifreeze	200 liter	2 each	5/38 Aviation Co
	Halogenated Solvents	200 liter	1 each	
	Empty Metal Cans	120 liter	1 each	
	POL Cont. Filters	240 liter/120 liter	1 ea / 2 ea	
	Paint Sludge	120 liter	1 each	
	Aerosol Cans	60 liter	1 each	
	POL Cont. Solids	240 liter	1 each	
	POL Cont. Absorbent	240 liter	1 each	
630	POL Cont Solids	240 liter	1 each	615 <sup>th</sup> MP Co
	Brake Fluid	200 liter	1 each	
	Anti Freeze	200 liter	2 each	
643	Dry Cell Batteries	120 liter	5 each	Range Warehouse
	Battery Acid	200 liter	1 each	
2025	POL Cont. Absorbent	240 liter	1 each	7ATC Flight Detachment
	POL Cont. Solids	240 liter	1 each	
	Empty Metal Cans	240 liter	2 each	
1030/1024	POL Cont. Filters	1.1 cbm	1 each	OMA TP 1
	POL Cont. Solids	1.1 cbm	1 each	
	POL Cont. Absorbent	240 liter	2 each	
	Anti Freeze	120 liter	1 each	
	Aerosol Cans	60 liter	1 each	
4029	POL Cont. Solids	1.1 cbm	1 each	377 <sup>th</sup> Trans Co, MP 7
	POL Cont. Filters	1.1 cbm	1 each	
	Empty Metal Cans	240 liter	1 each	
	Empty Plastic Cans	240 liter	1 each	
	Cont. Fuel	200 liter	2 each	
	Anti Freeze	200 liter	2 each	
Landfill	POL Cont. Solids	1.1 cbm	5 each	San. Landfill
	POL Cont. Filters	7 cbm	1 each	
	POL Cont. Absorbent	7 cbm	1 each	
	Antifreeze	200 liter	5 each	
	Paint Sludge	200 liter	2 each	
	Paint Solidified	200 liter	2 each	
	Grease Automotive	120 liter	7 each	
	Aerosol Cans	60 liter	17 each	
	Halogenated Solvents	200 liter	2 each	
	Empty Plastic Cans	7 cbm	2 each	
	Empty Metal Cans	7 cbm	1 each	
	Lithium Batteries	120 liter	10 each	
	Magnesium Batteries	120 liter	10 each	
	Nickel-Cadmium Btry.	120 liter	1 each	

	Dry Cell Batteries	200 liter	12 each	
	Lead Acid Batteries	120 liter	1 each	
2500	Fire Ext. Residues	120 liter	Various drums	Fire Dept. Airfield
329	Dry Cell Batteries	60 liter	3 each	DPW Electric Shop
	Nickel-Cadmium Batteries	60 liter	1 each	
	Lead Acid Batteries	100 liter	1 each	
	Dry Cell Batteries	60 liter	2 each	
521	POL Cont. Absorbent	7 cbm	1 each	Fire Departm.

- In addition to the above listed accumulation points each Motor Park/Tank Park as well as the Ranges are equipped with a Hazardous Waste Collection Shed.
- Appr. 112 each dry cell battery collection containers are placed throughout the Main Camp and Field Camps.

**CONTAINERS FOR COLLECTION OF HAZARDOUS WASTE**
**SOUTH CAMP VILSECK**

HIN	WASTE	Bldg. # 732	Bldg. # 731	Bldg. # 728
E 0501	Batteries, Lithium	1 x 60   KSPR	2 x 60   KSPR	0
E 0502	Batteries, Magnesium	0	1 x 60   KSPR	0
E 0503	Batteries, Nickel Cadmium	0	0	0
E 0505	Dry Cell Batteries	1 x 60   KSPR	1 x 60   KSPR	0
E 0508	Batteries, Lead Acid	7xASK 600/P3 Box	0	0
E 0644	Cartridges, diesel starter	0	1 x 60   KSPR	0
E 1914	DS-2, Decontaminating Agent	0	0	0
E 2006	Mercury a. M. Cont. Items	0	0	0
E 2025	Activated Carbon	0	0	0
E 2038	Antifreeze	0		0
E 2145	Fluorescent Light Tubes	0	0	0
E 2307	Glues and Adhesives	0	0	0
E 2329	Calcium Hypo Chlorite, (STB)	0	0	0
E 3120	Paint, Free of Halog. Solvents	0	0	0
E 3133	Printing Products, Toner	0	0	0
E 3140	Rubbers and Tires	0	0	0
E 3704	Photographic Waste	0	0	0
E 3907	Oil Contaminated Solids	2 x 1,1 m <sup>3</sup>	3 x 1,1 m <sup>3</sup>	1 x 10 m <sup>3</sup> Mulde
E 3919	Filters, Oil Contaminated	1 x 200   MSPR	1 x 200   MSPR	0
E 3927	Fuels, Contaminated	1 x IBC 800 liquid	0	0
E 3943	Brake Fluid	0	0	0
E 3951	Mixed Petroleum	0	0	0
E 3966	Grease	0	0	0
E 4506	Aerosol Cans	0	1 x 60   KSPR	0
E 4566	Non Halogenated Solvents	0	0	0
E 5622	Asbestos Bearing Items	0	0	0
E 5633	PCP, Treated Wood	0	0	0
E 6089	Metal, Contaminated	2 x 1,1 m <sup>3</sup>	3 x 1,1 m <sup>3</sup>	0
E 8006	Fine Chemicals	0	0	0

**CONTAINERS FOR COLLECTION OF HAZARDOUS WASTE**
**SOUTH CAMP VILSECK**

HIN	WASTE	Bldg. # 711	Bldg. # 705	Bldg. # 685
E 0501	Batteries, Lithium	0	0	0
E 0502	Batteries, Magnesium	0	0	0
E 0503	Batteries, Nickel Cadmium	0	0	0
E 0505	Dry Cell Batteries	0	0	0
E 0508	Batteries, Lead Acid	1xASK 600/P3 Box	1 x ASK 600/P3 Box	0
E 0644	Cartridges, diesel starter	0	0	0
E 1914	DS-2, Decontaminating Agent	0	0	0
E 2006	Mercury a. M. Cont. Items	0	0	0
E 2025	Activated Carbon	0	0	0
E 2038	Antifreeze	2 x IBC 1060 liquid	1 x IBC 800 liquid	0
E 2145	Fluorescent Light Tubes	0	0	0
E 2307	Glues and Adhesives	0	0	0
E 2329	Calcium Hypo Chlorite, (STB)	0	0	0
E 3120	Paint, Free of Halog. Solvents	0	0	0
E 3133	Printing Products, Toner	0	0	0
E 3140	Rubbers and Tires	0	0	0
E 3704	Photographic Waste	0	2 x IBC 1060 liquid	0
E 3907	Oil Contaminated Solids	1 x 10 m <sup>3</sup> Mulde	0	2 x 1,1 m <sup>3</sup>
E 3919	Filters, Oil Contaminated	3 x 200 l MSPR	0	0
E 3927	Fuels, Contaminated	0	1 IBC 800 liquid	0
E 3943	Brake Fluid	1 x IBC 400 liquid	5 x 30 l Kanister	0
E 3951	Mixed Petroleum	0	10 x 30 l Kanister	0
E 3966	Grease	0	0	0
E 4506	Aerosol Cans	0	0	0
E 4566	Non Halogenated Solvents	0	1 x IBC 800 liquid	0
E 5622	Asbestos Bearing Items	0	0	0
E 5633	PCP, Treated Wood	0	0	0
E 6089	Metal, Contaminated	1 x 1,1 m <sup>3</sup>	0	1 x 1,1 m <sup>3</sup>
E 8006	Fine Chemicals	0	0	0

**CONTAINERS FOR COLLECTION OF HAZARDOUS WASTE****SOUTH CAMP VILSECK**

HIN	WASTE	Bldg. # 670	Bldg. # 660	Bldg. # 650
E 0501	Batteries, Lithium	1 x 120   KSPR	1 x 60   KSPR	0
E 0502	Batteries, Magnesium	1 x 120   KSPR	1 x 60   KSPR	0
E 0503	Batteries, Nickel Cadmium	0	0	0
E 0505	Dry Cell Batteries	0	1 x 60   KSPR	0
E 0508	Batteries, Lead Acid	0	0	0
E 0644	Cartridges, diesel starter	0	0	0
E 1914	DS-2, Decontaminating Agent	0	0	0
E 2006	Mercury a. M. Cont. Items	0	0	0
E 2025	Activated Carbon	0	0	0
E 2038	Antifreeze	0	0	0
E 2145	Fluorescent Light Tubes	0	0	0
E 2307	Glues and Adhesives	0	0	0
E 2329	Calcium Hypo Chlorite, (STB)	0	0	0
E 3120	Paint, Free of Halog. Solvents	0	0	0
E 3133	Printing Products, Toner	0	0	0
E 3140	Rubbers and Tires	0	0	0
E 3704	Photographic Waste	0	0	0
E 3907	Oil Contaminated Solids	1 x 7 m <sup>3</sup> Mulde	1 x 10 m <sup>3</sup> Mulde	1 x 10 m <sup>3</sup> Mulde
E 3919	Filters, Oil Contaminated	2 x 1,1 m <sup>3</sup>	2 x 1,1 m <sup>3</sup>	1 x 1,1 m <sup>3</sup>
E 3927	Fuels, Contaminated	0	1 x IBC 800 liquid	1 x IBC 800 liquid
E 3943	Brake Fluid	0	1 x 120   KSPR	0
E 3951	Mixed Petroleum	0	0	0
E 3966	Grease	0	0	0
E 4506	Aerosol Cans	0	1 x 120   KSPR	0
E 4566	Non Halogenated Solvents	0	0	0
E 5622	Asbestos Bearing Items	0	0	0
E 5633	PCP, Treated Wood	0	0	0
E 6089	Metal, Contaminated	1 x 10 m <sup>3</sup> Mulde	1 x 10 m <sup>3</sup> Mulde	1 x 10 m <sup>3</sup> Mulde
E 8006	Fine Chemicals	0	0	0

**CONTAINERS FOR COLLECTION OF HAZARDOUS WASTE**

**SOUTH CAMP VILSECK**

HIN	WASTE	Bldg. # 640	Bldg. # 630 A	Bldg. # 630 B
E 0501	Batteries, Lithium	1 x 60   KSPR	0	0
E 0502	Batteries, Magnesium	1 x 60   KSPR	0	0
E 0503	Batteries, Nickel Cadmium	0	0	0
E 0505	Dry Cell Batteries	1 x 120   KSPR	0	0
E 0508	Batteries, Lead Acid	0	1xASK 600/P3 Box	0
E 0644	Cartridges, diesel starter	0	1 x 120   KSPR	0
E 1914	DS-2, Decontaminating Agent	0	0	0
E 2006	Mercury a. M. Cont. Items	0	0	0
E 2025	Activated Carbon	0	0	0
E 2038	Antifreeze	2 x 200   MSPL	1 x 200   MSPL	1 x IBC 1060 liquid
E 2145	Fluorescent Light Tubes	0	0	0
E 2307	Glues and Adhesives	0	0	0
E 2329	Calcium Hypo Chlorite, (STB)	0	0	0
E 3120	Paint, Free of Halog. Solvents	0	1 x 120   KSPR	0
E 3133	Printing Products, Toner	0	0	0
E 3140	Rubbers and Tires	0	0	0
E 3704	Photographic Waste	0	0	0
E 3907	Oil Contaminated Solids	1 x 7 m <sup>3</sup> Mulde	1 x 7 m <sup>3</sup> Mulde	2 x 1,1 m <sup>3</sup>
E 3919	Filters, Oil Contaminated	1 x 1,1 m <sup>3</sup>	1 x 200   MSPL	2 x 200   MSPL
E 3927	Fuels, Contaminated	1 x IBC 800 liquid	1 x 200   MSPL	1 x IBC 800 liquid
E 3943	Brake Fluid	1 x IBC 240 liquid	0	1 x 60   KSPR
E 3951	Mixed Petroleum	3 x 200   MSPL	0	0
E 3966	Grease	0	1 x 60   KSPR	0
E 4506	Aerosol Cans	0	1 x 120   KSPR	0
E 4566	Non Halogenated Solvents	0	0	0
E 5622	Asbestos Bearing Items	0	0	0
E 5633	PCP, Treated Wood	0	0	0
E 6089	Metal, Contaminated	1 x 10 m <sup>3</sup> Mulde	2 x 1,1 m <sup>3</sup>	2 x 1,1 m <sup>3</sup>
E 8006	Fine Chemicals	0	0	0

**CONTAINERS FOR COLLECTION OF HAZARDOUS WASTE**

**SOUTH CAMP VILSECK**

HIN	WASTE	Bldg. # 622	Bldg. # 359	Bldg. # 330
E 0501	Batteries, Lithium	0	0	0
E 0502	Batteries, Magnesium	0	0	0
E 0503	Batteries, Nickel Cadmium	0	0	0
E 0505	Dry Cell Batteries	0	0	0
E 0508	Batteries, Lead Acid	0	0	0
E 0644	Cartridges, diesel starter	0	0	0
E 1914	DS-2, Decontaminating Agent	0	0	0
E 2006	Mercury a. M. Cont. Items	0	0	0
E 2025	Activated Carbon	0	0	0
E 2038	Antifreeze	0	1 x 200   MSPL	0
E 2145	Fluorescent Light Tubes	0	0	0
E 2307	Glues and Adhesives	0	0	0
E 2329	Calcium Hypo Chlorite, (STB)	0	0	0
E 3120	Paint, Free of Halog. Solvents	0	0	0
E 3133	Printing Products, Toner	0	0	0
E 3140	Rubbers and Tires	0	0	0
E 3704	Photographic Waste	0	0	0
E 3907	Oil Contaminated Solids	1 x 1,1 m <sup>3</sup>	2 x 1,1 m <sup>3</sup>	1 x 1,1 m <sup>3</sup>
E 3919	Filters, Oil Contaminated	0	0	1 x 120   KSPR
E 3927	Fuels, Contaminated	0	1 x 120   KSPR	1 x 120   KSPR
E 3943	Brake Fluid	0	0	0
E 3951	Mixed Petroleum	0	0	0
E 3966	Grease	0	0	0
E 4506	Aerosol Cans	0	1 x 120   KSPR	1 x 120   KSPR
E 4566	Non Halogenated Solvents	0	0	0
E 5622	Asbestos Bearing Items	0	0	0
E 5633	PCP, Treated Wood	0	0	0
E 6089	Metal, Contaminated	1 x 1,1 m <sup>3</sup>	1 x 1,1 m <sup>3</sup>	1 x 1,1 m <sup>3</sup>
E 8006	Fine Chemicals	0	0	0

**CONTAINERS FOR COLLECTION OF HAZARDOUS WASTE**

**SOUTH CAMP VILSECK**

HIN	WASTE	Bldg. # 310	Bldg. # 201	Bldg. # 142-144
E 0501	Batteries, Lithium	0	0	0
E 0502	Batteries, Magnesium	1 x 60   KSPR	0	0
E 0503	Batteries, Nickel Cadmium	0	0	0
E 0505	Dry Cell Batteries	0	0	2 x 60   KSPR
E 0508	Batteries, Lead Acid	1xASK 600/P3 Box	0	1xASK 600/P3 Box
E 0644	Cartridges, diesel starter	0	0	0
E 1914	DS-2, Decontaminating Agent	0	0	0
E 2006	Mercury a. M. Cont. Items	0	0	0
E 2025	Activated Carbon	0	0	0
E 2038	Antifreeze	0	0	0
E 2145	Fluorescent Light Tubes	0	0	2xLSC,2x120   KSPR
E 2307	Glues and Adhesives	0	0	0
E 2329	Calcium Hypo Chlorite, (STB)	0	0	0
E 3120	Paint, Free of Halog. Solvents	0	0	1 x 7 m <sup>3</sup> Mulde
E 3133	Printing Products, Toner	0	0	0
E 3140	Rubbers and Tires	0	0	0
E 3704	Photographic Waste	0	0	0
E 3907	Oil Contaminated Solids	3 x 1,1m <sup>3</sup>	2 x 1,1 m <sup>3</sup>	2 x 1,1 m <sup>3</sup>
E 3919	Filters, Oil Contaminated	1 x 200   MSPR	0	2 x 200   MSPR
E 3927	Fuels, Contaminated	0	0	0
E 3943	Brake Fluid	1 x 60   KSPR	0	0
E 3951	Mixed Petroleum	0	0	0
E 3966	Grease	0	0	0
E 4506	Aerosol Cans	1 x 120   KSPR	0	1 x 120   KSPR
E 4566	Non Halogenated Solvents	0	0	0
E 5622	Asbestos Bearing Items	0	0	0
E 5633	PCP, Treated Wood	0	0	0
E 6089	Metal, Contaminated	3 x 1,1 m <sup>3</sup>	0	1 x 1,1 m <sup>3</sup>
E 8006	Fine Chemicals	0	0	0

**CONTAINERS FOR COLLECTION OF HAZARDOUS WASTE**
**SOUTH CAMP VILSECK**

HIN	WASTE	Bldg. # 124	Bldg. # 113-121	Bldg. # ASP 1
E 0501	Batteries, Lithium	10 x 60   KSPR	1 x 60   KSPR	0
E 0502	Batteries, Magnesium	5 x 60   KSPR	1 x 60   KSPR	0
E 0503	Batteries, Nickel Cadmium	5 x 60   KSPR	1 x 60   KSPR	0
E 0505	Dry Cell Batteries	5 x 120   KSPR	1 x 60   KSPR	0
E 0508	Batteries, Lead Acid	0	11xASK 600/P3 Box	0
E 0644	Cartridges, diesel starter	2 x 120   KSPR	0	0
E 1914	DS-2, Decontaminating Agent	0	1 x 120   KSPR	0
E 2006	Mercury a. M. Cont. Items	1 x 120   KSPR	0	0
E 2025	Activated Carbon	1 x 120   KSPR	0	0
E 2038	Antifreeze	0	0	0
E 2145	Fluorescent Light Tubes	1xLSC,2x120   KSPR	0	0
E 2307	Glues and Adhesives	1 x 120   KSPR	0	0
E 2329	Calcium Hypo Chlorite, (STB)	4 x 120   KSPR	0	0
E 3120	Paint, Free of Halog. Solvents	2 x IBC 800 solid	3 x 120   KSPR	1 x 7 m <sup>3</sup> Mulde
E 3133	Printing Products, Toner	1 x 120   KSPR	0	0
E 3140	Rubbers and Tires	0	0	0
E 3704	Photographic Waste	0	0	0
E 3907	Oil Contaminated Solids	0	1 x 1,1 m <sup>3</sup>	0
E 3919	Filters, Oil Contaminated	10 x 200   MSPR	0	0
E 3927	Fuels, Contaminated	0	0	0
E 3943	Brake Fluid	0	0	0
E 3951	Mixed Petroleum	0	0	0
E 3966	Grease	2 x IBC 800 solid	0	0
E 4506	Aerosol Cans	10 x 120   KSPR	0	0
E 4566	Non Halogenated Solvents	0	0	0
E 5622	Asbestos Bearing Items	0	1 x 60   KSPR	0
E 5633	PCP, Treated Wood	0	0	2 x 36 m <sup>3</sup> Abroller
E 6089	Metal, Contaminated	1 x 7 m <sup>3</sup> Mulde	1 x 1,1 m <sup>3</sup>	0
E 8006	Fine Chemicals	1 x 120   KSPR	0	0

**CONTAINERS FOR COLLECTION OF HAZARDOUS WASTE**

**SOUTH CAMP VILSECK**

HIN	WASTE	Recycling Center	AAFES Bldg. # 718	AAFES Bldg. # 2206
E 0501	Batteries, Lithium	0	0	0
E 0502	Batteries, Magnesium	0	0	0
E 0503	Batteries, Nickel Cadmium	0	0	0
E 0505	Dry Cell Batteries	0	0	0
E 0508	Batteries, Lead Acid	1xASK 600/P3 Box	2xASK 600/P3 Box	0
E 0644	Cartridges, diesel starter	0	0	0
E 1914	DS-2, Decontaminating Agent	0	0	0
E 2006	Mercury a. M. Cont. Items	0	0	0
E 2025	Activated Carbon	0	0	0
E 2038	Antifreeze	0	4 x 200 l MSPL	0
E 2145	Fluorescent Light Tubes	0	0	0
E 2307	Glues and Adhesives	0	0	0
E 2329	Calcium Hypo Chlorite, (STB)	0	0	0
E 3120	Paint, Free of Halog. Solvents	0	0	0
E 3133	Printing Products, Toner	0	0	0
E 3140	Rubbers and Tires	0	3 x P2 Box	0
E 3704	Photographic Waste	0	0	0
E 3907	Oil Contaminated Solids	0	1 x 7 m <sup>3</sup> Mulde	3 x 1,1 m <sup>3</sup>
E 3919	Filters, Oil Contaminated	0	4 x 200 l MSPR	0
E 3927	Fuels, Contaminated	0	0	0
E 3943	Brake Fluid	0	2 x 30 l Kanister	0
E 3951	Mixed Petroleum	0	0	0
E 3966	Grease	0	0	0
E 4506	Aerosol Cans	0	2 x 120 l KSPR	0
E 4566	Non Halogenated Solvents	0	0	0
E 5622	Asbestos Bearing Items	0	2 x 120 l KSPR	0
E 5633	PCP, Treated Wood	0	0	0
E 6089	Metal, Contaminated	0	0	0
E 8006	Fine Chemicals	0	0	0

INCIDENT REPORT FORM

REPORT DATE \_\_\_\_\_ PERSON REPORTING \_\_\_\_\_

REPORT TIME \_\_\_\_\_ OFFICE \_\_\_\_\_

INCIDENT AREA:

- (1) Training Area      (2) Cantonment      (3) Garrison      (4) Off Post

LOCATION: Map Coordinates (Required) \_\_\_\_\_

Bldg/Landmark \_\_\_\_\_

Date Incident Occurred \_\_\_\_\_ Time \_\_\_\_\_

Reported by \_\_\_\_\_ Unit/Organization \_\_\_\_\_

Responsible Unit POC \_\_\_\_\_ Local Telephone \_\_\_\_\_

Unit \_\_\_\_\_ Home Station \_\_\_\_\_

APO \_\_\_\_\_ Unit ID Code \_\_\_\_\_

Home Station Telephone \_\_\_\_\_

HAZARDOUS SUBSTANCE INCIDENT TYPE

- |                       |                        |                      |
|-----------------------|------------------------|----------------------|
| (01) Engine Oil       | (02) Fuels             | (03) Antifreeze      |
| (04) Trans. Fluid     | (05) Brake Fluid       | (06) Hydraulic Fluid |
| (07) Greases          | (08) Alcohols          | (09) Acids           |
| (10) Solvents         | (11) Insect/Pesticides | (12) Decon. Agents   |
| (13) Compressed Gas   | (14) Paints/Varnish    | (15) Paint Thinners  |
| (16) Sealers/Adhesive | (17) Cleaners          | (18) Film Proc. Chem |
| (19) Misc. Chemicals  | (20) Misc. Materials   | (21) _____           |

INCIDENT SIZE (Spills/Solid Waste)

- (1) Small (1-5 gal)
- (2) Medium (5-25 gal)
- (3) Medium large (26-50 gal)
- (4) Large (51-100 gal)
- (5) Extra Large (over 100 gal)

INCIDENT DESCRIPTION

Description of site (e.g. paved road, gravel, forest)

Cause(s) or Probable Cause(s)                      Injuries/Casualties

Description of Incident (what happened and why)

**RESPONSE**

Response Date \_\_\_\_\_ Response Time Out \_\_\_\_\_ In \_\_\_\_\_

Vehicle(s) Used to Respond \_\_\_\_\_

Mileage: Vehicle \_\_\_\_\_, Out \_\_\_\_\_ In \_\_\_\_\_ / Vehicle \_\_\_\_\_ Out \_\_\_\_\_ In \_\_\_\_\_

Personnel Responding \_\_\_\_\_

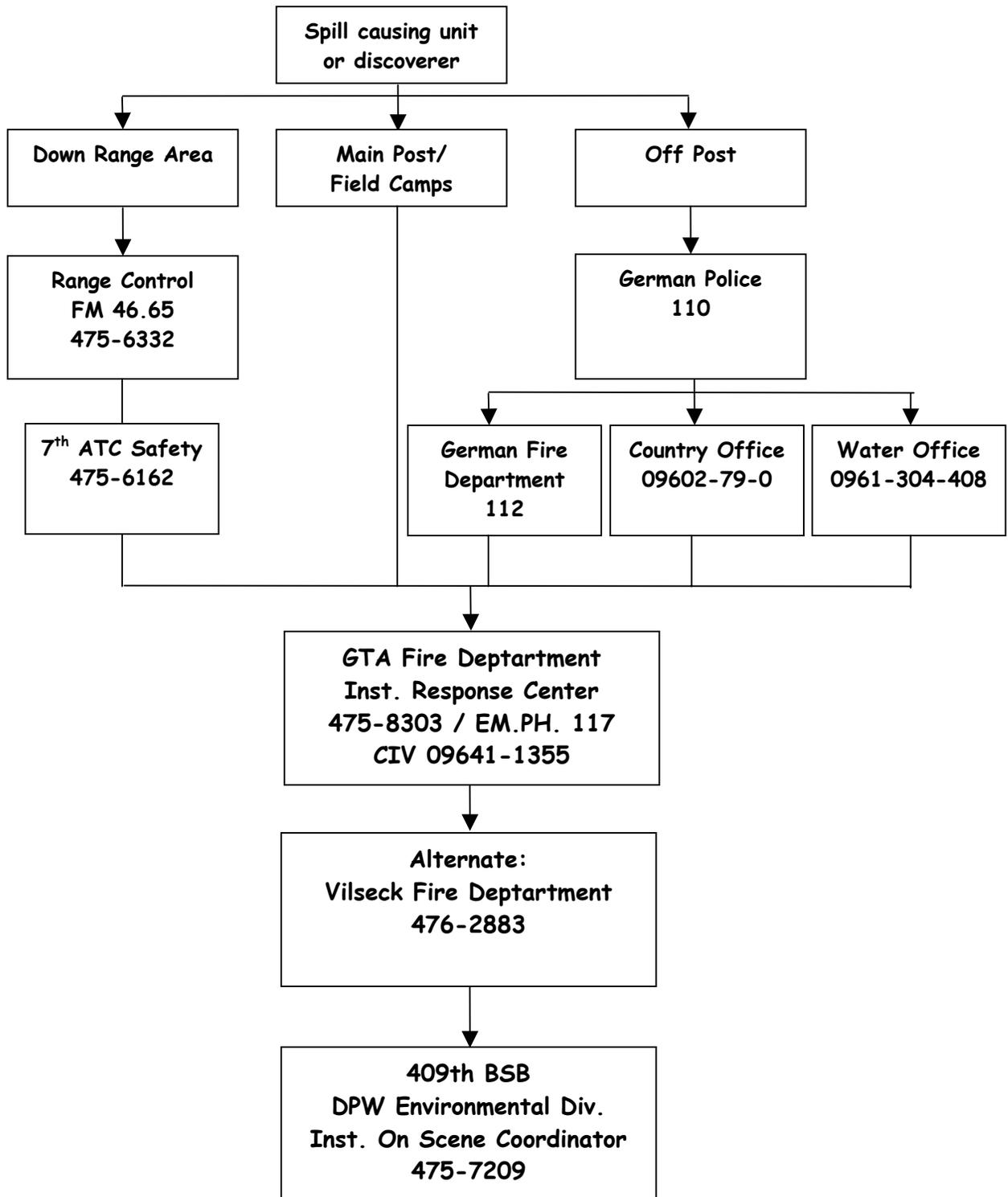
Equipment or supplies required (e.g. bags of oil absorbant)

**PROBLEMS ENCOUNTERED**

**RECOMMENDATIONS**

Appendix J

**Initial Spill Response and Notification**



## Initial Spill Response and Notification

