USACERL Special Report 97/112 August 1997



US Army Corps of Engineers Construction Engineering Research Laboratories



Environmental Compliance Assessment and Management Program (ECAMP)

Republic of Turkey

The number of environmental laws and regulations continues to grow in the United States and throughout the world, making compliance with regulations increasingly difficult. Environmental assessments became a way to evaluate compliance with current regulations. The Air Force has adopted a compliance program that identifies problems before they are cited as violations by regulatory agencies.

Beginning in 1984, the U.S. Army Construction Engineering Research Laboratories (USACERL), in cooperation with the Air Force Engineering and Services Center, began research on the Environmental Compliance Assessment and Management Program (ECAMP). The concept was to combine Federal, Department of Defense (DOD), and Air Force environmental regulations with good management practices and risk management issues into a series of checklists that show legal requirements and which specific items or operations to review. Each assessment protocol lists a point of contact to help assessors review the checklists as effectively as possible.

The Environmental Compliance Assessment and Management Program--Turkey is based on the "Standards Governing Environmental Environmental Protection for U.S. Installations in the Republic of Turkey," published by Headquarters, United States Air Force, Europe, in March 1994. Turkey ECAMP includes pertinent information from Air Force Instructions, DOD Directives and Instructions, and cited good management practices.

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FOREWORD

The research was performed for the Headquarters, United States Air Force, Europe (HQ USAFE), under Military Interdepartmental Purchase Request (MIPR) number NL96-256, dated 3 April 1996. The HQ USAFE technical monitor was CAPT Neil Arnold, HQ USAFE/CEV.

The research was performed by the Planning and Management Laboratory, Environmental Processes Division (PL-N), of the U.S. Army Construction Engineering Research Laboratories (USACERL). The Principal Investigator was Dr. David A. Krooks, PL-N. Mr. L. Jerome Benson is Acting Division Chief, PL-N.

Dr. Michael J. O'Connor is Director of USACERL.

NOTICE

This manual is intended as general guidance for personnel at Air Force (AF) facilities. It is not, nor is it intended to be, a complete treatise on environmental laws and regulations. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information contained herein. For any specific questions about, or interpretations of, the legal references herein, consult appropriate counsel.

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MANUAL OBJECTIVES AND ORGANIZATION

This manual provides the Environmental Compliance Assessment and Management Program (ECAMP) assessment checklists to be used during an ECAMP assessment. These environmental assessment checklists are based on the *Environmental Final Governing Standards--Turkey* (FGS-Turkey), 1 March 1994. This manual serves as the primary tool in conducting the environmental compliance assessment phase of the ECAMP process. Specifically, this manual:

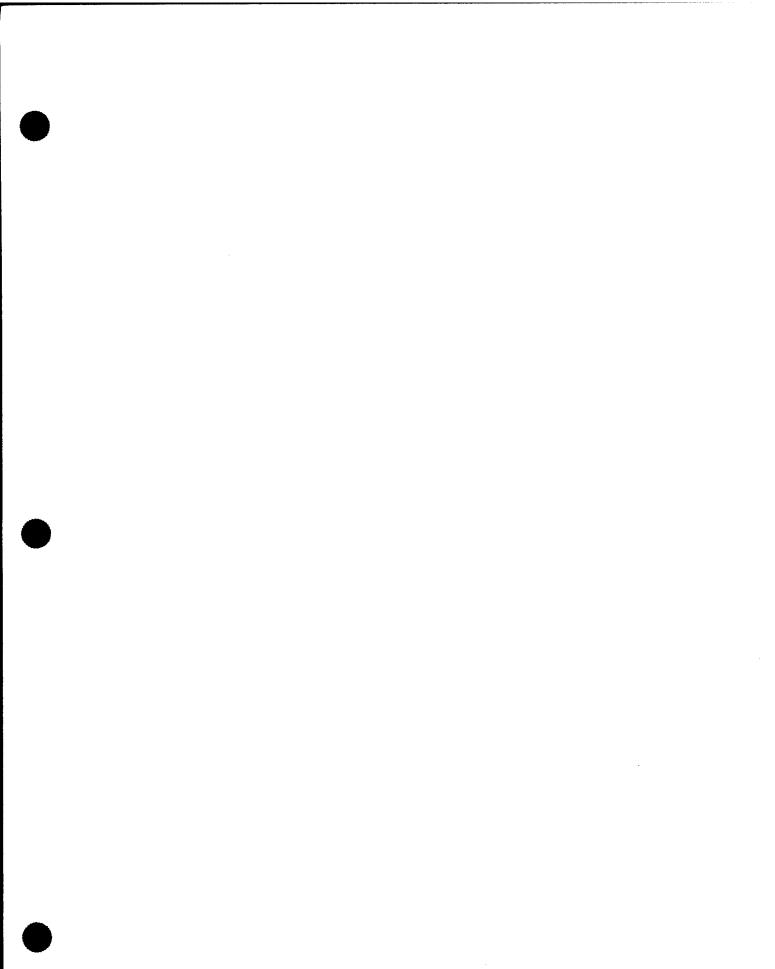
- 1. compiles applicable Department of Defense (DOD) and AF environmental regulations and instructions with AF operations and activities
- 2. synthesizes environmental regulations, management practices (MPs), and risk management issues into consistent and easy to use checklists
- 3. serves as an aid in the assessment process and the management action development phases of the ECAMP.

This manual is divided into 13 sections. General ECAMP guidance and information applicable to all 13 compliance assessment checklists in the ECAMP manual can be found in the Main Introduction. Sections 1 through 13 contain the specific environmental compliance guidelines and checklists for each of the 13 compliance categories:

Air Emissions Management Cultural Resources Management Hazardous Materials Management Hazardous Waste Management Natural Resources Management Other Environmental Issues Pesticide Management Petroleum, Oil, and Lubricant (POL) Management Solid Waste Management Storage Tank Management Toxic Substances Management Wastewater Management Water Quality Management.

This manual contains references to existing Air Force Regulations (AFRs), Air Force Policy Directives (AFPDs), Air Force Manuals (AFMs), and Air Force Pamphlets (AFPs). The AF is in the process of replacing AFRs with Air Force Instructions (AFIs). This ECAMP manual contains references to a combination of the above. References to AFRs will be replaced with applicable citations in the next version of the manual. HQ USAF/CEV will issue interim guidance as the new policies and regulations are approved.

The AFIs included in the manual are up-to-date through Air Force Index 2, Numerical Index of Standard and Recurring Air Force Publications, 1 August 1996 (for the period ending 19 July 1996).



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PROGRAM BACKGROUND

The ECAMP is explained in AFI 32-7045, *Environmental Compliance Assessment and Management Pro*gram (ECAMP). The primary objectives of ECAMP are:

- 1. improve AF environmental management
- 2. improve AF environmental compliance and compliance management
- 3. build supporting financial programs and budgets for environmental compliance requirements
- 4. ensure that Major Commands (MAJCOMs) are effectively addressing past, present, and future environmental concerns.

AF installations, support sites, and government-owned contractor-operated (GOCO) facilities are required to receive an external environmental compliance assessment at least once every 3 yr. Each installation and support site must conduct an internal assessment each calendar year, except in years when external assessments are conducted.

Facilities can be exempted from the ECAMP if their inclusion in the program will significantly interfere with their military effectiveness or if it is otherwise in the national interest. Approval authority for such exemptions is the Deputy Assistant Secretary of the Air Force for Environment, Safety, and Occupational Health (SAF/MIQ). The MAJCOM Environmental Protection Committee (EPC) will prepare requests for exemption and forward to HQ USAF/CEV for action.



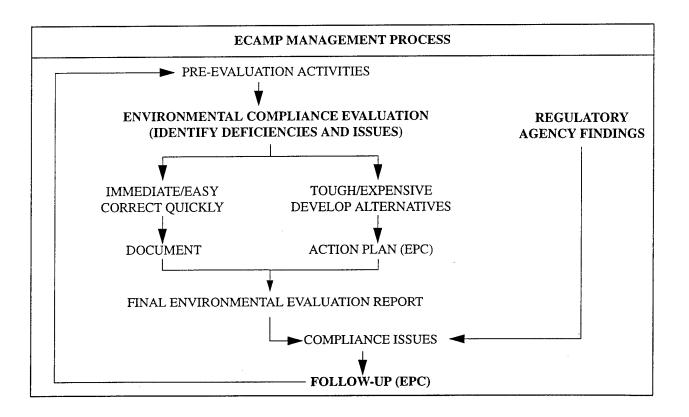
ECAMP PROGRAM MANAGEMENT PROCESS

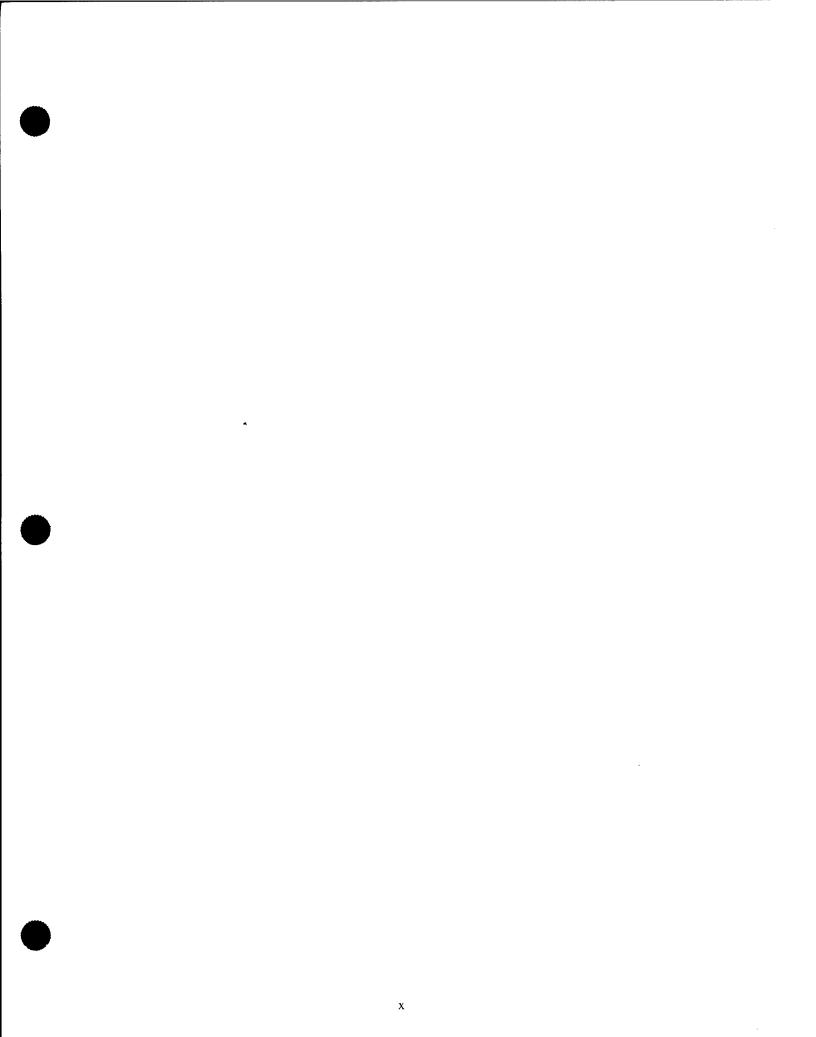
The ECAMP program management process begins with the environmental compliance assessment and written report that identifies compliance and management issues. The commander, through the EPC, then assigns appropriate staff agencies to work each issue.

ECAMP Action Summary - The path illustrated on the far left of the flowchart represents the process the installation follows in resolving most issues. Immediate hazards should, of course, be addressed as quickly as possible. The procedural, easy-to-fix issues, are corrected during the assessment process and documented in the report.

The path in the center, for the tough and expensive issues, includes preparing a management action plan describing how these problems will be addressed.

Formal notices of noncompliance issued by regulatory agencies are represented by the path on the far right. Open notices of noncompliance at the time of the assessment are included in the ECAMP assessment and report. Notices of noncompliance issued after the date of the ECAMP assessment do not appear in the report, but are managed by the installation EPC along with ECAMP issues.





ECAMP ABROAD

AFI 32-7006, *Environmental Program in Foreign Countries*, 29 April 1994, details the objectives, background, and standards unique to AF environmental activities in foreign countries. It requires that installations comply with the DOD Final Governing Standards (FGSs) issued for the particular host country where each installation is located.

The instruction acknowledges, however, that FGS have not yet been issued for all countries in which the AF has installations. In instances where the FGS have not been completed, installations must comply with the requirements of the *Overseas Environmental Baseline Guidance Document* (OEBGD), but only after ensuring that the criteria in it do not conflict with any applicable international agreements such as treaties, status of forces agreements (SOFAs), or bilateral agreements. This manual is based on FGS-Turkey, 1 March 1994.

Those few installations and facilities located in foreign countries for which environmental executive agents (EEAs) have not been assigned to prepare the FGS must comply with the criteria in the OEBGD, but only after ensuring that the criteria in it do not conflict with any applicable international agreements such as treaties, SOFAs, or bilateral agreements. The Worldwide ECAMP manual is used in these cases as well. When an EEA is assigned and the FGS prepared, the FGS will supersede the use of the OEBGD.

As the sole compliance standards at installations and facilities in foreign countries, the FGS (or the OEBGD under the conditions discussed above) takes precedence over compliance with AF environmental instructions specified as not required in Attachment 2 to AFI 32-7006. Compliance with instructions so designated in the attachment is not required. Compliance with the AFIs specified as "required" is mandatory, but only after ensuring that their requirements do not conflict with the provisions of the FGS (or the OEBGD) or with any applicable international agreements such as treaties, SOFAs, or bilateral agreements. The following AFIs specified as "required" in AFI 32-7006 are included in this manual:

32-7001 - Environmental Budgeting
32-7002 - Environmental Information Management System
32-7005 - Environmental Protection Committees
32-7045 - Environmental Compliance Assessment and Management Program
32-7061 - Environmental Impact Analysis Process
32-7080 - Pollution Prevention Programs.

It should be noted that only those requirements that are based on the FGS are eligible for funding with environmental compliance monies.



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ENVIRONMENTAL COMPLIANCE ASSESSMENT PROCESS

The ECAMP program management process described previously can be divided into three distinct phases:

- 1. pre-assessment activities
- 2. site assessment activities
- 3. post-assessment activities.

Pre-assessment Activities - Five key activities should be completed before an assessment team begins the site assessment.

- 1. Previsit Questionnaire The purpose of the previsit questionnaire is to collect information that will familiarize the assessment team with the installation and its operations so that its assessment team is able to review the applicable regulations and prepare a detailed assessment schedule. The previsit questionnaire is essential as part of the pre-assessment activities for an external assessment. It is also an excellent tool for ensuring internal assessment team members are starting from the same base of information. Table 1 (see page xlv) contains a sample previsit questionnaire.
- 2. Define Assessment Scope and Team Responsibilities The installation or MAJCOM may wish to place special emphasis on certain compliance categories or to review additional areas not covered in the volumes. These goals should be clearly stated so the assessment can be properly planned. Additionally, the duration of the assessment, appointment of team members by the EPC, and handling of tenants and offbase sites should be addressed. Typical teams include members from personnel, and may include: Environmental Coordinator (EC), Bioenvironmental Engineering Services (BES), Judge Advocate (JA), Ground Supply Officer, Supply, Maintenance, Transportation, Defense Reutilization and Marketing Office (DRMO), Base Civil Engineer (BCE) Water and Waste Superintendent, BCE (Contract Management), BCE (Natural Resources Manager), BCE (Fire Department), BCE (Engineering Design); or, if contracted, people with equivalent varied experience may be chosen. Assessors should possess a good working knowledge of the various environmental pollution statutes and regulations. Collectively, the team must have the knowledge and background required to conduct all aspects of an installation assessment efficiently and effectively. Team members should also understand appropriate techniques for collecting information and interviewing installation personnel. Team members should have received formal training or received oversight from someone who has received formal training. Finally, responsibilities for each of the checklists should be assigned to the team members as appropriate.

Table 2 (see page lxxiii) lists the major environmental operations and activities at typical AF installations and the sections within which they are addressed. As shown, many activities and operations cause environmental impacts in more than one area, and are, therefore, addressed in more than one section.

 Review Relevant Regulations - Once the assessment scope and responsibilities are known, the assessors should undertake a thorough review of the regulations relevant to the installation. Which environmental regulations are applicable must be determined before the assessment begins.

- 4. Develop Assessment Schedule The team should develop a detailed assessment schedule that includes the activities planned for each day.
- 5. Review Assessment Protocols Each assessor should know the regulatory requirements and be familiar with the assessment checklists that will be used.

Site Assessment Activities - Onsite, the assessors will conduct record searches, interviews, and site surveys to determine the compliance status of the installation. Operations are compared with environmental standards and any deficiencies are written up as findings. The data collected should be sufficient, reliable, and relevant to provide a sound basis for assessment findings and recommendations. Figure 1 (see page xv), the ECAMP Finding Form, is available to assist assessors in compiling needed information during an ECAMP assessment. A Finding Form should be completed for each finding during the assessment. These forms comprise the basis of the ECAMP report. Figure 1 is based on the future version of the finding screen layout on the Work Information Management System - Environmental Subsystem (WIMS-ES).

On the following pages, the reader will find an ECAMP Finding Form, an explanation of the fields it contains, and an example ECAMP Finding Form that has been properly filled out.

(NOTE: Any findings discovered through the use of this guidance manual by the internal assessment should be validated by the environmental coordinator and Judge Advocate. The findings and corrective actions should be recorded in the EPC minutes.)

Post-Assessment Activities. The first step in the post-assessment activities is the creation of the draft report. The MAJCOM EPC will ensure that each installation reviews and comments on the Preliminary Environmental Findings, develops a management action plan that addresses all unresolved findings; and tracks each significant, major, and minor noncompliance finding. The MAJCOM EPC will coordinate the development of a management action plan, the Draft Final Environmental Compliance Assessment Report, and the Final Environmental Compliance Assessment Report within 120 days of the site assessment. Upon approval, the MAJCOM will forward the final report to HQ USAF/CEV and the Air Force Center for Environmental Excellence (AFCEE)/EP via the WIMS-ES.

Figure 1

ECAMP Finding Form

Date of Finding		Protocol	Finding #	
Rating	Repeat Finding?	Est Comp Date		
			e	
Street Address			, <u>, , , , , , , , , , , , , , , , , , </u>	
Grid Coordinates				
Facility #	Location			
Finding Title				
Details				
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Figure 1 (continued)

ECAMP Finding Form

Question Number			A-106 Me	dia		
Responsible Organization _			Org Type			
-						
-						
CFR Citation						
Other Criteria						Nef for
	* Explain					
Root Cause	• Explain					
Violation Type	Finding ID		Finding	Туре	Source	
Owning Org POC		_ Off Sym _		Phone	Ext	
Env Mgt Org POC		Off Sym		Phone	Ext	
Suggested Solution						
				1.07.000-000		
		<u></u>				
A-106 Proj #	Est Cost \$				······	

Definitions for ECAMP Finding Form

(NOTE: The following fields, which are included on the ECAMP Finding Form are not in the current version of the software, but this form can be used to assist with data entry in the current version: Repeat Finding; Grid Coordinates; Street Address; Organization Type; Code of Federal Regulations (CFR) Citation; Other Criteria; Root Cause; additional two entries for Violation Type; additional two entries for Finding Identification (ID); Suggested Solution.)

- 1. **Date of Finding**: Enter the date the finding was discovered. This is the exact date the finding was discovered. Try to avoid using the same date for all findings. YYYY MM DD (Convert "Finding Date").
- 2. **Protocol**: Using the selector, choose the protocol for the finding.

Air
Hazardous Materials
Hazardous Waste
Nat/Cul Resources
Noise
Pesticide
Petroleum, Oil, and Lubricant (POL)
Solid Waste
Special Programs (Polychlorinated Biphenyls (PCBs), Asbestos, Radon Mitigation,
Installation Restoration Program (IRP), A-106 Pollution Abatement Plan, Environmental
Impact Analysis Process (EIAP), Work Information Management System-Environmental
Subsystem (WIMS-ES), and Lead-based Paint (LBP))
Water Quality
Pollution Prevention

- 3. **Finding Number**: This field indicates the placement of this finding in the report. It may have nothing to do with its priority or status, depending on the philosophy of the program manager. Each protocol has its own set of numbers. In other words, you can have an HW-001 and an AIR-001.
- 4. Rating:

Significant Major Minor Management Practice Positive

- 5. **Repeat?**: Identify with a "Y" if this finding is a repeat finding. Has there been a finding documented in a prior ECAMP identical to this finding? If not, enter "N".
- 6. Estimated Compliance Date (ECD): What is the YYYY MM DD that this finding will be brought into compliance?
- 7. Actual Compliance: If the finding is brought into compliance during the evaluation, enter that date.

- 8. At least one of the following three must be completed. If more information is known, it should be entered.
 - a. Street Address: Enter the street/mailing address for the location of this finding.
 - b. Grid Coord: Enter the grid coordinated for the location of the finding. This is optional.
 - c. Facility Number: Enter the facility number for the location of the finding.
- 9. Location Description: Use this field if facility number or street address is not applicable. Briefly describe the location of the finding.
- 10. Finding Title: Enter a brief, descriptive title for the finding (up to 51 characters).
- 11. **Details**: Enter a detailed description of the finding (up to 726 characters). State what is wrong, how the process or procedures are being done now, and how long is has been under way. State exactly how the AF is out of compliance. Be concise, objective, and strictly factual. Do not be subjective. Do not make inflammatory remarks.
- 12. Question #: This is the question number from the ECAMP manual. The first three characters are entered automatically by the system. Enter the question number from the manual (enter the main paragraph number only, no periods or dashes required).
- 13. A-106 Media: Choose the A-106 media that best matches the finding condition.
 - AT Atomic Energy
 - CA Clean Air Act
 - CW Clean Water Act
 - ES Endangered Species Act
 - FF Federal Insecticide/Fungicide/Rodenticide Act
 - HP Historic Preservation
 - MU Multi-Media
 - NC Noise Control
 - NE National Environment Policy Act
 - RC Resources Conservation and Recovery Act
 - SD Safe Drinking Water Act
 - SF Comprehensive Environmental Response, Compensation, and Liability Act
 - TS Toxic Substance Control Act
- 14. **Responsible Organization**: Enter the organizations that "caused" the finding. You can enter up to three organizations. This is the "who done it" data field that can be used for trend analysis to find organizations that need additional training, equipment, manpower, etc.
- 15. Organization Type: For each organization, identify the appropriate type code.

Academic	Academic
AC Maint	Aircraft maintenance
AC Clean	Cleaning/degreasing aircraft parts
AC Storage	Aircraft storage, ramp, parking, etc.
AC Wash	Aircraft washrack

	A second second (ACE) stores and/or remain
AGE Repair	Aerospace ground equipment (AGE) storage and/or repair
Alert	Transient alert
Arts	Arts and crafts
Auto Body Audio	Auto hobby Audiovisual services
Avionics	Aircraft avionics maintenance
Base Svc	Base service station
Bio	Bioenvironmental Engineering
Bulk Fuels	Bulk fuels management
BX	Base exchange
Childcare	Childcare center
Clean/Deg	Cleaning and degreasing (not aircraft)
CE Maint	Civil Engineering maintenance shop
CE Maint CE Mat	Civil Engineering material control
CE Mat CE Self	Civil Engineering self-help store
	· · · ·
Cmmssry	Commissary Communications maintenance
Comm Maint	Dental clinic
Dental DRMO	
Elect/Env	DRMO treatment, storage, and disposal facility (TSDF) Electro/environmental
	Entomology shop
Entomology EOD	Explosive ordnance disposal
EOD Env Mgt	Environmental management
Fire Dept	Fire department
Golf	Golf course
Heat Plnt	Heat plant
Hvy Equip	Heavy equipment maintenance/storage
Hospital	Hospital/clinic
Housing	Housing maintenance
Hyd/Pneu	Hydraulics/Pneudraulics
IWTP	Industrial wastewater treatment plant
Landfill	Landfill
Off Bldg	Business offices (Consolidated Base Personnel Office(CBPO), banks, etc.)
Other	Other, any other not listed
Rsrch Lab	Research laboratory
Supply	Base supply
Swim	Swimming pool
Test Cell	Engine test cell
TSD	Base TSDF
Veh Maint	Vehicle maintenance/storage
Veh Wash	Vehicle washrack
Vet Clinic	Veterinary clinic
WWTP	Wastewater treatment plant

16. CFR Citation: Enter the CFR citation for the finding.

17. Other Criteria: Enter all the laws, regulations, statutes, etc., other than the CFR citation, defining the out-of-compliance condition. You may also enter a brief description of that criterion (up to 192 characters).

18. Root Cause: Select the root cause that best reflects the basic reason for the out of compliance condition.

<u>Materials:</u>

M1 Supply

M2 Poor Quality

Personnel:

- P1 Awareness of Requirement
- P2 Understanding
- P3 Not conscientious (deals with attitude of personnel)
- P4 Result vs. Action (The result did not equal the action taken. Procedures were followed which should have produced a favorable result but did not.)
- P5 Accountability not assigned
- P6 Action vs. Procedure (correct procedure(s) in place but incorrect action taken)
- P7 Insufficient skills
- P8 Inexperience (not an attitude of personnel)

Equipment:

- E1 Controls failure
- E2 Inadequate facility design
- E3 Monitoring equipment failure
- E4 Poor maintenance

Techniques:

- T1 Time to do the job
- T2 No procedures in place
- T3 Priority conflict
- T4 Inadequate Procedures
- T5 Procedures not available
- 19. Explain the reason for your selection of Root Cause. Be specific and stick to the facts (up to 119 characters).

20. Violation Type: Choose the appropriate code(s) that best describe(s) the situation. You can enter up to three.

Administrative

- A1 Records
- A2 Labels
- A3 Reports
- A4 Manifests
- A5 Lack of a permit
- A6 Inadequate/missing plan
- A7 Public notification
- A8 Operator certification
- A9 Fire standard
- A10 Program planning
- A11 Sampling
- A12 training
- A13 Other
- A14 Registration
- A15 Uncharacterized
- A16 Lacking or incomplete inventory/survey

Potential Discharge

- P1 Operational practices
- P2 Inadequate facility
- P3 Inadequate equipment/containers
- P4 Other
- P5 No testing/verification
- P6 Containment

Discharge

- D1 Excess chemical parameter
- D2 Excess physical parameter
- D3 Groundwater contamination
- D4 Spills/leaks
- D5 Other

21. Finding Category Codes: Choose the appropriate code(s). You can enter up to three.

Air Emissions Management

- 1A Fuel Burners
- 1B Incinerators
- 1C Volatile Organics
- 1D Others
- 1E Ozone Depl Chems
- 1F Particulates/Bead Blast
- 1G Air Toxics, Metals
- 1H General Requirements

Hazardous Material Management

- 2A Storage Structures
- 2B Operations/Management
- 2C Others

Hazardous Waste Management

- 3A Accumulation Points
- 3B TSDFs
- 3C Training
- 3D Waste Minimization
- 3E Others
- 3F Oil/Water Separators
- 3G Satellite Accum Points
- 3H Operational Procedures

Natural/Cultural Resources Management

- 4A Wildlife/Recreation/Forestry
- 4B Cultural/Historic
- 4C Land/Agriculture
- 4D Wetlands/Floodplains
- 4E Others

Environmental Noise Management

- 5A Installation compatible use zone (ICUZ)
- 5B Procedures
- 5C Others

Pesticide Management

- 6A Facilities/Equipment
- 6B Operations/Mgt
- 6C Others

Petroleum, Oil, and Lubricant (POL) Mgt

- 7A Above Ground Tanks
- 7B Underground Tanks
- 7C Operations/Mgt

- 7D Others
- 7E Oil/Water Separators
- 7F Drum Storage

Solid Waste Management

- 8A Landfills
- 8B Receptacles
- 8C Recycling
- 8D Others
- 8E Medical Waste
- 8F Regulated Materials

Special Programs Management

- 9A PCBs
- 9B Asbestos
- 9C Radon Mitigation
- 9D Others
- 9E IRP
- 9F EIAP
- 9G A-106
- 9H ECAMP
- 9I Lead-Based Paint (LBP)
- 9J Low Level Radiation
- 9K Automation Issues

Water Quality Management

- 10A Sanitary Wastewater
- 10B Industrial Wastewater
- 10C Stormwater Runoff
- 10D Nonpoint Runoff
- 10E Operations
- 10F Others
- 10G Facilities/Equipment
- 10H Oil/Water Separators
- 10I Drinking Water

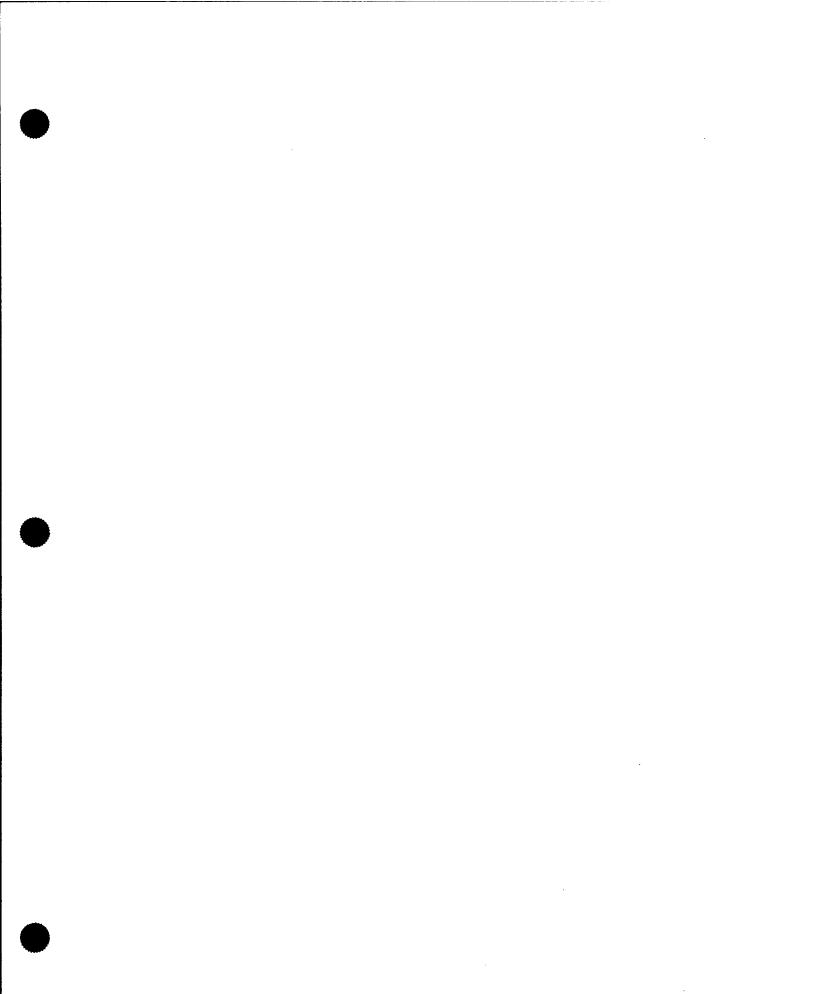
Pollution Prevention Management

- 11A Management Plans
- 11B Ozone depleting chemicals (ODCs)
- 11C EPA 17
- 11D Hazardous Waste Minimization
- 11E Recycling
- 11F Affirmative Procurement
- 11G Energy Conservation
- 11H Education and Training
- 111 Hazardous Material Control
- 11J Other

- 22. Finding Type: Choose the appropriate code.
- 23. Source: Choose the appropriate source for the definition of the noncompliance.

U.S. Protocols Worldwide Manual/Overseas Manual Installation Supplement to ECAMP Manual Command Supplement to ECAMP Manual Country Manual Country Supplement State Supplement Local Law/Ordinance

- 24. **Owning Organization Point of Contact (POC)**: Enter the name of the POC of the organization handling the fix.
- 25. Office Symbol: Enter the office symbol for the POC.
- 26. Phone and Extension: Enter the phone and extension for the POC.
- 27. Environmental Management POC: Enter the name of the POC within the Environmental Management Office (EMO) who is responsible for tracking this finding.
- 28. Office Symbol: Enter the office symbol for the POC.
- 29. Phone and Extension: Enter the phone and extension for the POC.
- 30. Evaluator's Suggested Solution: Enter the suggested solution for the evaluator. After validation, this is nonmodifiable (up to 308 characters).
- 31. A-106 Project #: If funding is already programmed for the fix, enter the A-106 project number, if available.
- 32. Estimated Cost: If the information is available, enter the estimated cost of the project.



Sample ECAMP Finding Form

Date of Finding		Protocol	Finding #
Rating		Est Comp Date	
Street Address			
Grid Coordinates			
Facility #	Location	11	
Finding Title			
Details			
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	1.1.1.2.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.		
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Sample ECAMP Finding Form (continued)

Question Number		A-	106 Media	
Responsible Organization		Or	д Туре	
			444 - 65 O A A B C A A A A A A A A A A A A A A A A	
CFR Citation				
Other Criteria				
Root Cause	Explain			
Violation Type	Finding ID	F	Finding Type	Source
Owning Org POC		Off Sym	Phone	Ext
Env Mgt Org POC		_ Off Sym	Phone	Ext
Suggested Solution				
				- -
m			<u></u>	
A-106 Proj #	Est Cost \$			

USING THE ECAMP MANUAL

AF installations engage in many operations and activities that can cause environmental impacts on public health and the environment if not controlled or properly managed. Many of these activities and operations are regulated by FGS-Turkey and by AFRs/policies. After a review of these activities at AF installations, it is apparent that there are major categories of environmental compliance into which most environmental regulations and agency activities can be grouped. This manual is divided into 13 sections that correspond to major compliance categories:

- 1. Air Emissions Management
- 2. Cultural Resources Management
- 3. Hazardous Materials Management
- 4. Hazardous Waste Management
- 5. Natural Resources Management
- 6. Other Environmental Issues
- 7. Pesticide Management
- 8. Petroleum, Oil, and Lubricant (POL) Management
- 9. Solid Waste Management
- 10. Storage Tank Management
- 11. Toxic Substances Management
- 12. Wastewater Management
- 13. Water Quality Management

Each section is organized in the following format:

- **A.** Applicability of this Protocol. This provides guidance on the major activities and operations included in the section and a brief description of the major application.
- **B. DOD Directives and Instructions.** This identifies DOD Directives and Instructions that have not yet been implemented by an AFR or AFI.
- **C.** Air Force Documents. This identifies, in summary form, the key AFRs, AFIs, and AFPDs that mandate requirements in the compliance category.
- **D.** Responsibility for Compliance. This identifies the personnel on the installation who have compliance responsibilities for the compliance category.
- **E.** Definitions. This presents definitions taken from FGS-Turkey and pertinent AFRs and AFIs for those key terms associated with each compliance category.
- **F.** Compliance Assessment Checklists. The final portion of each section is a checklist composed of requirements or guidelines that serve as indicators to point out possible compliance problems and practices, conditions, or situations that could indicate potential problems. The checklist is intended to focus attention on the key compliance issues. Instructions are provided to direct the assessor to the action, references, or activity appropriate to the specific requirement or guideline.



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USING THE CHECKLISTS

Understanding the layout and structure of the checklists facilitates their use during the assessment.

- Explanation of Layout/Content. The checklist portion of assessment section is divided into two columns. The first of these is a statement of a requirement. This may be a strict regulatory requirement, in which case the citation is given, or it may be a requirement that is considered to be a good management practice to maintain compliance, but which is not specifically mandated by regulation. The second column gives instructions to help conduct the compliance assessment. These instructions are intended to be specific action items that should be accomplished by the investigator. Some of the instructions may be a simple documentation check taking a few minutes; others may require physical inspection of a facility.
- Worksheet. At the end of each section there is an assessment worksheet. This worksheet should be reproduced and used during the assessment to take notes. It is designed to be inserted between each page of the checklists, allowing the main text to be kept usable for the next assessment. The worksheet is divided into two columns. The first column is a quick check for those items that are in compliance (C), not applicable (N/A) to the facility being reviewed, or require management action (RMA). The second column on the worksheet allows for more detailed notations or comments. These notations will provide a record for use in preparing the final report. These notations should include both situations of substandard operation needing attention and those operations that are above requirements or provide examples of good programs. For future reference and clarity, it is essential that the building number be recorded or that some other reference to location be made during the review.
- Standard Checklist Items. The first three checklist items in each section of the manual are standardized. The first item requires a review of any previous assessment documents. The second is a management practice that indicates the AF documents that the installation should have on hand. The third item provides a place for assessors to write up findings that are based on regulations that have been promulgated since the publication of the manual or regulations not included in the manual.

The assessment procedures are designed as an aid and should not be considered exhaustive. Use of the checklist requires the assessor's judgment to play a role in determining the focus and extent of further investigation.



CUSTOMIZING THE CHECKLISTS FOR YOUR INSTALLATION

Creating Shop-Specific and Self-Inspection Checklists - The ECAMP checklists in this manual are a useful tool for creating self-inspection checklists for individual shops. These shop-specific checklists can be used by shop supervisors and workers to ensure correct practices and procedures are being followed on a routine basis. Thus, good self-inspection checklists are an excellent supplement to annual ECAMP assessments. A customized checklist can be created in five steps:

- 1. Review the shop's activities to determine which sections apply.
- 2. Select broad portions of the applicable sections for closer review by using the guidance page found before the checklist in each section.
- 3. Review the individual checklist items selected for application to the shop being assessed.
- 4. Edit the applicable checklist items to make them shop-specific.
- 5. Compile the checklist items.

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WRITING THE ECAMP REPORT

All ECAMP documents prepared prior to the Final Environmental Evaluation Report are internal working documents until the time that the Final Environmental Report is executed. They will be marked FOR OFFICIAL USE ONLY and handled accordingly. The AF has determined that their premature release would jeopardize the AF's interest in preserving the free flow, analysis, and comment on internal information regarding environmental compliance. Therefore, except as otherwise required by law, ECAMP documents will not be released to the public sector prior to the execution of the Final Environmental Evaluation Report. As a matter of policy, the Final Environmental Evaluation Report will be made available for release to the public, upon request, as soon as it is executed.

Final assessment reports will consist of five chapters and subheadings for each chapter as follows:

Chapter 1.0 Executive Summary

- 1.1 Background
- 1.2 Summary of Findings

Chapter 2.0 Background and Scope

- 2.1 Background
- 2.2 Scope

Chapter 3.0 Environmental Compliance Status

- 3.1 Air Emissions Management
- 3.2 Cultural Resources Management
- 3.3 Hazardous Materials Management
- 3.4 Hazardous Waste Management
- 3.5 Natural Resources Management
- 3.6 Other Environmental Issues
- 3.7 Pesticide Management
- 3.8 Petroleum, Oil, and Lubricant (POL) Management
- 3.9 Solid Waste Management
- 3.10 Storage Tank Management
- 3.11 Toxic Substances Management
- 3.12 Wastewater Management
- 3.13 Water Quality Management

Chapter 4.0 Environmental Practices Issues

- 4.1 Air Emissions Management
- 4.2 Cultural Resources Management
- 4.3 Hazardous Materials Management
- 4.4 Hazardous Waste Management
- 4.5 Natural Resources Management
- 4.6 Other Environmental Issues
- 4.7 Pesticide Management
- 4.8 Petroleum, Oil, and Lubricant (POL) Management
- 4.9 Solid Waste Management

- 4.10 Storage Tank Management
- 4.11 Toxic Substances Management
- 4.12 Wastewater Management
- 4.13 Water Quality Management

Chapter 5.0 Management Plan

- 5.1 Corrected Environmental Compliance Findings
- 5.2 Open Environmental Compliance Findings
- 5.3 Closed Environmental Practice Issues
- 5.4 Open Environmental Practice Issues

Each chapter of the assessment report should follow the described format:

Chapter 1.0. Executive Summary - The executive summary should contain background information and a summary of findings as follows:

- 1. Background
 - a. date and location of the assessment and identification of the assessment team
 - b. overall assessment purpose.
- 2. Summary of Findings
 - a. narrative summary of compliance status by section and major environmental issues. To provide balanced tone, consider placing positive comments first, followed by a summary of negative comments, if applicable
 - b. the Environmental Compliance Summary (see Figure 2 for format, page xxxv)
 - c. the Detailed Environmental Compliance Status (see Figure 3, page xxxvii)
 - d. the Environmental Compliance Status (see Figure 4, page xli), which is a summary of findings by violation type.

Figure 2

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Environmental Compliance Summary

		Sum	mary	
Compliance Area	Sig	Major	Minor	TOTAL
1. Air Emissions Management		<u> </u>		
2. Cultural Resources Management				
3. Hazardous Materials Management	<u> </u>			
4. Hazardous Waste Management				· · · · · · · · · · · · · · · · · · ·
5. Natural Resources Management	<u> </u>			<u> </u>
6. Other Environmental Issues				
7. Pesticide Management				
8. Petroleum, Oil, and Lubricant (POL) Management				
9. Solid Management				
10. Storage Tank Management				<u> </u>
11. Toxic Substances Management	<u> </u>			
12. Wastewater Management		<u> </u>		
13. Water Quality Management	<u> </u>			<u> </u>
TOTAL				



Figure 3

Detailed Environmental Compliance Status

	FINDINGS				
Compliance Area	Sig	Major	Minor	TOTAL	
Air Emissions Management					
Fuel Burners					
Incinerators					
Volatile Organics					
Vehicle Emissions					
Ozone Depleting Chemicals	·				
Particulates, Bead Blast					
Air Toxic Metals					
General Requirements					
TOTAL					
Cultural Resources Management					
Cultural/Historic					
TOTAL					
Hazardous Materials Management					
Storage Structures					
Operations/Management					
TOTAL					
Hazardous Waste Management					
Accumulation Points					
TSD Facilities					
Training					
Waste Minimization				<u> </u>	
Oil/Water Separators					
Satellite Accumulation Points					
Operational Procedures		<u> </u>			
TOTAL					

Figure 3 (continued)

Detailed Environmental Compliance Status

FINDINGS

Compliance Area	Sig	Major	Minor	TOTAL
Natural Resources Management				
Wilderness/Recreation/Forestry	<u></u>			
Land/Agriculture		<u> </u>		MARINE -
Wetlands/Floodplains				
TOTAL				
Other Environmental Issues				
EIAP				
Environmental Noise Management				
ICUZ				. <u></u>
Procedures			<u></u>	
Management				
IRP				
Pollution Prevention Management				
Management Plans				
ODCs			<u></u>	
EPA 17				
Hazardous Waste Minimization				
Recycling				
Affirmative Procurement				
Energy Conservation				
Education and Training				
Hazardous Material Control	<u> </u>			
Program Management				
A-106				
ECAMP (Preparation/Conduct)				
TOTAL				
Pesticide Management				
Facilities/Equipment				
Operations/Management				
TOTAL				

Figure 3 (continued)

Detailed Environmental Compliance Status

		FINDINGS					
Compliance Area	Sig	Major	Minor	TOTAL			
Petroleum, Oil, and Lubricant (POL) Management							
Operations/Management		<u> </u>					
Loading/Unloading Racks							
Oil/Water Separators							
Drum Storage							
Hydrant System							
TOTAL							
Solid Waste Management							
Landfills							
Receptacles		<u> </u>					
Recycling							
Medical Waste			·				
Regulated Wastes		an factor and					
TOTAL							
Storage Tank Management							
Aboveground Tanks							
Underground Tanks		. <u> </u>					
TOTAL		<u> </u>					
Toxic Substances Management							
PCB							
Asbestos				<u> </u>			
Radon Mitigation							
Lead-Based Paint							
Low Level Radiation							
TOTAL							

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Figure 3 (continued)

Detailed Environmental Compliance Status

FINDINGS

Compliance Area	Sig	Major	Minor	TOTAL
Wastewater Management				
Sanitary Wastewater				
Industrial Wastewater				
Stormwater Runoff				
Nonpoint Runoff				
Facilities/Equipment				
Oil/Water Separators				
TOTAL				
Water Quality Management Drinking Water				
TOTAL				
TOTAL FINDINGS				

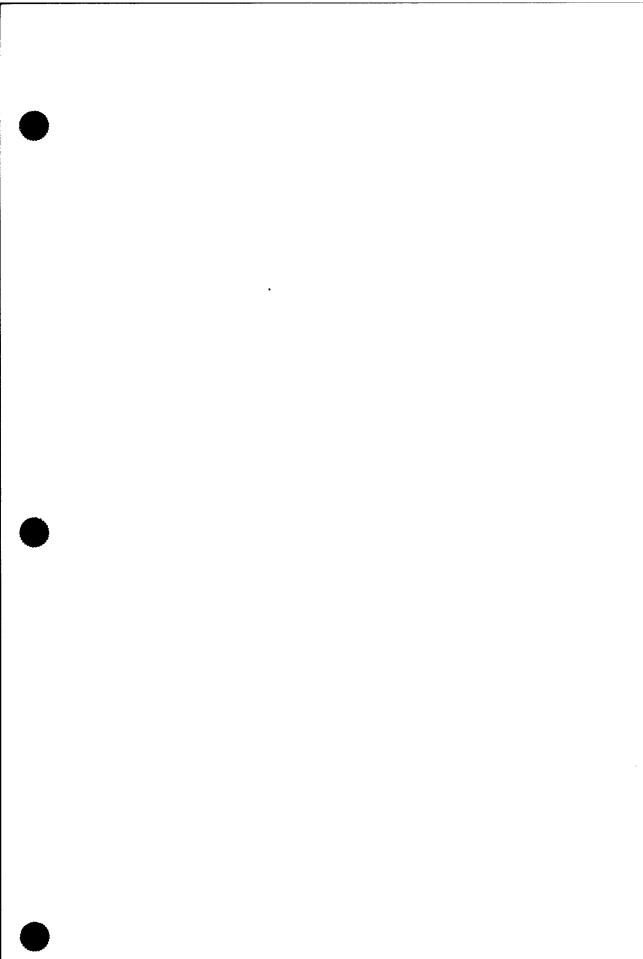
Figure 4

Environmental Compliance Status

		Find	lings	
Totals Identified	Sig	Major	Minor	TOTAL
Discharge				
Potential Discharge	<u> </u>			
Administrative				
TOTAL FINDINGS				<u> </u>

- **Chapter 2.0. Background and Scope.** The background and scope section is reserved for information needed to make a complete report but which does not fit into the executive summary or compliance findings section.
 - 1. Background.
 - a. ECAMP Objectives. A statement of the ECAMP objectives as stated in this manual and individual objectives unique to each specific assessment.
 - b. Installation Description. Describe the major attributes of the installation.
 - c. Environmental Management Structure. Describe in general how the installation's environmental management organization is structured.
 - 2. Scope.
 - a. Activity Review. Describe the base activities that were inspected (this is the appropriate section for positive statements). Comment on the state and local or host nation regulations that were considered. Identify any permits or licenses (by number and issuing agency) that were reviewed.
 - b. Summary of Evaluation Procedures. A statement that the assessment included a review of documentation, inspection of facilities, interviews of personnel, and that samples were or were not collected.
- **Chapter 3.0. Environmental Compliance Status.** The regulatory compliance section of the report should contain a separate subsection for each assessed checklist. The information presented in Figure 4 (page xli) pertains to each compliance section. Each compliance finding may consist of two parts: a findings paragraph and a separate observations and comments paragraph as follows:
 - 1. Findings. Findings may be positive or negative. Positive findings (descriptions of exemplary activities and procedures) should be stated concisely. Negative findings will be limited to noncompliance issues involving FGS-Turkey, DOD, and/or AF documents and should briefly summarize the permit conditions or other restrictions, note the deficiency, and cite the specific regulation (be specific). Where applicable, describe the total sample universe, the number of items sampled, and how many were out of compliance:
 - a. Ensure that each negative finding is clearly identified as regulatory, host country, or procedural.
 - b. Negative findings that were closed since the last ECAMP and have occurred again must be identified as repeat findings.
 - c. Negative findings that remain open since the last external ECAMP must be identified as carryover findings.
 - d. Ensure that each finding paragraph is concise, factual (conditions clearly in noncompliance with criteria), and free of the assessor's opinions and recommendations. If there is uncertainty over the regulations that apply, their meaning, or the actual conditions on the installation, place such comments in the Environmental Practice Issues Section of the report.
 - e. Negative findings will be separately labelled and numbered. All negative findings will include finding identification codes for summarizing ECAMP results. See the explanation of how to fill out the findings summary for a listing of codes.

- 2. Observations and Comments on Compliance Findings. Since the finding paragraphs are reserved for strictly factual compliance criteria and conditions, all comments and recommendations on a compliance finding will be placed in a separate comments paragraph immediately following the finding. No new findings will be introduced in the comments paragraphs. Information in the comments paragraphs may include background information on a finding if necessary, statements on causes and effects, and a recommendation for correcting the deficiency. Assessment teams are under no obligation to make recommendations. When recommendations are made, they should be aimed at resolving root causes. Often, the onsite portion of the assessment does not permit time to identify root causes. Recommendations made under these conditions usually address symptoms rather than providing permanent solutions.
- **Chapter 4.0. Environmental Practice Issues.** The assessment team may include recommendations for reducing environmental risks and improving environmental management practices as well as suggesting areas requiring additional study. Recommendations placed in this chapter are not based on environmental regulations and do not involve noncompliance. Instead, they are management practices that will help keep an installation in compliance. Items appropriate for this chapter include:
 - 1. Environmental risk reduction issues not associated with noncompliance.
 - 2. Potential noncompliance based on final regulations with a future compliance deadline.
 - 3. Management practice recommendations based on items in the ECAMP checklist.
 - 4. Other management practice recommendations.
- **Chapter 5.0. Management Action Plan**. The management action plan states how each compliance finding was resolved or contains the installation EPC's plan for resolving the compliance finding. The Management Action Plan also states how each environmental practice issue is being addressed. Since environmental practice issues do not involve noncompliance, they should be carefully reviewed by the installation EPC, but may be closed without action. After the installation approves the Management Action Plan, it should be included in the Draft Final Environmental Assessment Report as Chapter 5. The Management Action Plan tracks each compliance finding or environmental issue.



	Name of Installation: D	ate:			
	ITEM		YES	NO	N/A
G	eneral				
1.	Is the installation manned?				
2.	Do host nation authorities inspect the site or show particular interessome other way?	est in it in			
3.	Has the installation received notifications of non-compliance, co or enforcement actions from host nation agencies at the national local level?				
4.	Has the installation ever received a significant finding as a res external ECAMP assessment? What was the reason for the findin was the finding written? When was the finding closed?	sult of an ng? When			
5.	Is the installation currently the subject of litigation that concerns mental issues?	environ-			
6.	Has the installation ever been the subject of litigation that concernmental issues?	erns envi-			
7.	Are there contaminated sites (old spill sites, dumps, etc.)?				
	a) Suspected? What is the suspected contaminant?				<u></u>
	b) Validated? What is the contaminant?				
	c) Under assessment? What is the contaminant?				
	d) Under remediation? What is the contaminant?				
8.	Has the installation been identified for closure?				
9.	Has the installation inherited quantities of undisposed waste or mayes, what and how much?	aterial? If			

ITEM	YES	NO	N/.
Air Emissions			
 Does the installation have N/SM fossil-fuel-fired steam generating units with a heat input capacity greater than 100 MBtu/h? How many? What size? (Please list the units and their size here or on the back of this page or attach a separate sheet.) 			
2. Does the installation have N/SM steam generating units or electric utility steam generating units with a heat input capacity greater than 100 MBtu/h? How many? What size? (Please list the units and their size here or on the back of this page or attach a separate sheet.)			
3. Does the installation have steam generating units or electric utility or thermal heating units rated greater than 100,000 Btu, whether N/SM or existing? How many? What size? (Please list the units and their size here or on the back of this page or attach a separate sheet.)			
4. Does the installation have any N/SM incinerators that burn more than 50 tons/day or more than 10 percent sewage sludge? How many? What size? (Please list the units and their size here or on the back of this page or attach a separate sheet.)			
5. Does the installation operate any of the following:		·	
a) paint booths?			
b) rotary presses?			
c) carpentry shops?			
d) surface coating facilities?			
e) chemical dry cleaning plants?			

ITEM	YES	NO	N/A
Air Emissions (continued)			
6. Does the installation have any air emissions sources that are subject to con- tinuous emissions monitoring? What are these sources?	<u></u>		
7. Are heated degreaser baths part of any industrial process on the installa-			
tion?			
8. Does the installation have active aircraft operations? Of what sort?			
9. Does the installation have Aerospace Ground Equipment operations?			
10. Does the installation use chlorofluorocarbons (CFCs) or halons?			
11. Does the installation recycle/reclaim CFCs or halons?			
12. Are any of the installation's heating plants inspected by host nation authorities?			
13. Does open burning occur on the installation?			
14. Has the installation received complaints from host nation individuals or agencies about its air emissions? What was the nature of the complaint?	<u> </u>		
15. Have host nation agencies or authorities made any inquiries regarding air emissions?			
16. What was the nature of these inquiries?			

	ITEM	YES	NO	N/A
Dr	inking Water			
1.	Does the installation operate a public water system? (See definition.)			
2.	Does the installation operate a community water system? (See definition.)			
3.	Does the installation operate a non-community water system? (See definition.)			
4.	Does the installation operate a non-transient, non-community water system? (See definition.)			
5.	Does the installation get water from on-site wells or surface water sources?			
6.	Does the installation get water from a municipal or regional water supply system?			
7.	Does the installation filter its drinking water? By what kind of filtration?			
8.	Have tests and inspections of backflow prevention devices been conducted within the last 12 months?			
9.	Has the installation identified potential or existing cross-connections and assessed the degree of hazard that each represents?			
10	Has the installation conducted a sanitary survey of the water system within the last 12 months?			
11.	Does the installation carry out a sampling/monitoring plan that meets FGS-X requirements?			
12	Has the installation been out of compliance with FGS-X water quality stan- dards for the following parameters within the last 12 months:			
	a) total coliforms?			
	b) inorganic chemicals?			
	c) fluoride content?		<u></u>	
	d) lead?	<u> </u>	<u> </u>	<u></u>
	e) copper?			
	f) synthetic organics?		. <u></u>	
	g) total trihalomethanes?			
	h) radionuclides?			
	i) turbidity?		<u> </u>	
13	If any answer in Question 12 is "yes," which parameters? For what length of time?			

ITEM	YES	NO	N/A
Drinking Water (continued)			
14. Does the installation maintain a disinfectant residual throughout the water system? If yes, what is the level of residual disinfectant?			
15. Has the installation conducted proper notification, in the event of noncompliance with water quality standards?			
16. Does the installation engage in underground injection?		<u> </u>	
17. Has the installation received complaints about water quality from host nation individuals or agencies?			
18. What was the nature of those complaints?			
19. Have host nation agencies or authorities made any inquiries regarding water quality?			

- 20. What was the nature of these inquiries?
- **21.** Additional observations:

ITEM	YES	NO	N/A
Wastewater			
1. Does the installation operate a wastewater treatment plant?			
2. Does the installation discharge into a publicly owned treatment works?		<u> </u>	
3. Does the installation engage in pretreatment of industrial wastewater proto discharge to a wastewater treatment plant?	rior		
4. Does the installation conduct any effluent monitoring? For what s stances?	ub- 		
 Have the installation's point source dischargers exceeded FGS-X standa for any of the following within the last 12 months: 	urds		
a) total suspended solids?			
b) pH?			
c) BOD ₅ ?			
6. If any answer in Question 5 is "yes," which parameters? For what length time?	n of		
7. Has the DWTP received slug discharges that have seriously impaired of ations?	oer-		
8. Has the DWTP ever been killed? If yes, how and when?			
9. Does the installation discharge effluent from electroplating facilities?			
10. Has the installation surveyed stormwater discharge within the last year?			
11. Has stormwater run-off from the installation resulted in complaints fr host nation individuals or authorities? What was the nature of the co plaints?			
12. Is the installation subject to ground- or surface water monitoring for reason?	any		 .
13. Has the installation received water pollution complaints from individuand/or host nation water pollution control authorities?	1als		

ITEM	YES	NO	N/A
Wastewater (continued)			
14. Have host nation agencies or authorities made any inquiries regarding wastewater?	<u></u>		

15. What was the nature of these inquiries?

16. Additional observations:

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(continued)

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	ITEM	YES	NO	N/4
Ha	izardous Materials			
1.	Are hazardous materials (hazmat) in use on the site? If yes, what materials and in what amounts? (Please attach a copy of the installation's hazmat inventory.)			
2.	What kind of spill response capabilities does the installation have?			
3.	Does the installation store hazardous materials in any of the following:			
	a) storage rooms inside buildings?			
	b) storage buildings or warehouses?			
	c) outdoor storage areas?			
4.	Does the installation have any industrial processes that use hazardous mate- rials? If yes, what are the processes?		<u></u>	
5.	Does the installation have a battery shop?			
6.	Does the installation have acid storage facilities?			
7.	Does the installation have any hazardous substance USTs?			
8.	Does the installation store compressed gas cylinders? If yes, in what type of facility?			
9.	Have host nation agencies or authorities made any inquiries regarding haz- ardous materials?			
10	. What was the nature of these inquiries?			

11. Additional observations:

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	ITEM	YES	NO	N/A
H	azardous Waste			
1.	Does the installation generate HW? What are the principal waste streams and amounts? (Please use the back of this page for a list or attach a separate page.)			
2.	Does the installation generate any acute HW? If yes, what waste in what amounts? (Please use the back of this page for a list or attach a separate page.)			
3.	Does the installation treat or dispose of HW on-site? What method(s) is used?			
4.	Does the installation employ a contractor to dispose of HW off-site?			
5.	Does the installation's contractor hold valid permits from appropriate host nation authorities?			
6.	Does the installation accept HW from other installations for treatment, for storage, or for disposal? For which of those purposes?			
7.	Do installation personnel transport HW off-site?			
8.	Does transport of HW include an adequate, functioning system for mani- festing?			
9.	Does the installation have Hazardous Waste Accumulation Points (see defi- nition) where more than 55 gal of HW per waste stream accumulates? How many such areas are there?			
10.	Are ignitable or reactive wastes stored at HWAPs?			
11.	Does the installation operate one or more Hazardous Waste Storage Areas (see definition)?	<u></u>	<u> </u>	
12.	Does the installation store or treat HW in any kind of underground tank or container?			
13.	Does the installation operate a hazardous waste disposal facility?			
14.	Does the installation store conventional explosive ordnance?	<u> </u>	. <u></u>	
15.	Have host nation agencies or authorities made any inquiries regarding haz- ardous waste?			<u></u>

ITEM	YES	NO	N/A

Hazardous Waste (continued)

16. What was the nature of these inquiries?

Table 1:	Sample Previs	sit Environmental	Management	Questionnaire	(continued)
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	ITEM	YES	NO	N/A
Sc	lid Waste			
1.	Does the installation have a solid waste management facility onsite?	<u></u>		
2.	Does the installation operate an official or unofficial landfill at this time?			
3.	Has the installation operated an official or unofficial landfill in the past?	<u></u>	<u></u>	
4.	Has the installation formally closed a landfill?			
5.	Has the installation simply stopped using a landfill rather than close it for- mally?			
6.	Does the installation collect and dispose of solid waste itself?			
7.	Are collection and disposal contracted out to a host nation firm?			
8.	Does that firm hold valid permits from appropriate host nation authorities?			
9.	Does the installation dispose of any solid waste by open burning?			
10	Has runoff from a land disposal site been the cause of complaints from host nation individuals or agencies?			
11	. What was the nature of the complaints?			
12	Does the installation operate a thermal processing facility that processes more than 50 tons/day?			
13	Does the installation operate an incinerator for the disposal of municipal solid waste?		<u></u>	
14	Does the installation compost sludge from a domestic wastewater treatment plant?			
15	Does the installation currently dispose of asbestos onsite?			
16	Has the installation ever disposed of asbestos onsite?			
17	Is there evidence of a recycling program?			
18	Is the program effective?			

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ITEM	YES	NO	N/A
Solid Waste (continued)			
19. Have host nation agencies or authorities made any inquiries regarding solid waste?			
20. What was the nature of these inquiries?			

ITEM	YES	NO	N/A
Medical Waste			
1. Is there an active hospital or clinic on the installation?			
2. How much infectious medical waste does the hospital/clinic generate?			
3. Does the installation dispose of infectious medical waste itself? What method of collection and disposal is used?			
4. Are collection and disposal of such waste contracted out to a host nation firm?			
5. Does that firm hold valid permits from appropriate host nation authorities for the category (or categories) of waste that it receives?			
6. Does the installation store infectious medical waste prior to disposal?			
7. Does the installation treat infectious medical waste prior to disposal? By what process?			
8. Do installation personnel transport infectious medical waste off-site for dis- posal?			
9. Does the installation generate pathology waste (see definition)? How is it disposed of?			<u> </u>
10. Have host nation agencies or authorities made any inquiries regarding med- ical waste?			
11. What was the nature of these inquiries?			

12. Additional observations:

	ITEM	YES	NO	N/A
Pet	roleum, Oil, and Lubricants			
1.	What kinds of fuel are stored on site? How much of each kind of fuel is stored on-site? (Please use the back of this page for a list or attach a separate sheet.)			
2.	Does the installation have ASTs whose design and/or construction do not currently meet recognized U.S. industry standards?			
3.	Do any ASTs appear to present a risk of failure?			
4.	Do any ASTs appear to be inadequately maintained?			
5.	Does the installation have any ASTs that are no longer in use but have not been formally closed or removed? If yes, how many and what size?			
6.	Does the installation have any ASTs with a capacity greater than 660 gal that do not have proper secondary containment that is impermeable to petroleum products? If yes, how many and what size?			
7.	Does the installation have any pipeline systems whose design and/or con- struction do not currently meet recognized U.S. industry standards?			
8.	Has the installation had a confirmed release of a hazardous substance or POL from an AST? What substance? How much?			
9.	Does the installation burn used oil fuel?			
10.	Does the installation use a hydrant system or fuel trucks for aircraft fuel- ing? Which?			
11.	Have past or present releases of fuel and/or other POL products engaged the interest of host nation authorities?			
12.	Have the installation's POL facilities been inspected by host nation agencies?			
13	Have host nation agencies or authorities made any inquiries regarding POL?			

ITEM	YES	NO	N/A

POL (continued)

14. What was the nature of these inquiries?

15. Additional observations:

ITEM	YES	NO	N/A
Environmental Noise			
1. Does the installation have an active flightline?			
2. Does the installation carry out any operations that produce environmental noise (e.g., target ranges, skeet ranges, helicopter pads)? What are they?			
3. Are there plans to build facilities that would be considered significant noise sources? If yes, what type of facilities?			
4. Has any installation activity been the cause of noise complaints from host nation individuals or agencies? What activity resulted in the complaint?			
5. If the answer to Question 5 is "yes," have the complaints been resolved to the satisfaction of all parties?			
6. Have host nation agencies or authorities made any inquiries regarding environmental noise?			
7. What was the nature of these inquiries?			

ITEM	YES	NO	N/A
Pesticides			
1. Are restricted-use pesticides in use on the installation?			
2. Are restricted-use pesticides applied by personnel who have been certified both by DOD and by the appropriate host nation authority?			
3. Has a release of pesticides on the installation ever killed the wastewater treatment plant that receives the installation's wastewater? What were the circumstances?			
4. Does the installation's Pest Management Facility drain to a holding tank, a septic system, a sanitary sewer, or to a stormwater system? If yes, to which?			
5. Does the installation's Pest Management Facility have backflow prevention devices that are both of an appropriate type and operational?			
6. Is the installation's Pest Management Facility located closer than 200 ft to surface water, existing wells and cisterns, or 100-yr flood plains?			
7. Is the installation's Pest Management Facility located uphill from sources of potable water or from structures that are occupied continuously?			
8. Is the installation's Pest Management Facility located over an aquifer?			<u></u>
9. Does the installation include a golf course?	<u> </u>		
10. Have host nation agencies or authorities made any inquiries regarding pesticide use on the installation?			
11. What was the nature of these inquiries?			

ITEM	YES	NO	N/A
Historic and Cultural Resources			
1. Has any host nation authority shown a particular interest in any on-base cultural/archaeological resource? If yes, which resources?			
2. Are human artifacts or human remains ever discovered as part of routine base operations? If yes, what types of artifacts/remains?			
Endangered Species and Natural Resources			
1. Has any host nation authority shown a particular interest in any on-base natural resource? If yes, which resources?			
2. Is there any surface water to be found within the installation's perimeter' Of what type is it (lake, river, pond, creek, etc.)?			
3. Is the installation located above or very near to an aquifer?			
4. Does a species that the host nation has identified as endangered or threat ened have habitat within the boundaries of the installation? What species?			
5. Does the installation operate an air-to-surface weapons range?			
6. Does the installation engage in the destruction of ordnance by explosion of burning? If yes, what method is used?			
7. Have host nation agencies or authorities made any inquiries regarding either natural or cultural resources on the installation?	ç 		
8. What was the nature of these inquiries?			

ITEM	YES	NO	N/A
Historic and Cultural Resources/Endangered Species and Natural			

Resources (continued)

	ITEM	YES	NO	N/A
Po	lychlorinated Biphenyls			
1.	Has the installation tested all electrical equipment that is likely to contain PCBs for PCB concentrations?			
2.	Does the installation use any electrical equipment that contains PCBs in concentrations greater than 50 ppm?		<u></u>	
3.	Does the installation use any electrical equipment that contains PCBs in concentrations greater than 500 ppm?			
4.	Does the installation store any electrical equipment that contains PCBs in concentrations greater than 50 ppm?			
5.	Does the installation store any electrical equipment that contains PCBs in concentrations greater than 500 ppm?			
6.	Does the installation service any electrical equipment that contains PCBs in concentrations greater than 50 ppm?			
7.	Does the installation service any electrical equipment that contains PCBs in concentrations greater than 500 ppm?			
8.	Does the installation replace such equipment at the end of its service life with equipment that does not contain PCBs?			
9.	Does the installation dispose on-site of PCBs and/or equipment that con- tains or is contaminated with PCBs?			
10	Does the installation dispose of PCBs through DRMO?			<u></u>
11	If the answer to Question 10 is "no," what method of disposal is used?			
12	Do installation personnel transport PCBs offbase?			<u> </u>
As	bestos			
1.	Are there facilities on-site that are known to contain or are suspected of containing ACM?			
2.	Has the installation tested any friable materials that are likely to contain asbestos to discover if in fact the material does contain asbestos?			
3.	Does the friable material actually contain asbestos?			*
4.	Does the installation have any sites where damaged asbestos is found?			
	Does the installation have any sites where friable asbestos is found?		<u></u>	
5.	5			
	Does the installation have any sites where asbestos abatement is either planned or on-going?		<u></u>	

	ITEM	YES	NO	N/A
A	sbestos (continued)			
8.	Is the installation renovating or demolishing any structures where ACM may be disturbed or removed?			
9.	Is the installation currently storing any asbestos-containing waste material for disposal? If yes, what ACM and what quantity?			
1(Are any sites on the installation currently being monitored for concentra- tions of airborne asbestos fibers?		-	
11	. Have any monitoring results indicated concentrations greater than 0.2 fibers per cubic centimeter?			
12	2. Does the installation dispose of asbestos containing waste material? What type? What quantity?			
13	Does the installation have an active waste disposal site where ACM is being disposed of?			
14	Does the installation have an inactive waste disposal site where ACM has been disposed of in the past?			
R	adon			
1.	Has initial radon screening been conducted on the installation?			
2.	Did any initial screening sample show a radon level greater than 4 pCi/L?			
3.	Has mitigation been conducted on buildings where radon levels exceed 4 $pCi/L?$			
Le	ad-Based Paint			
1.	Has the installation identified any existing or potential LBP hazards?			
2.	Is LBP currently being used on the installation in the course of maintenance or construction? In what amounts?			
3.	Are any buildings with LBP hazards being demolished or renovated?			<u> </u>
4.	Are there plans to demolish or renovate any buildings with LBP hazards?		······	
5.	Has the installation ever had a case of elevated levels of lead in the blood?	<u></u>		

	ITEM	YES	NO	N/A
PC	CBs, Asbestos, Radon, LBP (continued)			
6.	Do any persons on the installation currently have elevated levels of lead in the blood?		<u></u>	
7.	Describe how demolition/renovation wastes that might contain LBP or asbestos are managed.			
8.	Have host nation agencies or authorities made any inquiries regarding			

9. What was the nature of these inquiries?

PCBs, asbestos, radon, or LBP on the installation?

10. Additional observations:

	ITEM	YES	NO	N/A
U	nderground Storage Tanks			
1.	Does the installation use USTs for the storage of any of the following sub- stances:	<u> </u>		
	a) POL?			
	b) hazardous materials?			
	c) hazardous waste?			
2.	Does the installation have any USTs whose design and/or construction do not currently meet recognized U.S. industry standards?			
3.	Does the installation have any USTs that are without secondary contain- ment or double-walled construction? If yes, how many and what size?			
		·		
4.	Do installation personnel think that there are tanks onsite that are likely to fail?			
5.	Does the installation have any leaking USTs that have not been removed from service?			
6.	Does the installation have any USTs that are no longer in use but have not been properly closed?			<u> </u>
7.	Has the installation had a confirmed release of a hazardous substance or POL from a UST? What substance? What quantity?			
8.	Have past or present releases of hazardous substances or POL attracted the attention of host nation authorities?			
9.	Have host nation agencies or authorities made any inquiries regarding USTs on the installation?			
10	What was the nature of these inquiries?			

ITEM	YES	NO	N/A
Underground Storage Tanks (continued)			

ATTENTION: The following records should be available for review by the assessment team either prior to the assessment or immediately upon arrival at the installation.

(NOTE: Not all installations will have, or are even required to have, all of the following documents.)

General

- 1. Detailed maps of the installation indicating street names and building numbers. Enough for one for every member of the assessment team
- 2. A phone list
- 3. Copies of notice of violations (NOVs) issued to the installation in any of these areas

Air Emissions Management

- 1. Air emissions inventory
- 2. All air related permits
- 3. A list of steam generating units and boilers and their size, fuel used, and locations

Cultural Resources Management

- 1. Any cultural or archeological resources surveys
- 2. Management plans for cultural and archeological resources
- 3. A list of properties included on the host nation's equivalent of the National Register

Hazardous Materials Management

- 1. A list of hazardous material storage/use areas
- 2. A waste minimization plan
- 3. Material safety data sheet (MSDS)
- 4. Documentation of personnel training
- 5. A copy of any reports of spills
- 6. Copies of the Tier I or Tier II reports
- 7. Documentation on contaminated sites

Hazardous Waste Management

- 1. The Hazardous Waste Management Plan
- 2. A list of hazardous wastes generated at the installation
- 3. A list of waste generation/storage areas
- 4. Manifests
- 5. Any permits
- 6. The biennial report
- 7. Personnel training records

Natural Resources Management

- 1. The endangered species survey
- 2. The Natural Resources Management Plan
- 3. Any land management plans

Other Environmental Issues

Environmental Impacts

1. Recent environmental analyses (EAs), environmental impact statements (EISs), Environmental Studies, Environmental Reviews

Environmental Noise Management

- 2. ICUZ dccumentation
- 3. Noise complaints

Cleanup (Restoration)

4. Documentation related to cleanup (restoration) efforts

Pollution Prevention

5. The Pollution Prevention Management Plan

Program Management

6. The A-106 Pollution Abatement Plan

Pesticides Management

- 1. The Pesticide Management Plan
- 2. A list of pesticide storage sites
- 3. Application records
- 4. MSDSs for pesticides
- 5. Personnel certifications for applicators
- 6. Contracts for pesticide application

Petroleum, Oil, and Lubricant (POL) Management

- 1. The installtion spill plan
- 2. A list of POL storage areas

Solid Waste Management

- 1. Any contracts with waste haulers
- 2. Any recycling plans
- 3. All documentation pertaining to landfill operation or closure
- 4. Records on groundwater sampling resulting from monitoring wells

Storage Tank Management

- 1. List of organizational fuel tanks
- 2. List of support tanks authorized to receive fuel
- 3. Records of all spills and leaks and associated site assessement/cleanup activities
- 4. Tank custodian training records
- 5. UST inventory
- 6. UST integrity test results
- 7. Upgrading and/or closure plans and site contamination reports after tank removals



Toxic Substances Management

- 1. The PCB inventory
- The PCB annual report
 The results of the asbestos survey
- 4. The Asbestos Management Plan
- 5. Radon survey results.
- 6. Lead-based Paint Management Plan

Wastewater Management

- 1. Maps of the storm, sanitary, and industrial sewers

- A copy of pretreatment standards imposed on the installation
 A list of maintenance shops/operations, including wash facilities
 Locations of holding ponds, sedimentation pits, and open/end-of-pipe discharge points

Water Quality Management

1. Copies of drinking water test results



		Sections			
Major Activities/Operations	Air Emissions Management 1	Cultural Resources Management 2	Hazardous Materials Management 3	Hazardous Waste Management 4	
1. Incinerators	•			•	
2. Heat/Power Production	•			•	
3. AGE Operation	•		•	•	
4. Aircraft Operations	•				
5. Aircraft Maintenance			•	٠	
6. Fuel Storage	•		•		
7. Surface Coating Operations	•		•	٠	
8. Sanitary Wastewater					
9. Stormwater Runoff					
10. Sludge Disposal	•				
11. POL Dispensing	•				
12. Wastewater Treatment					
13. Vehicle Maintenance	•		•	•	
14. Shop Activities	•		•	٠	
15. Solid Waste Generation					
16. Water Supply				· · · · · · · · · · · · · · · · · · ·	
17. Toxic/hazardous Materials Use			٠		
18. Firefighting Training	•				
19. PCB Electrical Equipment					
20. Pesticide/ Herbicide Use				•	
21. Environmental Noise					
22. Emergency Planning			•	•	
23. Asbestos Removal					
24. Underground Storage Tanks	•		٠	•	
25. Remodeling Activities		•			
26. Construction Activities		•			
27. Soil Removal		•			

 Table 2 (continued)

	Sections			
Major Activities/Operations	Natural Resources Management 5	Other Environ- mental Issues 6	Pesticide Management 7	POL Management 8
1. Incinerators				
2. Heat/Power Production				•
3. AGE Operation				•
4. Aircraft Operations		٠		•
5. Aircraft Maintenance		•		•
6. Fuel Storage				•
7. Surface Coating Operations		•		
8. Sanitary Wastewater				
9. Stormwater Runoff			•	•
10. Sludge Disposal		•		
11. POL Dispensing			· · ·	•
12. Wastewater Treatment				
13. Vehicle Maintenance	<u></u>	٠		•
14. Shop Activities		•		
15. Solid Waste Generation		•		
16. Water Supply		· · · · ·		
17. Toxic/hazardous Materials Use		•		
18. Firefighting Training				•
19. PCB Electrical Equipment				
20. Pesticide/ Herbicide Use			•	
21. Environmental Noise		٠		
22. Emergency Planning				•
23. Asbestos Removal				
24. Underground Storage Tanks			1	•
25. Remodeling Activities	•	· · · ·		
26. Construction Activities	•			
27. Soil Removal	•			

 Table 2 (continued)

	Sections			
Major Activities/Operations	Solid Waste Management 9	Storage Tank Management 10	Toxic Substances Management 11	Wastewater Management 12
1. Incinerators	•			
2. Heat/Power Production	•	•		•
3. AGE Operation		•		
4. Aircraft Operations				
5. Aircraft Maintenance				•
6. Fuel Storage		•		
7. Surface Coating Operations				•
8. Sanitary Wastewater				٠
9. Stormwater Runoff				•
10. Sludge Disposal	0			•
11. POL Dispensing				
12. Wastewater Treatment				•
13. Vehicle Maintenance	•		•	•
14. Shop Activities	•			٠
15. Solid Waste Generation	•			
16. Water Supply				an early a share a shar
17. Toxic/hazardous Materials Use			•	
18. Firefighting Training				•
19. PCB Electrical Equipment				
20. Pesticide/ Herbicide Use				•
21. Environmental Noise				
22. Emergency Planning				
23. Asbestos Removal			•	
24. Underground Storage Tanks		•		
25. Remodeling Activities	•		•	<u> </u>
26. Construction Activities	•		•	
27. Soil Removal				

Table 2 (continued)

	Sections		
Major Activities/Operations	Water Quality Management 13		
1. Incinerators			
2. Heat/Power Production			
3. AGE Operation			
4. Aircraft Operations			
5. Aircraft Maintenance			
6. Fuel Storage			
7. Surface Coating Operations			
8. Sanitary Wastewater			
9. Stormwater Runoff			
10. Sludge Disposal			
11. POL Dispensing			
12. Wastewater Treatment			
13. Vehicle Maintenance			
14. Shop Activities			
15. Solid Waste Generation			
16. Water Supply	•		
17. Toxic/hazardous Materials Use			
18. Firefighting Training			
19. PCB Electrical Equipment			
20. Pesticide/ Herbicide Use			
21. Environmental Noise			
22. Emergency Planning			
23. Asbestos Removal			
24. Underground Storage Tanks			
25. Remodeling Activities			
26. Construction Activities			
27. Soil Removal			

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Glossary of Acronyms

AFOAccounting and Finance OfficeAFOSHAir Force Occupational Safety and Health [Standard]AFPAir Force PamphletAFPDAir Force Policy DirectiveAFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTMAboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcirbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering Programmer	Acronym	Expansion		
ACWMasbestos-containing waste materialAFAir ForceAFCEEAir Force Center for Environmental ExcellenceAFIAir Force InstructionAFJAir Force InstructionAFJAir Force ManualAFOAccounting and Finance OfficeAFOMAir Force Occupational Safety and Health [Standard]AFPAir Force PamphletAFPMAir Force Policy DirectiveAFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMContinuous emissions monitoringCEPCivil Engineering Programmer	AAFES	Army/Air Force Exchange Service		
AFAir ForceAFCEEAir Force Center for Environmental ExcellenceAFIAir Force InstructionAFJAir Force InstructionAFMAir Force ManualAFOAccounting and Finance OfficeAFOMAir Force Occupational Safety and Health [Standard]AFPAir Force PamphletAFPMAir Force Policy DirectiveAFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMContinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	ACM	asbestos-containing material		
AFCEEAir Force Center for Environmental ExcellenceAFIAir Force InstructionAFJAir Force Joint [Regulation]AFMAir Force ManualAFOAccounting and Finance OfficeAFONAir Force Occupational Safety and Health [Standard]AFPAir Force Occupational Safety and Health [Standard]AFPAir Force Policy DirectiveAFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	ACWM	asbestos-containing waste material		
AFIAir Force InstructionAFJAir Force Joint [Regulation]AFMAir Force ManualAFOAccounting and Finance OfficeAFOMAir Force Occupational Safety and Health [Standard]AFPAir Force Occupational Safety and Health [Standard]AFPAir Force Policy DirectiveAFPMAir Force Policy DirectiveAFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AF	Air Force		
AFJAir Force Joint [Regulation]AFMAir Force ManualAFOAccounting and Finance OfficeAFOMAir Force Occupational Safety and Health [Standard]AFPAir Force Cocupational Safety and Health [Standard]AFPAir Force PamphletAFPMAir Force Policy DirectiveAFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering Programmer	AFCEE	Air Force Center for Environmental Excellence		
AFMAir Force ManualAFOAccounting and Finance OfficeAFOSHAir Force Occupational Safety and Health [Standard]AFPAir Force PamphletAFPAir Force Policy DirectiveAFPMArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AFI	Air Force Instruction		
AFOAccounting and Finance OfficeAFOSHAir Force Occupational Safety and Health [Standard]AFPAir Force PamphletAFPDAir Force Policy DirectiveAFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AFJ	Air Force Joint [Regulation]		
AFOSHAir Force Occupational Safety and Health [Standard]AFPAir Force PamphletAFPMAir Force Policy DirectiveAFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AFM	Air Force Manual		
AFPAir Force PamphletAFPAir Force Policy DirectiveAFPDAir Force Policy DirectiveAFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AFO	Accounting and Finance Office		
AFPDAir Force Policy DirectiveAFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AFOSH	Air Force Occupational Safety and Health [Standard]		
AFPMBArmed Forces Pest Management BoardAFRAir Force RegulationAFTOAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCATEXcategorical exclusionCBODcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AFP	Air Force Pamphlet		
AFRAir Force RegulationAFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCATEXcategorical exclusionCBODcategorical exclusionCBODcategorical exclusionCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AFPD	Air Force Policy Directive		
AFTOAir Force Technical OrderAGEaerospace ground equipmentASTaboveground storage tanksASTAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcategorical exclusionCBODcivil Engineering Contract Reporting SystemCEMCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AFPMB	Armed Forces Pest Management Board		
AGEaerospace ground equipmentASTaboveground storage tanksASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcategorical exclusionCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AFR	Air Force Regulation		
ASTaboveground storage tanksASTAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AFTO	Air Force Technical Order		
ASTMAmerican Society for Testing and MaterialsAVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AGE	aerospace ground equipment		
AVGASaviation gasolineBFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AST	aboveground storage tanks		
BFMOBase Fuels Management OfficeBODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	ASTM	American Society for Testing and Materials		
BODbiochemical oxygen demandCAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	AVGAS	aviation gasoline		
CAAClean Air ActCASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	BFMO	Base Fuels Management Office		
CASChemical Abstract ServiceCATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	BOD	biochemical oxygen demand		
CATEXcategorical exclusionCBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	CAA	Clean Air Act		
CBODcarbonaceous biochemical oxygen demandCDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	CAS	Chemical Abstract Service		
CDCChild Development CenterCECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	CATEX	categorical exclusion		
CECORSCivil Engineering Contract Reporting SystemCEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	CBOD	carbonaceous biochemical oxygen demand		
CEMcontinuous emissions monitoringCEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	CDC	Child Development Center		
CEPCivil Engineering ProgrammerCERCLAComprehensive Environmental Restoration, Compensation, and Liability Act	CECORS	Civil Engineering Contract Reporting System		
CERCLA Comprehensive Environmental Restoration, Compensation, and Liability Act	CEM	continuous emissions monitoring		
	CEP	Civil Engineering Programmer		
CFC chlorofluorocarbon	CERCLA	Comprehensive Environmental Restoration, Compensation, and Liability Act		
	CFC	chlorofluorocarbon		

(continued)

Acronym	Expansion	
CFR	Code of Federal Regulations	
CONUS	continental United States	
CPSA	Consumer Product Safety Act	
СТ	concentration/time	
CWS	community water system	
DCM	Deputy Commander for Maintenance	
DFO/DFR	Defense Fuel Office/Defense Fuel Region	
DLA	Defense Logistic Agency	
DOD	Department of Defense	
DODAAC	DOD Activity Address Code	
DODD	DOD Directive	
DODI	DOD Instruction	
DOE	Department of Energy	
DOPAA	description of proposed action and alternatives	
DOT	Department of Transportation	
DRMO	Defense Reutilization and Marketing Office	
DRMS	Defense Reutilization and Marketing Service	
DWTP	domestic wastewater treatment plant	
EA	environmental analysis	
EC	Emergency Coordinator	
EC	Environmental Coordinator	
ECAMP	Environmental Compliance Assessment and Management Program	
ECD	estimated compliance date	
EEA	environmental executive agent	
EHO	Environmental Health Officer	
EIAP	Environmental Impact Analysis Process	
EIS	environmental impact statement	
EM	Environmental Manager	
EMO	Environmental Management Office	
EOD	explosive ordnance disposal	
EPA	Environmental Protection Agency	
EPC	Environmental Protection Committee	
EPCRA	Emergency Planning and Community Right-to-Know Act	
EPF	Environmental Planning Function	
		(continue

	Glossary of Acronyms (continued)
Acronym	Expansion
ER	Environmental Review
ES	Environmental Study
FGS	Final Governing Standards
FMFC	Fuels Management Flight Commander
FONSI	Finding of No Significant Impact
FY	fiscal year
GOCO	government-owned, contractor-operated
GSA	General Services Administration
GWUDISW	groundwater under the direct influence of surface water
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCFC	hydrochlorofluorocarbon
HM	hazardous materials
HMTA	Hazardous Materials Transportation Act
IMIS	Hazardous Materials Information System
łQ	Headquarters
IUD	Housing and Urban Development
HVAC	heating, ventilation, air conditioning
HW	hazardous waste
HWAP	hazardous waste accumulation point
TWPS	hazardous waste profile sheet
łWSA	hazardous waste storage area
APMO	International Association of Plumbing and Mechanical Officials
С	Installation Commander
CUZ	installation compatible use zone
EX	issue exception [code]
OSC	Installation On-Scene Coordinator
PM	Integrated Pest Management
RT	Installation Response Team
TP	Industrial Toxic Project
WTP	industrial wastewater treatment plant
CS	Joint Chief of Staff
LBP	lead-based paint
LCCA	Lead Contamination Control Act
LTI	Lead Toxicity Investigation

(continued)

Acronym	Expansion
MAJCOM	Major Command
MCL	maximum contaminant level
MFH	military family housing
MILCON	military construction
MIPR	Military Interdepartmental Purchase Request
MOA	Memorandum of Agreement
MOGAS	motor gasoline
MP	Management Practice
MSDS	material safety data sheet
MSHA	Mine Safety and Health Administration
MSW	municipal solid waste
MSWLF	municipal solid waste landfill
NACE	National Association of Corrosion Engineers
NFPA	National Fire Protection Association
NLR	noise level reduction
NOI	notice of intent
NOV	notice of violation
NPS	nonpoint or nonstationary source
NPWS	nonpublic water system
NTNCWS	nontransient noncommunity water system
O&M	Operations and Maintenance
OCONUS	outside of the continental United States
ODC	ozone depleting chemical
ODS	ozone depleting substance
OEBGD	Overseas Environmental Baseline Guidance Document
OPR	Office of Primary Responsibility
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PCMS	Project by Contract Management System
PDC	Programming, Design, and Construction (System)
PEL	permissible exposure limit
POC	point of contact
POE	point-of-entry
POL	petroleum, oil, and lubricants

A and	Glossary of Acronyms (continued)
Acronym	Expansion
POTW	publicly-owned treatment works
POU	point-of-use
PPE	personal protective equipment
PWS	public water system
QA/QC	Quality Assurance/Quality Control
QC&I	Quality Control and Inspection
QRP	qualified recycling program
RAC	Risk Assessment Code
RAMP	Radon Assessment and Mitigation Program
RCRA/HSWA	Resource Conservation and Recovery Act/Hazardous and Solid Waste Act Amendments
RCS	Report Control Symbol
RDF	refuse derived fuel
RMA	require management action
RQ	reportable quantity
RRR	Resource Recovery and Recycling
RT	Republic of Turkey
SAF	Secretary of the Air Force
SARA	Superfund Amendment and Reauthorization Act
SBSS	Standard Base Supply System
SEL	sound exposure level
SF	standard form
SOFA	Status of Forces Agreement
SPCC	Spill Prevention, Control, and Countermeasures (Plan)
SWDA	Solid Waste Disposal Act
TIM	Technical Information Memorandum
TM	Technical Manual
ТО	Technical Order
TSDF	treatment, storage, and disposal facility
TSS	total suspended solids
UIC	unit identification code
ULV	ultra-low volume
UPC	Uniform Plumbing Code
USACERL	U.S. Army Construction Engineering Research Laboratories

(continued)

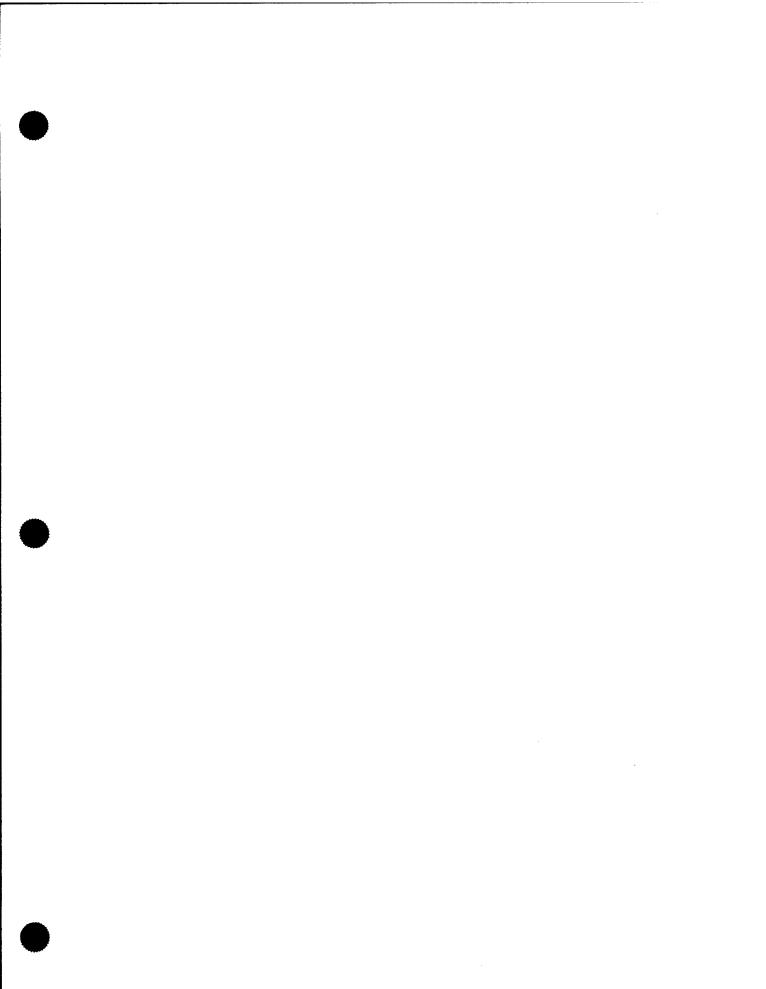
Acronym	Expansion
USAF	U.S. Air Force
USAFE	U.S. Air Force - Europe
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VHAP	volatile hazardous air pollutants
VOC	volatile organic compound
VOL	volatile organic liquid
WIMS	Work Information Management System
WIMS-ES	Work Information Management System-Environmental Subsystem
WWTP	wastewater treatment plant

4

Abbreviations

С	Celsius	mgd	million gallons per day
cm	centimeter	μg	microgram
cm ²	square centimeter	μm	micrometer
F	Fahrenheit	min	minute
ft	feet	mo	month
ft ²	square feet	mm	millimeter
ft ³	cubic feet	mm Hg	millimeters of Mercury
g	gram	mrem	millirem
gal	gallons	MW	MegaWatt
gpd	gallons per day	NTU	nephelometric turbidity unit
gpm	gallons per minute	pCi	picoCurie
gr	grain	ppm	parts per million
gr/dscf	grain/dry standard cubic foot	ppmv	parts per million by volume
h	hour	psi	pounds per square inch
ha	hectare	psia	pounds per square inch absolute
in.	inch	psig	pounds per square inch gauge
J	Joule	qt	quart
kg	kilogram	S	second
kPa	kiloPascal	V	volt
kW	kiloWatt	•	
L	liter		
lb	pound		
m	meter		
m ²	square meter		
m^3	cubic meter		
mi	mile		
mg	milligram		

		Chemicals	
CO	carbon monoxide	NO ₂	nitrogen dioxide
CO ₂	carbon dioxide	NO _x	nitrogen oxides
Hg	mercury	SO ₂	sulfur dioxide



Metric Conversion Table

The following conversion table may be used throughout this manual to convert the measures stated in U.S. units to their approximate metric equivalents.

1 in.	=	25.4 mm
1 ft	=	0.3048 m
1 kip	=	4448 N
1 psi	=	6.89 kPa
1 psi	=	89.300 g/cm ²
1 lb	=	0.453 kg
1 lb/h	=	0.126 g/s
1 cu ft	=	0.028 m ³
1 mi	=	1.61 km
1 sq ft	=	0.093 m ²
1 gal	=	3.78 L
°F	=	(°C + 17.78) x 1.8
°C	=	0.55 (°F - 32)
1 yd	=	0.9144 m
1 Btu/lb	=	0.556 cal/g

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SECTION 1

AIR EMISSIONS MANAGEMENT

Turkey ECAMP

SECTION 1

AIR EMISSIONS MANAGEMENT

A. Applicability of this Section

This section includes regulations, responsibilities, and compliance requirements associated with air pollution emissions at Air Force (AF) installations. The major sources of air pollution emissions at AF installations are:

- particulates, SO_2 , and NO_x from fuel burning at steam plants and boilers
- particulate emissions from the operation of classified material and pathological incinerators
- the emission of volatile organic compound (VOC) vapors from the storage and transfer of certain petroleum fuels and chemicals (solvents), and the operation of degreasers and other processes (paint stripping and metal finishing) that use solvents.

Most AF installations have air emissions sources in each of these four categories. Therefore, this section is applicable to some extent at all AF installations.

The regulatory requirements in this section are based on Department of Defense (DOD), Air Force Regulations (AFRs) and Air Force Instructions (AFIs) that apply at overseas installations. Management Practices (MPs) are derived from U.S. Environmental Protection Agency (USEPA) regulations that are not mandatory overseas but are important to follow to preserve the health and safety of AF employees and protect the environment. Any procedural USEPA requirements, such as permits and notifications, are not applicable overseas and, therefore, are not in the Republic of Turkey Manual. MPs in the Air Emissions section are derived from the following USEPA regulations: 40 Code of Federal Regulations (CFR) 51, 60, and 80.

B. DOD Directives/Instructions

• Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 2, outlines performance standards for fossil fuel fired steam generators, electric utility steam generators, and incinerators. Motor vehicles, ozone-depleting substances, and VOCs are also included.

C. U.S. Air Force Documents

• AFR 19-6, Air Pollution Control Systems for Boilers and Incinerators, 9 May 1988, provides guidance on how to select, design, operate, and maintain emission control devices on boilers and incinerators. This AFR is scheduled to be replaced by Air Force Joint Regulation (AFJ) 132-1056.

D. Responsibility for Compliance

- The Combat Support Group Commander is usually the person responsible for compliance.
- Base Civil Engineering (BCE) is responsible for the maintenance of incinerators and fuel handling and storage equipment, as well as the operation and maintenance of all fuel burners (boilers). The

heating and boiler plants are responsible for the operation of fuel burners and are part of the Operations Branch of Civil Engineering.

- The regional hospital or base clinic is responsible for the operation of any pathological incinerators located in its facility.
- The Fuels Management Branch of Base Supply is responsible for the operation of all fuel handling, transportation (tanks and/or pipelines), and storage facilities on base. They are also responsible for insuring that all fuels satisfy specifications.
- The Fuels Management Branch is also responsible for operating the Military Service Station that dispenses leaded or unleaded fuel.
- The Automotive Maintenance Branch of Base Transportation is responsible for the emission testing and vehicle maintenance required by FGS-Turkey.
- The various maintenance squadrons at the base are responsible for the operation of degreasers and other industrial processes that are regulated or may require operating permits.
- The Base Exchange operates a service station that dispenses leaded and unleaded fuels and is subject to the requirements of FGS-Turkey. The service station is normally operated by a contractor, but the labeling and nozzle size regulations still apply. The Government is responsible for compliance, but the contractor may also be responsible, depending on the contract wording.
- Bioenvironmental Engineering Services (BES) is responsible for monitoring ambient air quality.

E. Definitions

- *Coal Refuse* waste products of coal mining, cleanings, and coal preparation operations (e.g., culm, gob, etc.), containing coal, matrix material, clay, and other organic and inorganic material (FGS-Turkey 20).
- *Electric Utility Steam Generating Unit* any furnace, boiler, or other device used for combusting fuel for the purpose of producing steam to generate electricity (FGS-Turkey 20).
- *Existing* any facility, source, or project in use or under construction before 1 October 1994, unless it is subsequently substantially modified (FGS-Turkey 20).
- *Incinerator* any furnace used in the process of burning solid or liquid waste for the purpose of reducing the volume of the waste by removing combustible matter, including equipment with heat recovery systems for either hot water or steam generation (FGS-Turkey 20).
- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- New any facility, discharge source, or project with a construction start date, or that was significantly modified, on or after 1 October 1994 (FGS-Turkey 20).

- *Nontactical Vehicles* commercially available vehicles that are adapted for military use (FGS-Turkey 20).
- Ozone-Depleting Substances (ODS) those substances listed in Table 1-1 (FGS-Turkey 20).
- Steam Generating Unit any furnace, boiler, or other device used for combusting fuel for the purpose of producing steam, including fossil fuel fired generators associated with the combined cycle of gas turbines; nuclear steam generators are not included (FGS-Turkey 20).
- Substantial Modification any modification the cost of which exceeds \$1 million, regardless of funding source (FGS-Turkey 20).
- Volatile Organic Compound (VOC) any compound of carbon and hydrogen or containing carbon and hydrogen in combination with any other element which has a vapor pressure of 1.5 psia (77.6 mm Hg) or greater under actual storage conditions.

(NOTE: Although an entry for this term is found in FGS-Turkey, Chapter 20, no definition is associated with it. The definition supplied here is taken from the FGS for the United Kingdom, a document prepared by the same Executive Agent.)

• *Wood Residue* - bark, sawdust, slabs, chips, shavings, mill trim, and other wood products derived from wood processing and forest management operations (FGS-Turkey 20).



AIR EMISSIONS MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations	1-1 and 1-2	(1)(2)(11)
Fuel Burning Facilities (central steam plant, hot water boiler, or hot water steam boiler)	1-3 through 1-10	(1)(2)(3)(4)
Fuel Burning Sources	1-11 through 1-16	(2)(3)
Incinerators	1-17	(2)(3)
Gasoline	1-18 and 1-19	(4)(5)(10)
Motor Vehicles	1-20	(5)
VOCs	1-21 through 1-24	(2)(3)(4)
Fugitive Emissions	1-25 through 1-30	(2)(3)
Vapor Degreasers	1-31	(3)(4)(5)(7)(8)(9)(10)
Dry Cleaning	1-32	(2)(3)
Chlorofluorocarbons (CFCs) and Halons	1-33	(2)(5)(6)(7)(8)(9)

(a) CONTACT/LOCATION CODE:

- (1) BCE (Base Civil Engineering/Environmental Planning)
- (2) BES (Bioenvironmental Engineering Services)
- (3) Air Pollution Source Operator
- (4) Fuels Management Branch
- (5) Transportation Maintenance Branch
- (6) Logistics Supply (LGS (Base Supply))
- (7) SV (Services Squadron) Auto Hobby Shop
- (8) Refrigeration Shops (BCE)
- (9) Equipment Maintenance Squadron
- (10) AAFES (Army/Air Force Exchange Service) Gas Station
- (11) Staff Judge Advocate

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AIR EMISSIONS MANAGEMENT

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Records To Review

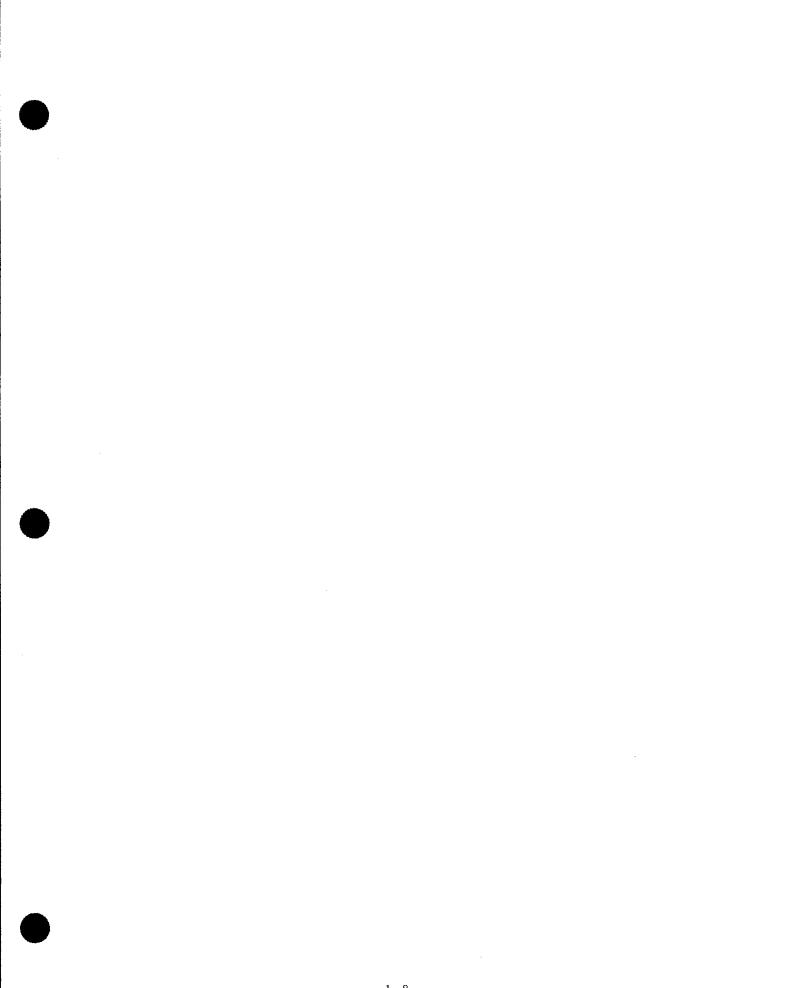
- Emission monitoring records
- Opacity records
- Instrument calibration and maintenance records
- Reports/complaints concerning air quality
- Republic of Turkey regulatory inspection reports
- Documentation of preventive measures or actions
- Results of air sampling at the conclusion of response action
- List of boilers and their sizes

Physical Features To Inspect

- All air pollution sources (fuel burners, incinerators, VOC sources, etc.)
- Air pollution monitoring and control devices
- Air emission stacks
- Air intake vents

People To Interview

- BCE (Base Civil Engineering/Environmental Planning)
- BES (Bioenvironmental Engineering Services)
- Air Pollution Source Operator
- Fuels Management Branch
- Transportation Maintenance Branch
- LGS (Base Supply)
- SV (Services Squadron) Auto Hobby Shop
- Refrigeration Shops (BCE)
- Equipment Maintenance Squadron
- AAFES (Army/Air Force Exchange Service) Gas Station
- Staff Judge Advocate



COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
ALL INSTALLATIONS		
1-1. Copies of all relevant DOD directives/ instructions, USAF directives, and guidance documents on air emissions should be maintained at the installation (MP).	Verify that the Base Staff Judge Advocate has available the host-nation Final Gov- erning Standards and relevant USAF documents. (1)(11)	
	(NOTE: Regulations on asbestos management are addressed in Section 9, Special Programs Management.)	
1-2. Installations must meet regulatory and AF requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether any new regulations concerning air quality have been issued since the finalization of the manual. (1)(2)	
	Verify that the installation is in compliance with newly issued regulations.	
FUEL-BURNING FACILITIES	(NOTE: Emissions limitations and percent reduction requirements are determined on a 30-day rolling average.)	
	(NOTE: Particulate matter emission criteria do not apply during periods of startup, shutdown, and malfunction.)	
	(NOTE: SO_2 emission criteria do not apply during periods of start-up and shutdown and when emergency conditions exist.)	
1-3. New or substantially	Determine whether the facility burns coal, oil, wood, or a combination of fuels. (3)	
modified fossil fuel fired steam generating units with a heat input capacity of greater than 100 MBtu/ h heat input must meet specific emissions limita- tions for particulate mat- ter and SO ₂ (FGS-Turkey 2-1.A through 2-1.D).	Verify that no flue gas discharged into the atmosphere contains particulate matter in excess of 43 ng/J heat input (0.10 lb/MBtu) derived from fossil fuel or fossil fuel and wood residue.	
	Verify that discharged flue gases do not exhibit more than 20 percent opacity, except for one 6-min period per hour of not more than 30 percent opacity.	
	Verify that discharged flue gases do not contain SO_2 in excess of 340 ng/J heat input (0.80 lb/MBtu) derived from liquid fossil fuel or liquid fossil fuel and wood residue.	
	Verify that discharged flue gases do not contain SO_2 in excess of 520 ng/J heat input (1.2 lb/MBtu) derived from solid fossil fuel or solid fossil fuel and wood residue.	

⁽¹⁾ BCE (Base Civil Engineering/Environmental Planning (2) BES (Bioenvironmental Engineering Services) (3) Air Pollution Source Operator (4) Fuels - Management Branch (5) Transportation - Maintenance Branch (6) LGS (Base Supply) (7) SV (Services Squadron) Auto Hobby Shop (8) Refrigeration Shops (BCE) (9) Equipment Maintenance Squadron (10) AAFES (Army/Air Force Exchange Service) Gas Station (11) Staff Judge Advocate

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
1-4. New or substantially modified fossil fuel fired steam generating units with a heat input capacity of greater than 100 MBtu/h must meet specific emissions limitations for NO_x (FGS-Turkey 2-1.E through 2-1.G).	 Verify that flue gas discharged to the atmosphere does not contain NO_x in excess of the following: (2)(3) 86 ng/J heat input (0.20 lb/MBtu) derived from gaseous fossil fuel 129 ng/J heat input (0.30 lb/MBtu) derived from liquid fossil fuel, liquid fossi fuel and wood residue, or gaseous fossil fuel and wood residue 300 ng/J heat input (0.70 lb/MBtu) derived from solid fossil fuel or solid fossi fuel and wood residue 260 ng/J heat input (0.60 lb/MBtu) derived from lignite or lignite and wood residue Verify that, if they are compatible with existing combustion configurations, low excess air/low NO_x burners are used in new construction and major modifications. (NOTE: This does not apply when a fossil fuel containing at least 25 percent by weight of coal refuse is burned in combination with gaseous, liquid, other solid fossi fuel, or wood residue.)
1-5. New or substantially modified fossil fuel fired steam generating units with a maximum design heat input capacity of greater than 100 MBtu/h must meet specific requirements with regard to fuel sulfur content (FGS-Turkey 2-1.H).	Verify that the installation conducts and records measurements of fuel sulfur content for each fuel batch. (3)(4) Verify that the fuel sulfur content does not exceed 0.5 percent by weight.
1-6. New or substantially modified fossil fuel fired steam generating units with a maximum design heat input capacity of greater than 100 MBtu/h must maintain records of ash contents and higher heating values (FGS-Turkey 2-1.I).	Verify that the installation maintains a record of ash contents and higher heating values for the fuel combusted in the source. (3)(4)

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
1-7. New or substantially modified steam generating units or electric utility steam generating units rated greater than 100 MBtu/h heat input must operate a properly calibrated and maintained continuous emissions monitoring (CEM) system for opacity, NO _x , and the O ₂ or CO ₂ content of flue gases (FGS-Turkey 2-3).	Verify that the opacity of emissions is continuously monitored, except where gaseous or distillate fuels are the only fuels combusted. (2)(3) Verify that NO _x emissions are continuously monitored. Verify that the O ₂ or CO ₂ content of flue gases is continuously monitored at each location where either SO ₂ or NO _x emissions are monitored.	
1-8. New or substantially modified electric utility steam generating units with a rated capacity of greater than 100 MBtu/h heat input must meet specific emissions limitations (FGS-Turkey 2-2).	 Verify that flue gases discharged into the atmosphere do not contain particulate matter in excess of 13 ng/J heat input (0.03 lb/MBtu) derived from the combustion of solid, liquid, or gaseous fuel. (2)(3) Verify that no flue gases are discharged that: exhibit greater than 20 percent opacity, except for one 6-min period per hour of not more than 30 percent opacity contain SO₂ in excess of 520 ng/J heat input (1.2 lb/MBtu) and 10 percent of the potential combustion concentration derived from solid fuel contain SO₂ in excess of 340 ng/J heat input (0.80 lb/MBtu) and 10 percent of the potential combustion concentration derived from liquid or gaseous fuels contain NO_x in excess of the emissions limits listed in Table 1-2. (NOTE: When emissions of SO₂ are less than 260 ng/J heat input (0.60 lb/MBtu), there is a limit of 30 percent of the potential combustion concentration derived from solid fuel.) (NOTE: The following fuels require the specified percent reduction in potential combustion concentrations: gaseous fuels, 25 percent liquid fuels, 30 percent. verify that fuel consumption and electrical steam output values are verified monthly in order to calculate boiler efficiency. 	

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
	August 1997
	 Verify that the identified steam generating unit has an annual tune-up to ensure conbustion efficiency of the unit so that the following requirements are met: (1)(2)(3) for natural gas, the minimum excess O₂ level at high firing rates is 0.5 percent through 3 percent for liquid fuels, the minimum excess O₂ levels at high firing rates is 2 percent through 4 percent CO emissions are below 400 ppm by volume the flame is stable and does not impinge on the furnace walls or burner parts.
1-10. New or substan- tially modified steam gen- erating units or electric utility steam generating units rated greater than 100,000 Btu/h heat input must operate a properly calibrated and main- tained CEM system to measure O_2 emissions and CO emissions (FGS- Turkey 2-5).	Verify that such steam generating units operate a properly calibrated and maintain CEM system for O_2 emissions and CO emissions. (3)
FUEL BURNING SOURCES	
1-11. Fuel burning facilities with greater than 250 MBtu/h heat input should	Verify that the opacity of emissions is less than 20 percent, except for one 6-min period of no greater than 27 percent per hour. (2)(3)
meet specific emissions standards (MP).	Verify that particulate emissions do not exceed 0.10 lb/MBtu.
	Verify that SO_2 emissions do not exceed levels outlined in Table 1-3. Verify that NO_x emissions do not exceed levels outlined in Table 1-3.

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
1-12. Fuel burning facil- ities with greater than 250 MBtu/h heat input should be equipped with specific types of monitoring instruments (MP).	 Verify that the following monitors are in place: (2)(3) NO₂ continuous monitor opacity monitor (except in gaseous fuel burners) SO₂ monitor (except for fossil fuel fired steam generators not using a fuel gas desulfurization device, and gaseous fuel burners) fuel sampling monitor when SO₂ monitor is not required CO₂ or O₂ monitors (except when continuous monitoring systems are not required for SO₂ or NO_x). Verify that such monitors are calibrated and properly maintained. Verify that, for fuel consumption and electrical steam output instruments: instruments are correctly installed and operating instruments are calibrated every 24 h monitoring records are maintained for 2 yr. Verify that records of fuel analysis are maintained and contain information on: sulfur content ash content heating value. 	
1-13. Steam generating units with a maximum design heat input capacity of greater than or equal to 10 MBtu/h but less than 100 MBtu/h should meet specific standards for emissions of particulates (MP).	 Verify that facilities that combust coal or mixtures of coal with other fuels and have a heat input capacity of 30 MBtu/h or greater do not discharge particulate matter in excess of: (2)(3) 22 ng/J heat input (0.05 lb/MBtu), if the facility combusts only coal or coal with other fuels and has an annual capacity factor of 10 percent for the other fuels 43 ng/J heat input (0.10 lb/MBtu), if the facility combusts coal with other fuels, and has an annual capacity factor greater than 10 percent for the other fuels. Verify that facilities that combust wood or mixtures of wood with other fuels, except coal, and have a heat input capacity of 30 MBtu/h or greater do not discharge particulate matter in excess of: 43 ng/J heat input (0.10 lb/MBtu) if the facility has an annual capacity factor for wood greater than 30 percent 130 ng/J heat input (0.30 lb/MBtu) if the facility has an annual capacity factor for wood of 30 percent or less. Verify that facilities with a heat input capacity of greater than 30 MBtu/h that combust coal, wood, or oil do not discharge gases with greater than 20 percent opacity (6-min average), except for one 6-min period per hour of not more than 27 percent opacity. 	

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
1-13. (continued)	(NOTE: Particulate matter and opacity standards apply at all times, except durin periods of startup, shutdown, or malfunction.)	
1-14. Steam generating units with a maximum design heat input capacity of greater than or	Verify that the installation installs, calibrates, maintains, and operates CEM system for measuring SO ₂ concentrations and either O ₂ or CO ₂ concentrations at the outle of the SO ₂ control device or the outlet of the steam generating unit if no control device is used. (2)(3)	
equal to 10 MBtu/h, but less than 100 MBtu/h, should meet specific mon- itoring standards for SO ₂	Verify that, if CEM systems for SO_2 are not used, the fuel is sampled prior to con bustion.	
and particulate matter (MP).	Verify that the installation installs, calibrates, maintains, and operates a continuou monitoring system for measuring opacity.	
1-15. Municipal waste combustors with a capacity greater than 225 Mg (250 tons) per day of municipal solid waste or refuse-derived fuel should meet specific operational standards (MP).	 Verify that gases are not discharged that contain the following constituents in excess of the least stringent amount listed: (2)(3) dioxin/furan in excess of 30 ng per dry standard cubic meter (dscm) (12 grain per billion dry standard cubic foot (gr/bdscf), corrected to 7 percent O₂ (dr basis) SO₂ in excess of 20 percent of the potential SO₂ emission rate or 30 ppm be volume, corrected to 7 percent O₂ (dry basis) hydrogen chloride in excess of 5 percent of the potential hydrogen chloride in excess of 5 percent of the potential hydrogen chloride in excess of 5 percent of the potential hydrogen chloride emission rate (95 percent reduction by weight or volume), or 25 ppm by volume, corrected to 7 percent O₂ (dry basis) NO_x emissions in excess of 180 ppm by volume, corrected to 7 percent O₂ (dry basis). 	
	Verify that facilities meet the operating standards for CO emissions outlined in Table 1-4.	
	 Verify that the installation implements the following operating practices: facilities do not operate at a load level greater than 110 percent of the maximum demonstrated municipal waste combustor unit load facilities do not operate at a temperature exceeding 17 °C [≈62 °F] above the maximum demonstrated particulate matter control device temperature. 	

Republic of Turkey ECAMP REGULATORY REVIEWER CHECKS:		
REQUIREMENTS:	August 1997	
REGULATORY REQUIREMENTS: 1-16. Municipal waste combustors with a capac- ity greater than 225 Mg (250 tons) per day of municipal solid waste or refuse-derived fuel should meet specific recordkeep- ing requirements (MP).	REVIEWER CHECKS: August 1997 Verify that the installation maintains an operating manual at the facility. (2)(3) Verify that the operating manual includes: applicable standards procedures for receiving, handling, and feeding municipal solid waste operational provisions for meeting emission standards operational provisions for meeting emission standards response procedures for emergency situations monitoring procedures procedures for handling ash reporting and recordkeeping requirements. Verify that the installation updates the operating manual annually. Verify that the installation maintains records of the following for 2 yr: emissions rates dates when excess emissions were identified and reason for excess emissions operational data have not been obtained and the reasons identification of the times when SO ₂ or NO _x emissions or operational data have been excluded from the calculation of average emission monitoring systems drift tests and accuracy assessments results of all annual performance tests CEM data for opacity, SO ₂ , NO _x , CO, load level, and particulate matter control device temperature names of the people who have completed the review of th	

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
INCINERATORS	
1-17. All waste incinerators must meet specific emissions limitations (FGS-Turkey 2-6).	Verify that no incinerator discharges any gas into the atmosphere that contains parti- ulate matter in excess of 0.18 g/dscm (0.08 gr/dscf) corrected to 12 percent CO ₂ . (2)(3) Verify that incinerators that process beryllium-containing waste, beryllium, beryl- lium oxide, or beryllium alloys do not emit more than 10 g [0.02 lb] of beryllium int the atmosphere over a 24-h period.
GASOLINE	
1-18. Leaded gasoline should not be introduced into any motor vehicle that is labeled UNLEADED GASO-LINE ONLY or that is equipped with a gasoline tank filler inlet designed for introduction of unleaded gasoline (MP).	Determine what grades of gasoline are used and where they are dispensed. (4)(5)(1 Verify that controls are in place to ensure proper fueling of vehicles. Verify that fuel pump nozzles are properly sized.
1-19. Bulk gasoline terminals that deliver liquid product into large tank	(NOTE: A bulk gasoline terminal is any gasoline facility that receives gasoline pipeline, ship, or barge, and has a gasoline throughput greater than 75,700 L/day 20,000 gal/day].)
trucks should meet spe- cific operating standards (MP).	Verify that the bulk gasoline terminal has a vapor collection system designed to collect the total organic compound vapors displaced from tank trucks during produloading and to prevent the total organic compounds collected at on-loading rack from passing to another loading rack. (4)(5)
	Verify that emissions from the vapor collection system do not exceed 35 mg of to organic compound per liter of gasoline loaded.
	Verify that the following loading procedures are followed:
	 vapor tightness documentation is available for each gasoline tank truck the tank identification number is recorded as each gasoline tank truck is loade each tank identification number is cross-checked with the file of tank vap tightness documentation within 2 wk after the tank is loaded steps are taken to ensure that only vapor-tight tanks are loaded and that vap collection systems are operational.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
1-19. (continued)	Verify that the vapor collection and liquid loading equipment is designed and oper- ated to prevent gauge pressure in the delivery tank from exceeding 4500 Pa (450 mm of water) during product loading.	
	Verify that pressure vacuum vents in the vapor collection system do not open at a system pressure of less than 4500 Pa (450 mm of water).	
	Verify that the installation conducts a monthly inspection of the vapor collection system, the vapor processing system, and each loading rack handling gasoline.	
	Verify that the above inspections are conducted when loading is in progress.	
	Verify that the installation establishes inspection records and keeps them on file for 2 yr.	
	Verify that leaks are repaired within 15 calendar days after detection.	
	Verify that records of all replacements or additions of components performed on existing vapor processing systems are kept for at least 3 yr.	
MOTOR VEHICLES		
1-20. Installations must naintain DOD-owned,	Verify that all vehicles are inspected every 2 yr to ascertain if the factory-installed emission control equipment is intact and operational. (5)	
nontactical vehicles so as to prevent excessive emissions (FGS-Turkey 2-9).	Verify that, if available on the local economy, only unleaded gasoline is used in vehi- cles designed for unleaded gasoline.	
VOCs		
1-21. Publication roto- gravure printing presses,	Determine whether the installation operates any publication rotogravure printing presses. (3)	
except for proof presses, should meet specific VOC emissions standards (MP).	Verify that gases are not being discharged that contain VOCs in amounts greater than or equal to 16 percent of the total mass of VOC solvent and water used at that facility during any single performance averaging period.	
	(NOTE: Each performance averaging period is 30 consecutive calendar days.)	
	Verify that, if the installation uses waterborne ink systems or solventborne ink systems with solvent recovery systems, it records:	
	 the amount of solvent and water used the amount of solvent recovered an estimated emission percentage for each calendar month. 	

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
1-21. (continued)	Verify that the installation maintains these records for 2 yr.
1-22. Liquid petroleum storage vessels with a	Determine the true vapor pressure of the liquids stored in such vessels. (2)(4)
storage capacity greater than 151,600 L (40,000 gal) should meet specific standards (MP).	Verify that vessels storing petroleum liquid with a true vapor pressure equal to or greater than 1.5 psia [10.3 kPa absolute], but less than 11.1 psia [76.5 kPa absolute], are equipped with one of the following:
	 an external floating roof a fixed roof with an internal floating type cover equipped with a continuous closure device between the tank wall and edges a vapor recovery system that collects all VOC vapors and gases discharged from the storage vessel and a vapor return or disposal system to process the VOC vapors and gases to reduce emissions by at least 95 percent by weight an equivalent, approved system.
	Verify that vessels storing petroleum liquids with a vapor pressure greater than 11.1 psia [76.5 kPa absolute] are equipped with a vapor recovery system that collects all VOC vapors and gases and a vapor return or disposal system that is designed to process the VOC vapors to reduce emissions by at least 95 percent by weight.
	Verify that the installation takes the following measurements:
	 gap measurement for primary seals of external floating roofs at least once every 5 yr gap measurement for secondary seals of external floating roofs at least annually.
	Verify that the installation keeps records of the following:
	 gap measurement, for at least 2 yr following the date of measurement the petroleum liquid stored, the period of storage, and the maximum true vapor pressure during the storage, unless the storage vessel has a vapor recovery and return or disposal system.
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REVIEWER CHECKS: August 1997 termine the vapor pressure of the liquids stored in such vessels. (2)(4) rify that storage vessels with a design capacity greater than or equal to 151 m 39,890 gal] containing VOL with a vapor pressure equal to or greater than 5.2 kP 75 psia], but less than 76.6 kPa [11.1 psia], or storage vessels with a capacit eater than or equal to 75 m ³ [≈19,800 gal], but less than 151 m ³ [≈39,890 gal], con ning VOL that has a maximum vapor pressure equal to or greater than 5.2 kP 75 psia], but less than 76.6 kPa [11.1 psia], are equipped with one of the follow - a fixed roof in combination with an internal floating roof - an external floating roof - a closed vent system and control device that reduces emissions by 95 percent by weight
rify that storage vessels with a design capacity greater than or equal to 151 m 39,890 gal] containing VOL with a vapor pressure equal to or greater than 5.2 kP 75 psia], but less than 76.6 kPa [11.1 psia], or storage vessels with a capacit ater than or equal to 75 m ³ [≈19,800 gal], but less than 151 m ³ [≈39,890 gal], cor- ning VOL that has a maximum vapor pressure equal to or greater than 5.2 kP 75 psia], but less than 76.6 kPa [11.1 psia], are equipped with one of the follow :: - a fixed roof in combination with an internal floating roof - an external floating roof - a closed vent system and control device that reduces emissions by 95 percer
 an external floating roof a closed vent system and control device that reduces emissions by 95 percent
- an approved, equivalent system. rify that storage vessels with a design capacity greater than or equal to 75 n .9,800 gal] containing a VOL with a maximum true vapor pressure greater than
 a to 76.6 kPa [11.1 psia] are equipped with one of the following: a closed vent system and control device that reduces emissions by 95 perce by weight an approved, equivalent alternative method.
rify that the accumulated area of gaps does not exceed 212 cm ² /m [10.02 in. ² /ft] k diameter between the tank wall and the primary seal and that the width of an tion of any gap does not exceed 3.81 cm [1.5 in.].
rify that the accumulated area of gaps does not exceed 21.2 cm^2/m [1 in. ² /ft] k diameter between the tank wall and the secondary seal and that the width of artion of any gap does not exceed 1.27 cm [0.5 in.].
rify that the installation inspects internal floating roofs, primary seals, and second seals for holes, tears, or defects before filling the tank. $(2)(3)(4)$
rify that the installation conducts visual inspections of the internal floating ro d primary or secondary seals of vessels with a liquid-mounted or mechanical sho mary seal at least once every 12 mo after the initial fill.
rify that the installation either repairs vessels or removes them from service with days of discovering problems.
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REGULATORY REQUIREMENTS:	Republic of Turkey ECAMP REVIEWER CHECKS: August 1997
1-24. (continued)	Verify that the installation inspects internal floating roofs, primary seals, secondary seals, gaskets, slotted membranes, and sleeve seals each time the storage vessel is emptied and degassed.
	Verify that, when control equipment is installed, gap areas are measured at least:
	- once every 5 yr for gaps between the tank wall and the primary seal - once a year for gaps between the tank wall and the secondary seal.
	Verify that, for vessels with a design capacity greater than or equal to 151 m ³ [\approx 39,890 gal], storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa [0.5 psia], or with a design capacity greater than or equal to 75 m ³ [\approx 19,800 gal], but less than 151 m ³ [\approx 39,890 gal], storing a liquid with a true vapor pressure greater than or equal to 15.0 kPa [2.2 psia], the installation keeps a record of the following:
	 the VOL stored the period of storage the maximum true vapor pressure of that VOL during the storage period.
	(NOTE: This requirement does not apply to vessels that store a waste mixture of indefinite or variable composition or vessels equipped with a closed vent system and control device.)
FUGITIVE EMISSIONS	
1-25. Installations should manage the emission of volatile hazardous	Determine whether the installation operates sources in VHAP service. (2)(3) Verify that, when a leak is detected:
air pollutants (VHAPs) In accordance with spe- cific requirements (MP).	 weatherproof and readily visible identification, marked with the equipment identification number, is attached to the leaking equipment identification is removed only after no leak has been detected for 2 mo or the leak is repaired leaks detected for pumps, compressors, pressure-relief devices in liquid service, and flanges are recorded in a log that is maintained for 2 yr at a readily accessible location.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
1-25. (continued)	Verify that the following records are maintained:
	 a list of identification numbers of all equipment to which a standard applies a list of equipment designated for no detectable emissions dates of compliance tests a list of identification numbers for equipment in vacuum service information and data used to demonstrate that a piece of equipment is not i VHAP service.
	(NOTE: VHAPs include vinyl chlorides and benzene from pumps, compressors pressure relief devices, sampling connection systems, flanges and other connectors and product accumulator vessels operating in VHAP service.)
1-26. Installations should monitor and con-	Determine whether the installation operates pumps in VHAP service. (2)(3)
trol the emission of VHAPs from pumps in	Verify that the installation visually inspects such pumps for leaks each week.
VHAPs from pumps in VHAP service (MP).	Verify that the installation monitors pumps monthly for leaks, using standard te methods.
	Verify that leaks are repaired within 15 days of their discovery.
1-27. Installations	Determine whether the installation operates compressors in VHAP service. (2)(3)
should monitor and con- trol the emission of VHAPs from compres-	Verify that compressors are equipped with a seal system that includes a barrier flui system and prevents leakage of process fluids.
sors in VHAP service (MP).	Verify that the seal system:
	 operates with the barrier fluid at a pressure greater than the compressor stuffin box pressure, or is equipped with a barrier fluid system connected by a closed-vent system to control device, or is equipped with a system that purges the barrier fluid into a process stream wit zero VHAP emissions
	 - contains barrier fluid that is not in VHAP service. Verify that barrier fluid systems are equipped with a sensor to detect the failure of th
	seal system, barrier fluid system, or both. Verify that sensors are checked daily or have an audible alarm, unless the compresso is located within the boundary of an unmanned plant site.

	COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Republic of Turkey ECAMP
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
1-28. Installations should monitor and control the emission of VHAPs from pressure relief devices, sampling	Determine whether the installation operates such sources in VHAP service. (2)(3) Verify that, except during pressure releases, the pressure relief devices in gas/vapor service are operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background.
connection systems, flanges and other connec- tors, and product accumu- lator vessels operating in	Verify that after a pressure release, the device is returned to a state of no detectable emissions within 5 days.
VHAP service (MP).	Verify that sampling connectors are equipped with a closed-purge system or closed- vent system that either:
	 returns the purged process fluid directly to the process line collects and recycles the purged process fluid is designed and operated to capture and transport all purged process fluid to a control device.
	Verify that pressure relief devices in liquid service and flanges and other connectors are monitored within 5 days if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method and repaired within 15 days.
	Verify that product accumulator vessels are equipped with a closed-vent system capable of capturing and transporting any leakage from the vessel to a control device.
1-29. Valves and lines in VHAP service should be operated according to	Determine whether valves and lines at the installation, including those exposed to vinyl chlorides and benzene, are in VHAP service. (2)(3)
specific procedures (MP).	Verify that open-ended values or lines are equipped with a cap, blind flange, or sec- ond value that seals the open end at all times, except during operations requiring pro- cess fluid flow through the value or line.
	Verify that open-ended values or lines with a second value are operated so that the value on the process fluid end is closed before the second value.
1-30. Systems and devices used to control VHAP emissions should	Verify that vapor recovery systems are designed and operated to recover the organic vapors vented to them with 95 percent or greater efficiency. (2)(3)
be operated according to specific standards (MP).	Verify that enclosed combustion devices are designed and operated to reduce the VHAP and benzene emissions vented to them with an efficiency of 95 percent or greater or provide a minimum residence time of 0.5 s at a minimum temperature of 760 °C [1400 °F].

	COMPLIANCE CATEC RY: AIR EMISSIONS MANAGEMENT Republic of Turkey ECAMP
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
1-30. (continued)	 Verify that closed-vent systems: have no detectable emissions are monitored annually have leaks repaired within 15 days of their discovery. Verify that closed-vent systems and control devices are operated at all times whe emissions may be vented to them. Verify that the installation maintains in a readily accessible location the followin records pertaining to closed-vent systems and control devices: detailed schematics dates and descriptions of any changes to the system periods when they are not operating dates of startups and shutdowns.
VAPOR DEGREASERS 1-31. Vapor degreasers in use after 1 January 1995 must incorporate systems that minimize the direct release of VOCs to the atmosphere (FGS-Turkey 2-8).	Verify that the installation uses systems such as covered or refrigerated systems to minimize direct release of VOCs to the atmosphere. (3)(4)(5)(7)(8)(9)(10)
DRY CLEANING 1-32. Petroleum solvent dry cleaning dryers, washers, filters, stills, and settling tanks at petro- leum dry cleaning plants with a total manufac- turer's rated dryer capac- ity equal to or greater than 38 kg (84 lb) should meet specific standards of oper- ation (MP).	Verify that installation dryers are solvent recovery dryers. (2)(3) Verify that the petroleum solvent filters are cartridge filters that are drained in the sealed housing for at least 8 h before their removal. Verify that a clearly visible label regarding fire protection and inspection is posted of the dryer.

	COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Republic of Turkey ECAMP
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
CHLOROFLUORO- CARBONS (CFCs) AND HALONS	
	Verify that all repairs or services to nontactical vehicle air conditioners use commer- cially available refrigerant recycling equipment, operated by trained personnel. (5)(7)(8) Verify that no activity intentionally vents any Class I or Class II CFC refrigerant (see Table 1-1) in the process of maintaining, servicing, repairing, or disposing of an appliance or industrial process refrigeration unit.

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Table 1-1

Class I and Class II ODSs (FGS-Turkey, Table 2-1)

HC#	Name
CLASS I OZONE-DEPLET	TING CHEMICALS (ODCs)
CFC-11	Trichlorofluoromethane
CFC-12	Dichlorodifluoromethane
CFC-113	Trichlorotrifluoroethane
CFC-114	Dichlorodifluoroethane
CFC-115	Chloropentafluoroethane
R-500	R-500
R-502	R-502
HALON-1202	Dibromodifluoromethane
HALON-1211	Bromochlorodifluoromethane
HALON-1301	Bromotrifluoromethane
HALON-2402	Dibromotetrafluoroethane
MB	Methyl Bromide
CFC-13	Chlorotrifluoromethane
CFC-111	Pentachlorofluoroethane
CFC-112	Tetrachlorodifluoroethane
CFC-211	Heptachlorofluoropropane
CFC-212	Hexachlorodifluoropropane
CFC-213	Pentachlorotrifluoropropane
CFC-214	Tetrachlorotetrafluoropropane
CFC-215	Trichloropentafluoropropane
CFC-216	Dichlorohexafluoropropane
CFC-217	Chloroheptafluoropropane
Carbon Tetrachloride	Tetrachloromethane
Methyl Chloroform	Trichloroethane (1,1,1 TCA)
CLASS	II ODCs
HCFC-21	Dichlorofluoromethane
HCFC-22	Chlorodifluoromethane
HCFC-31	Chlorofluoromethane
HCFC-121	Tetrachlorofluoroethane

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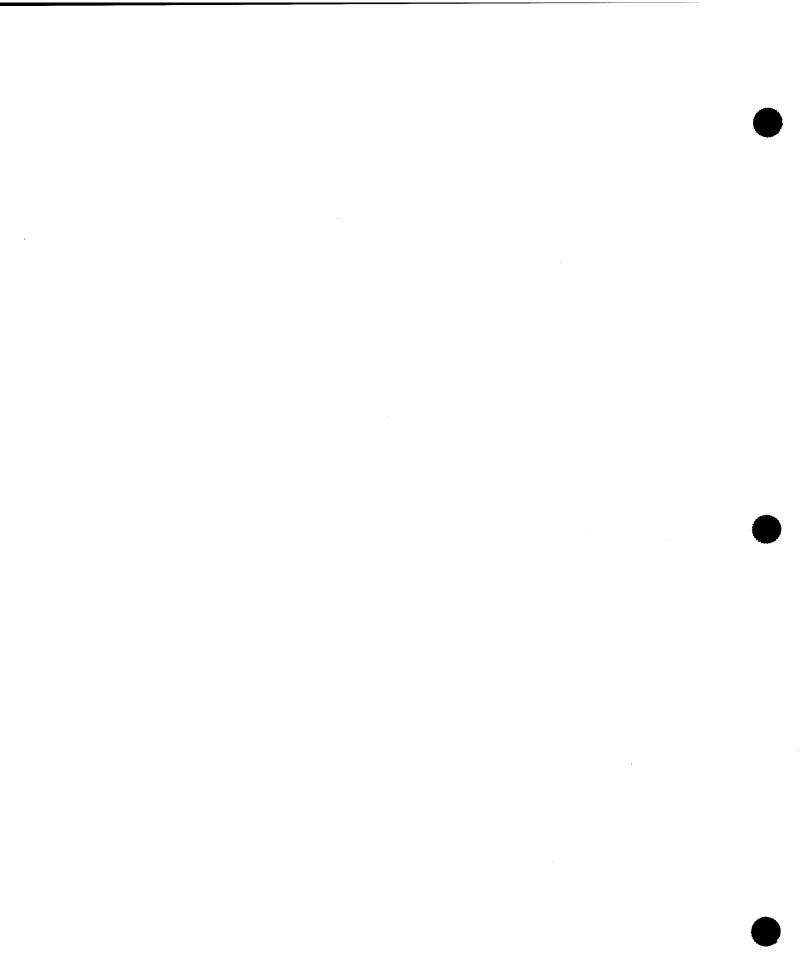
HCFC-122	Trichlorodifluoroethane
HCFC-123	Dichlorotrifluoroethane
HCFC-124	Chlorotetrafluoroethane
HCFC-131	Trichlorofluoroethane
HCFC-132	Dichlorodifluoroethane
HCFC-133	Chlorotrifluoroethane
HCFC-141	Dichlorofluoroethane
HCFC-142	Chlorodifluoroethane
HCFC-221	Hexachlorofluoropropane
HCFC-222	Pentachlorodifluoropropane
HCFC-223	Tetrachlorotrifluoropropane
HCFC-224	Trichloropentafluoropropane
HCFC-225	Dichloropentafluoropropane
HCFC-226	Chlorohexafluoropropane
HCFC-231	Pentachlorofluoropropane
HCFC-232	Tetrachlorodifluoropropane
HCFC-233	Trichlorotrifluoropropane
HCFC-234	Dichlorotetrafluoropropane
HCFC-235	Chloropentafluoropropane
HCFC-241	Tetrachlorofluoropropane
HCFC-242	Trichlorodifluoropropane
HCFC-243	Dichlorotrifluoropropane
HCFC-244	Chlorotetrafluoropropane
HCFC-251	Trichlorofluoropropane
HCFC-252	Dichlorodifluoropropane
HCFC-253	Chlorotrifluoropropane
HCFC-261	Dichlorofluoropropane
HCFC-262	Chlorodifluoropropane
HCFC-271	Chlorofluoropropane

Table 1-2

NO_x Emission Limits for New or Substantially Modified Electric Steam Generating Units (FGS-Turkey, Table 2-2)

Type of Fuel	Nanograms per Joule	Emission Limits lb/MBtu
Gaseous Fuels:		
Coal-derived	210	0.50
Other	86	0.20
Liquid Fuels:		
Coal derived and shale oil	210	0.50
Other	130	0.30
Solid Fuels:		
Coal-derived	210	0.50
Subbituminous	210	0.50
Bituminous	260	0.60
Anthracite	260	0.60
Other	260	0.60





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Table 1-3

Performance Standards (40 CFR 60)

Source Category	Fuel Type	Pollutant	Emission Level	Monitoring Requirement
	4	0 CFR 60, Subpart L	D:	
Steam genera- tors* (> 250 MBtu/h) con- structed or modi- fied after 8/17/71	Solid Fossil Fuel	Particulate Opacity SO ₂ NO _x (except lignite and coal refuse)	0.10 lb/MBtu 20%; 27% 6 min/h 1.20 lb/MBtu 0.70 lb/MBtu	None Continuous Continuous Continuous
	Liquid Fossil Fuel	SO ₂ NO _x	0.80 lb/MBtu 0.30 lb/MBtu	Continuous Continuous
	Gaséous Fossil Fuel	NO _x	0.20 lb/MBtu	Continuous
	Lignite	NO _x	0.60 lb/MBtu	Continuous
	Lignite mined in ND, SD, or MT, burned in a cyclone fired unit	NO _x	0.80 lb/MBtu	Continuous
		0 CFR 60, Subpart I	E:	
Incinerators (> 50 tons/day) constructed or modified after 8/17/71	Incinerators	Particulate CO ₂	0.08 gr/dscf** corrected to 12% CO ₂	Record of daily charging rates and hours of operation

* Does not include electric utility steam generating units that started construction or modification after 18 September 1978.

** gr/dscf - grains per dry standard cubic foot.

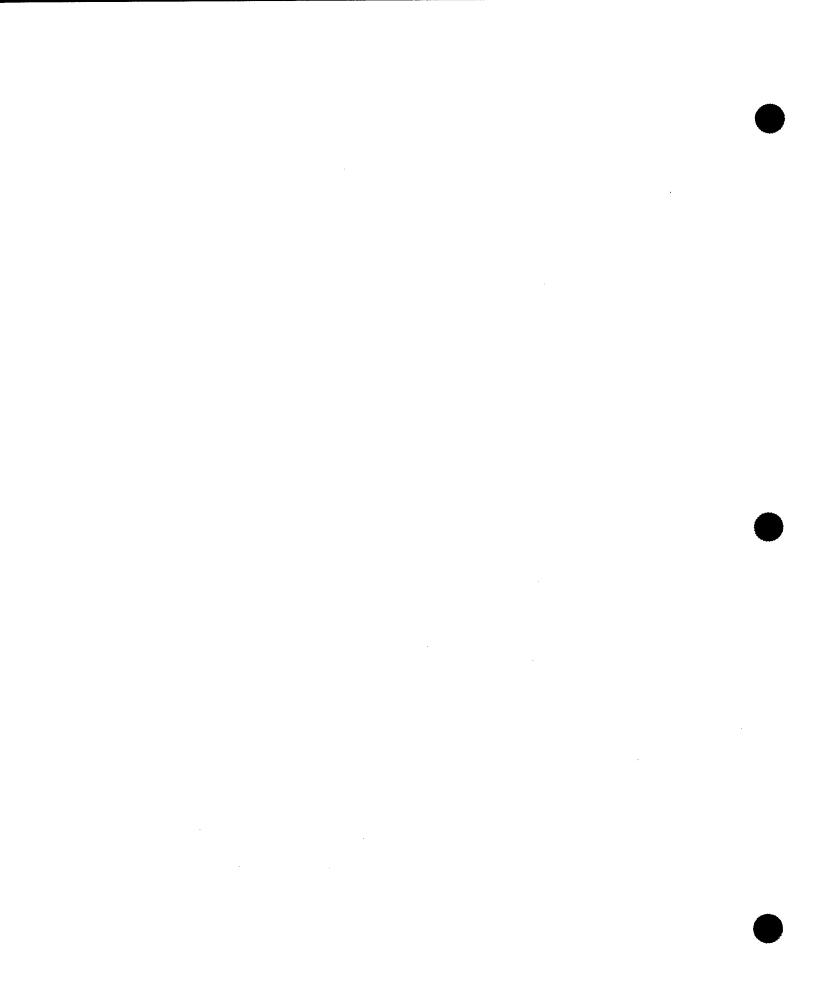
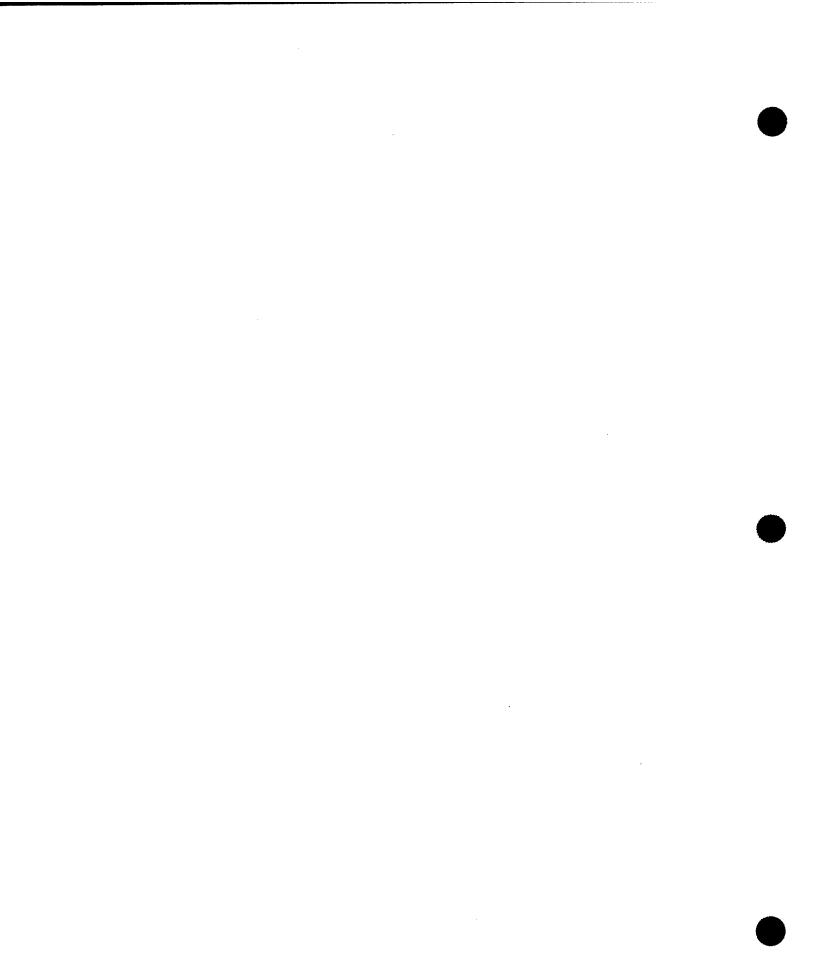


Table 1-4

Municipal Waste Combustor Operating Standards for CO (40 CFR 60.56a Table I)

Municipal Waste Combustor Technology	Emission Limit (ppm by volume)
Mass burn waterwall	100
Mass burn refractory	100
Mass burn rotary waterwall	100
Modular starved air	50
Modular excess air	50
Refuse derived fuel (RDF) stoker	150
Bubbling fluidized bed combustor	100
Circulating fluidized bed combustor	100
Coal/RDF mixed fuel fired combustor	150



INSTALLATION:	COMPLIANCE CATEGORY:	DATE:	REVIEWER(S):	
	AIR EMISSIONS MANAGEMENT Turkey ECAMP			
STATUS	REVIEWER COMME	NTS:		
NA C RMA				

SECTION 2

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CULTURAL RESOURCES MANAGEMENT

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Turkey ECAMP

SECTION 2

CULTURAL RESOURCES MANAGEMENT

A. Applicability of this Section

This chapter, relevant to all Air Force (AF) installations, includes plans and programs needed to ensure proper protection and management of cultural resources (which includes historic and prehistoric properties under Department of Defense (DOD) control), and properties on the World Heritage List or on Turkey's list equivalent to the U.S. National Register of Historic Places.

The regulatory requirements in this section are based on DOD regulations and Air Force Instructions (AFIs) that apply at overseas installations. Management Practices (MPs) are derived from DOD regulations and other documents that are not mandatory overseas but are important to follow to preserve the health and safety of AF employees and protect the environment.

B. DOD Directives/Instructions

• Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 12, contains criteria for required plans and programs needed for the protection and management of cultural resources.

C. U.S. Air Force Documents

- AFI 32-7062, Air Force Comprehensive Planning, 18 April 1994, requires installations to comply with the specifications contained in the Master Statement of Work, the AF document that provides specific details regarding the structure, content, symbology, and other guidance for preparing AF comprehensive plan documents, maps, and databases. The Master Statement of Work (developed by the Air Force Center for Environmental Excellence (AFCEE)) requires that installations maintain maps that address specific environmental issues, including natural and cultural resources issues.
- The *National Historic Preservation Act* of 1966 (16 U.S. Code (USC) 470a-2) requires Installation Commanders (ICs) to inform the Secretary of the AF of property listed on Turkey's equivalent of the U.S. National Register prior to approval of any Federal undertaking that may directly and adversely affect such property.

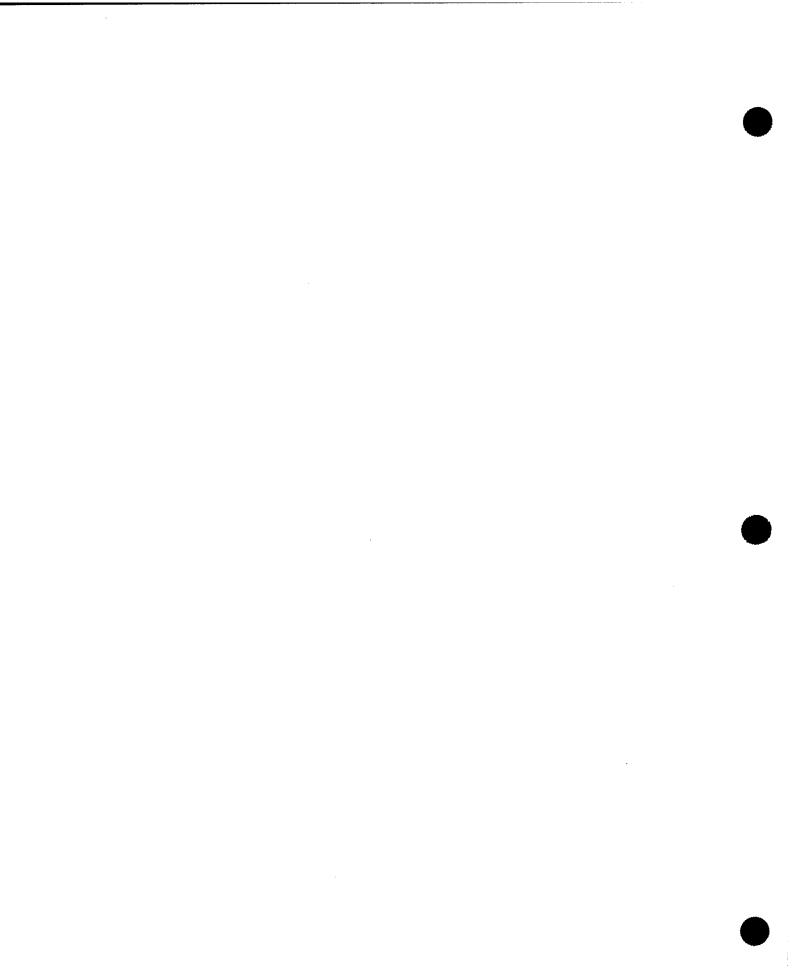
D. Responsibility for Compliance

- Base Civil Engineering (BCE) is responsible for funding, supervising, controlling, and managing installation natural resources and historic preservation programs.
- The Base Cultural Resources Manager is responsible for implementing the historic preservation program, and for locating, inventorying, and evaluating installation cultural resources. This is usually an additional duty assignment within BCE.

E. Definitions

- Action all activities or programs of any kind authorized, funded, or carried out, in whole or in part, on DOD-controlled installations (FGS-Turkey 20).
- Adverse Effect changes that diminish the quality or significant value of natural resources, archaeological resources, or cultural resources or properties (FGS-Turkey 20).
- Archaeological Resource any material remains of prehistoric or historic human life or activities. Such resources include, but are not limited to: pottery, basketry, bottles, weapons, weapon projectiles, tools, structures or portions of structures, pit houses, rock paintings, rock carvings, intaglios, graves, human skeletal materials, or any portion of any of the foregoing items (FGS-Turkey 20).
- *Cultural Mitigation* specific steps designed to lessen the adverse effects of a DOD action on a cultural or archeological resource, including (FGS-Turkey 20):
 - 1. limiting the magnitude of the action
 - 2. relocating the action in whole or in part
 - 3. repairing, rehabilitating, or restoring the affected property
 - 4. recovering and recording data from cultural properties that may be destroyed or substantially altered.
- Cultural Property or Resource physical remains of any prehistoric or historic district, site, building, structure, or object significant in world, national, or local history, architecture, archeology, engineering, or culture. The term includes artifacts, records, and remains that are related to such a district, site, building, structure, or object (FGS-Turkey 20).
- *Cultural Resources Program* identification, evaluation, documentation, curation, acquisition, protection, rehabilitation, restoration, management, stabilization, maintenance, recording, and reconstruction of cultural resources and any combination of the foregoing (FGS-Turkey 20).
- *Inventory* to determine the location of cultural resources that may have world, national, or local significance (FGS-Turkey 20).
- *Management Plan* a document describing natural resources, and their quantity and condition, and actions to ensure conservation and good stewardship (FGS-Turkey 20).
- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Material Remains* physical evidence of human habitation, occupation, use, or activity, including the site, loci, or context in which such evidence is situated, including (FGS-Turkey 20):
 - 1. surface or subsurface structures
 - 2. surface or subsurface artifact concentrations or scatters
 - 3. whole or fragmentary tools, implements, containers, weapons, clothing, and ornaments
 - 4. by-products, waste products, or debris resulting from manufacture or use
 - 5. organic waste
 - 6. human remains
 - 7. rock carvings, rock paintings, and intaglios

- 8. rock shelters and caves
- 9. all portions of shipwrecks
- 10. any portion or piece of any of the foregoing.
- *Preservation* the act or process of applying measures to sustain the existing form, integrity, and material of a building or structure, and the existing form and vegetative cover of a site. It may include initial stabilization work where necessary, as well as ongoing maintenance of the historic building materials (FGS-Turkey 20).
- Property a site, building, object, structure, or collection of such items (FGS-Turkey 20).
- *Protection* the act or process of applying measures designed to affect the physical condition of a property by safeguarding it from deterioration, loss, attack, or alteration, or to cover or shield the property from danger or injury. In the case of buildings and structures, such treatment is generally temporary and anticipates future historic preservation treatment; in the case of archaeological sites, the protective measure may be temporary or permanent (FGS-Turkey 20).



CULTURAL RESOURCES MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations	2-1 through 2-4	(1)(2)
Cultural Resources Management	2-5 through 2-12	(1)

(a) CONTACT/LOCATION CODE:

(1) Cultural Resources Manager (or Environmental Coordinator)

(2) Base Staff Judge Advocate

CULTURAL RESOURCES MANAGEMENT

Records To Review

- Historic Preservation Plan
- Inventories of cultural property and archaeological resources, if any
- Base Environmental Maps

Physical Features To Inspect

- Construction sites
- Site or landmark of historic or archaeological interest

People To Interview

- Cultural Resources Manager (or Environmental Coordinator)
- Base Staff Judge Advocate

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COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
ALL INSTALLATIONS		
2-1. Copies of all relevant DOD directives/ instructions, U.S. Air Force (USAF) directives, and guidance documents should be maintained at the installation (MP).	Verify that the Base Staff Judge Advocate has available the host-nation Final Governing Standards and relevant USAF documents. (2) (NOTE: Among the relevant documents is AFI 32-7062, <i>Air Force Comprehensiv</i> <i>Planning</i> , 18 April 1994.)	
2-2. Installations must meet regulatory requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether any new regulations concerning cultural resources have been issued since the finalization of the manual. (1)(2) Verify that the installation is in compliance with newly issued regulations.	
2-3. The installation Cultural Resources Manager should be included in the coordination process for all actions that may affect the installation's cultural resources (MP).	Verify that the Cultural Resources Manager is included in the coordination proces for all actions that may affect the installation's cultural resources. (1)	
2-4. Installations must develop base environmental maps that address particular topics (AFI 32-7062, para 2.4).	 Verify that the installation is developing the following maps: (1) Map A: Natural and Cultural Resources Map A-1: Areas of Critical Concern Map A-2: Management Areas Map B: Environmental Quality Map B-1: Environmental Regulatory Issues Map B-2: Environmental Emission Sources. (NOTE: These maps are specified in the Master Statement of Work developed b AFCEE.) 	

COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
CULTURAL RESOURCES MANAGEMENT		
2-5. Installations must inventory cultural prop-	Verify that, if financially and otherwise practical, the installation inventories cultural property and resources in areas under DOD control. (1)	
erty and archaeological resources in areas under DOD control, if finan- cially and otherwise prac- tical (FGS-Turkey 12-2).	Verify that the inventory includes buildings, conservation areas, and monuments identified by the Turkish Ministry of Culture, or Defense, for special protection, if any.	
ucai (193-101kcy 12-2).	(NOTE: The cultural inventory can be developed from a records search and visual survey.)	
	Verify that, if financially and otherwise practical, the installation inventories archae- ological resources in areas under DOD control.	
2-6. Installations must ensure that planning for major actions includes consideration of possible effects on cultural or archaeological property or resources (FGS-Turkey 12-3.B).	Verify that the installation's planning for major actions includes consideration of possible effects on cultural or archaeological property or resources. (1)	
2-7. ICs have specific responsibilities with	Determine whether any Federal undertaking may directly and adversely affect a property that is on the host nation's equivalent of the U.S.'s National Register. (1)	
regard to properties on the host nation's equivalent of the United States'	Verify that the IC informs the Secretary of the Air Force (SAF/MIQ) of such property.	
National Register (16 USC 470a-2, Section 402).	(NOTE: This notification is to be made so that the Secretary of the Air Force may take into account the effect of the undertaking on such property for purposes of avoiding or mitigating any adverse effects.)	
	Verify that the IC takes the above action prior to the approval of the undertaking.	

COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
2-8. Installations must notify Turkish Ministry of Defense officials of the discovery of any potential cultural property or resources or archaeological resources not previously inventoried that are discovered in the course of a DOD action (FGS-Turkey 12-4.E).	Determine whether any potential cultural property or resources or archaeological resources not previously inventoried have been discovered. (1) Verify that Turkish Ministry of Defense officials are notified of the discovery of potential cultural property or resources or archaeological resources not previously inventoried that are discovered in the course of a DOD action.	
2-9. Installations must a preserve and protect certain newly discovered items pending a decision on final disposition by the IC (FGS-Turkey 12-4.D).	Verify that the installation preserves and protects potential cultural property of resources or archaeological resources discovered in the course of a DOD action the have not previously been inventoried. (1) Verify that the installation preserves and protects such items pending a decision of final disposition by the IC.	
2-10. Installations must develop a plan for the protection and preservation of cultural resources (FGS-Turkey 12-3.A).	Verify that installations with cultural resources identified on the installation invertory have a plan for the protection and preservation of cultural resources and mitigation of any adverse effects. (1)	
2-11. Personnel who per- form cultural or archaeo- logical resource func- tions must have the required expertise in world, national, and local history and culture (FGS- Turkey 12-1).	Verify that personnel who perform cultural or archaeological resource functions hav the requisite expertise in world, national, and local history and culture. (1)	

COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
2-12. Installations must establish measures suffi- cient to protect known cultural property or archaeological resources until appropriate mitiga- tion or preservation can be completed (FGS-Tur- key 12-4.A through 12- 4.C).	 Verify that known cultural property or archaeological resources are protected at the installation. (1) Verify that the installation has established measures to prevent personnel from disturbing or removing archaeological resources without the permission of the host nation. Verify that the installation has established measures to educate personnel regarding protection of archaeological and cultural resources. 	

INSTALLATION:	COMPLIANCE CATEGORY:	DATE:	REVIEWER(S)
	CULTURAL RESOURCES MANAGEMENT Turkey ECAMP		
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SECTION 3

HAZARDOUS MATERIALS MANAGEMENT

Turkey ECAMP

SECTION 3

HAZARDOUS MATERIALS MANAGEMENT

A. Applicability of this Section

Most Air Force (AF) installations handle many chemicals and substances that may be considered hazardous if not handled, stored, or used properly. A complete list of chemicals used at AF installations would be too lengthy to include in this section, but many of the materials are hazardous, i.e., toxic chemicals, flammable substances, reactive substances, and corrosive materials.

This section primarily addresses the proper storage and handling of chemicals and the spill contingency and response requirements related to hazardous materials. Oil, pesticides, and asbestos are hazardous materials that require special management practices at AF installations and are addressed in separate sections. Radioactive substances and the general category of hazardous wastes are also not included in this section of the manual, and it does not focus on individual hazardous chemicals or substances used at AF installations. It deals, instead, with the generic requirements and Management Practices (MPs) associated with minimizing impacts on the environment from spills or releases of hazardous materials as a result of improper storage and handling. As a general rule, most subsections of this section will be applicable to most AF installations.

The regulatory requirements in this section are based on Department of Defense (DOD) Regulations, Air Force Occupational Safety and Health (AFOSH) Standards, Air Force Regulations (AFRs) and Air Force Instructions (AFIs) that apply at overseas installations. MPs are derived from U.S. Environmental Protection Agency (USEPA) regulations and National Fire Protection Association (NFPA) publications that are not mandatory overseas but are important to follow to preserve the health and safety of AF employees and to protect the environment.

B. DOD Directives/Instructions

- Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 5, contains criteria for the storage, handling, and disposition of hazardous materials used by DOD installations.
- DOD 4145.19-R-1, *Storage and Materials Handling*, Chapter 5, Section 4, *Hazardous Commodities*, dated September 1979, addresses the storage and handling of compressed gases and other hazardous commodities.
- DOD Directive (DODD) 6050.8, *Storage and Disposal of Non-DOD Owned Hazardous or Toxic Materials on DOD Installations*, dated 27 February 1986, does not allow the storage of non-DOD owned toxic or hazardous materials onsite.

C. U.S. Air Force Documents

• Air Force Manual (AFM) 67-1, *Storage and Related Operations*, requires that the installation have a comprehensive list of all chemicals used or generated onsite.



- AFI 91-301, Air Force Occupational and Environmental Safety, Fire Prevention, and Health (AFOSH) Program. This AFI, dated 1 June 1996, outlines the Air Force's Occupational and Environmental Safety, Fire Prevention, and Health Program. It specifically requires the Bioenvironmental Engineering Services (BES) to maintain material safety data sheets (MSDSs) and other related information.
- AFOSH Standard 127-43, *Flammable and Combustible Liquids*, 21 September 1980, applies to the storage, use, and handling of flammable and combustible liquids in containers or tanks of 60 gal [≈227 L] or less and in portable tanks of up to 660 gal [≈2498 L] capacity. The standard implements those portions of Title 29, Code of Federal Regulations (29 CFR) 1910.106, *Flammable and Combustible Liquids*, that are applicable to AF operations. In addition, it covers several items not addressed in the Occupational Safety and Health Administration (OSHA) standard.
- AFOSH Standard 161-21, *Hazard Communication*, 23 January 1989, contains minimum requirements for an effective hazard communication program for activities that handle or use hazardous materials. It implements 29 CFR 1910.1200, *Hazard Communication*.

D. Responsibility for Compliance

- Base Supply (Logistics) has primary responsibility for receiving, storing, and issuing all hazardous commodities. Base Supply reviews all items that have a potential health hazard and determines if an issue exception code should be assigned to the item before being placed in storage. The receipt of hazardous materials with the proper documentation and shipping papers is also the responsibility of Base Supply. The proper maintenance and operation of flammable/combustible materials storage facilities, acid storage facilities, and compressed gas storage facilities is also the responsibility of Base Supply.
- The Director of Base Medical Services, through BES, is responsible for reviewing the issue exception codes for hazardous materials assigned by Base Supply and for approving or disapproving the recommendations.
- The Base Civil Engineer (BCE) is responsible for the storage and handling of all hazardous materials used by the civil engineering shops.
- The Base Fire Department provides support in emergency response, spill events, exercises, and fire protection activities. In addition, the department is responsible for making periodic fire safety inspections of flammable/combustible storage and handling areas on the installation.
- The Base Safety Manager is responsible for conducting workplace safety evaluations and inspections of the handling and storage of hazardous materials. The Safety Manager provides the appropriate manager with a report of findings and recommended corrective actions. He or she is also responsible for ensuring the prompt and accurate investigation of any hazardous material mishaps that result in injury or property damage.

E. Definitions

- *Combustible Liquid* a liquid having a flashpoint at or above 100 °F (37.8 °C). Combustible liquids are categorized as Class II or Class III liquids and are further subdivided as follows (AFOSH Standard 127-43, para 2f):
 - 1. Class II liquids are those having a flashpoint at or above 100 °F (37.8 °C) and below 140 °F (60 °C)
 - 2. Class IIIA liquids are those having flashpoints at or above 140 °F (60 °C) and below 200 °F (93.3 °C), except any mixture having components with flashpoints of 200 °F (93.3 °C)
 - 3. Class IIIB liquids are those having flashpoints at or above 200 °F (93.4 °C).
- *Flammable Liquid* a liquid with a flashpoint below 100 °F (37.8 °C) with a vapor pressure not exceeding 40 psia at 100 °F (37.8 °C). Flammable liquids are categorized as Class I liquids, and are further subdivided as follows (AFOSH Standard 127-43, para 2i):
 - 1. Class IA are those that have a flashpoint below 73 °F (22.8 °C) and boiling point below 100 °F (37.8 °C).
 - 2. Class IB are those that have flashpoints below 73 °F (22.8 °C) and boiling points at or above 100 °F (37.8 °C).
 - 3. Class IC are those that have flashpoints at or above 73 °F (22.8 °C) and below 100 °F (37.8 °C).
- *Hazardous Chemical Warning Label* a label, tag, or marking on a container that is prepared in accordance with DOD 6050.5-H, *DOD Hazardous Chemical Warning Labeling System*, and that provides the following information (FGS-Turkey 20):
 - 1. identification/name of hazardous chemicals
 - 2. appropriate hazard warnings
 - 3. the name and address of the manufacturer, importer, or other responsible party.
- *Hazardous Material* any material that is capable of posing an unreasonable risk to health, safety, or the environment if improperly handled, stored, issued, transported, labeled, or disposed of because it displays a characteristic identified in Table 3-1 or the material is listed in Table 3-1, Chart A.4 of Section 3, *Hazardous Waste Management*. Munitions are excluded (FGS-Turkey 20).
- *Hazardous Material Information System (HMIS)* the computer-based information system developed to accumulate, maintain, and disseminate important information on hazardous material used by DOD (FGS-Turkey 20).
- *Hazardous Material Shipment* any movement of hazardous material in a DOD land vehicle either from an installation to a final destination off the installation, or from a point of origin off the installation to a final destination on the installation, in excess of any of the following quantities (FGS-Turkey 20):
 - 1. for hazardous material identified as a result of inclusion in Table 3-1, Chart A.4, any quantity in excess of the reportable quantity (RQ) listed in Table 3-1, Chart A.4
 - 2. for other liquid or semi-liquid hazardous material, in excess of 416 L (110 gal)
 - 3. for other solid hazardous material, in excess of 225 kg (500 lb)
 - 4. for combinations of liquid, semi-liquid, and solid hazardous materials, in excess of 340 kg (750 lb).



- *Hazardous Substance* any substance having the potential to do serious harm to human health or the environment if spilled or released in a RQ. A listing of these substances and corresponding RQ is contained in Table 3-1, Chart A.4. The term does not include (FGS-Turkey 20):
 - 1. petroleum, including crude petroleum, oil, and lubricant (POL) or any fraction thereof, that is not otherwise specifically listed or designated as a hazardous substance above
 - 2. natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).
- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Material Safety Data Sheet (MSDS)* a form used by manufacturers of chemical products to communicate to users the chemical, physical, and hazardous properties of their product (FGS-Turkey 20).

HAZARDOUS MATERIALS MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations	3-1 and 3-2	(2)(8)
Excess Hazardous Materials	3-3	(1)(2)(4)(5)
Training	3-4	(1)(2)(3)(4)(5)(6)(7)
Releases	3-5 and 3-6	(4)(6)
General Operating Requirements	3-7 through 3-12	(2)(3)(4)(5)
General Storage Requirements	3-13	(1)(2)(4)(5)
Documentation	3-14 through 3-20	(1)(2)(3)(4)(5)(6)(7)
Flammable/Combustible Liquids Handling General Storage Requirements Storage Cabinets Storage Rooms Storage Buildings Outdoor Storage Industrial Storage Areas	3-21 3-22 through 3-27 3-28 through 3-31 3-32 3-33 through 3-35 3-36 and 3-37 3-38 through 3-40	(1)(2)(4)(1)(2)(4)(5)(1)(2)(4)(5)(1)(2)(4)(5)(1)(2)(4)(5)(1)(2)(4)(5)(1)(2)(4)(5)
Batteries	3-41	(2)
Compressed Gases	3-42 through 3-44	(1)(2)(4)(5)
Acid Storage	3-45 and 3-46	(1)(2)(4)(5)
Transportation	3-47 through 3-49	(2)(4)(5)(7)

(a) CONTACT/LOCATION CODE:

- (1) Logistics Supply (LGS (Base Supply))
- (2) BCE (Base Civil Engineering)
- (3) Fire Department
- (4) Safety Officer
- (5) BES (Bioenvironmental Engineering Services)
- (6) Disaster Preparedness Office
- (7) LGT (Transportation Officer)
- (8) Base Staff Judge Advocate

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HAZARDOUS MATERIALS MANAGEMENT

Records To Review

- Emergency Plan documents
- MSDSs
- Inventory records
- Training records
- Inspection records
- Shipping papers
- Placarding of hazardous materials

Physical Features To Inspect

- Hazardous materials storage areas
- Shop activities
- Shipping and receiving area

People To Interview

- LGS (Base Supply)
- BCE (Base Civil Engineering)
- Fire Department
- Safety Officer
- BES (Bioenvironmental Engineering Services)
- Disaster Preparedness Office
- LGT (Transportation Officer)
- Base Staff Judge Advocate

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COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
ALL INSTALLATIONS	
3-1. Copies of all relevant DOD directives/ instructions, U.S. Air Force (USAF) directives, and guidance documents should be maintained at the installation (MP).	 Verify that the Base Staff Judge Advocate has available the host-nation Final Gerning Standards and relevant USAF documents. (8) (NOTE: Among the relevant documents are the following: DOD 4145.19-R-1, Chapter 5, Section 4, Hazardous Commodities, Septembril 1979 DOD Instruction (DODI) 6050.5-H, DOD Hazardous Chemical Warning Late System, June 1989 DODD 6050.8, Storage and Disposal of Non-DOD Owned Hazardous or Too Materials on DOD Installations, 27 February 1986 AFM 67-1, Vol. 2, Part Two, Chapter 14, Storage and Related Operations AFM 67-1, Vol. 2, Part Two, Chapter 21, Special Logistical Support Produres AFI 91-301, Air Force Occupational and Environmental Safety, Fire Prevention, and Health (AFOSH) Program, 1 June 1996 AFOSH Standard 127-43, Flammable and Combustible Liquids, 21 Septembril 1980 AFOSH Standard 161-21, Hazard Communication, 23 January 1989 International Civil Aviation Organization, Technical Instructions for the Starsport of Dangerous Goods by Air.)
3-2. Installations must meet regulatory and AF requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether any new regulations concerning hazardous materials have be issued since the finalization of the manual. (1)(2) Verify that the installation is in compliance with newly issued regulations.
EXCESS HAZARDOUS MATERIALS	
3-3. All excess hazard- ous materials must be processed through the Defense Reutilization and Marketing Service (DRMS) (FGS-Turkey 5- 10).	Verify that excess hazardous materials are processed through DRMS. (1)(2)(4)(5)

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Republic of Turkey ECAMP	
REVIEWER CHECKS: August 1997	
Verify that personnel who manage, use, store, and/or ultimately dispose of hazardous materials are trained in spill response and related handling issues. $(1)(3)(4)(5)(6)(7)$ Verify that the installation provides personnel with effective information and training on the hazardous chemicals in their work area.	
Verify that information and training are provided at the time of initial assignment and whenever a new physical or health hazard on which personnel have not been trained is introduced into the work area.	
Verify that personnel are informed of the following:	
 any operations in their work area in which hazardous chemicals are present the location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and MSDSs. 	
Verify that the training provided to personnel includes at least the following:	
 methods and observations that may be used to detect the presence of or release of a hazardous chemical in the work area (such as monitoring conducted by the installation, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.) the physical and health hazards of the chemicals in the work area the measures that personnel can take to protect themselves from these hazards, including specific procedures implemented to protect personnel from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used the details of the hazard communication program developed by the installation, including an explanation of the labeling system and the MSDS, and how personnel can obtain and use the appropriate hazard information. 	

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
RELEASES	
3-5. Installations must take specific actions in the event of hazardous sub-	Verify that spills of RQs of hazardous substances, hazardous waste, or POL at reported to the Installation On-Scene Coordinator (IOSC) immediately. (4)(6)
stance spills (FGS-Turkey	Verify that immediate action is taken to eliminate the source and contain the spill.
18-5.B, 18-5.D, and 18-5.E).	Verify that the appropriate Military Department and/or Defense Agency and Head quarters (HQ) U.S. Air Force - Europe (USAFE) are notified immediately when an of the following occurs:
	 a spill occurs inside a DOD installation and cannot be contained within an required berm or secondary containment a spill exceeds 416 L (110 gal)
	 - a water source has been polluted - the IOSC has determined that the spill is significant.
	Verify that a written follow-up report is submitted in any of the above instances.
	Verify that, when a hazardous substance spill occurs inside the installation and can not be contained within its boundaries, the following are notified immediately:
	 the appropriate Military Department and/or Defense Agency HQ USAFE the appropriate host-nation authorities.
	Verify that, when a hazardous substance spill threatens the local Italian drinkir water resource, the following are notified immediately:
	 the appropriate Military Department and/or Defense Agency HQ USAFE
	- the appropriate host-nation authorities.
	Verify that, if a hazardous substance spill in excess of the RQ occurs outside of the installation, the person in charge at the scene immediately notifies host nation authorities and local fire departments and obtains necessary assistance.
3-6. The materials and equipment needed to manage a spill should be readily available wherever hazardous material is handled and/or stored (MP).	Verify that materials and equipment needed to manage a spill as specified in the sp plan are readily available, including, for example:
	respiratory protectionabsorbents
	 ear/eye protection spill kits protective clothing
	- neutralizers.

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
GENERAL OPERATING REQUIREMENTS	
3-7. Installations must reduce the use of hazard- ous materials through resource recovery, recy- cling, source reduction, acquisition, or other mini- mization strategies (FGS- Turkey 5-9).	 Verify that the installation has a Hazardous Materials Minimization Program and that it addresses hazardous material management through the use of: (2)(4)(5) resource recovery recycling source reduction acquisition, etc.
3-8. All hazardous materials on DOD installations must be labeled and have MSDS information onhand or available through the HMIS (FGS-Turkey 5-8 and AFOSH Standard 161-21, para 5d).	 Verify that all hazardous materials are labeled with a Hazardous Chemical Warning Label. (2)(4)(5) Verify that MSDS information is onhand or available through the HMIS. (NOTE: These requirements apply throughout the life cycle of the hazardous materials.) Verify that labels provided by chemical manufacturers, importers, or distributors are not removed, defaced, or changed.
3-9. Installations should arrange for coordination with the fire department concerning the types of hazardous chemicals used at the installation, the areas in which they are used, what they are used for, and the quantities used in a given operation (MP).	Verify that the fire department is aware of areas that are at high risk for chemical incidents. (3)
3-10. Specific persons should be designated responsible for hazardous materials storage areas, and the precise nature of their responsibilities should be specified (MP).	Verify that specific individuals have been designated responsible for hazardous mate- rials storage areas. (2)(5) Verify that the individuals designated responsible for hazardous materials storage areas are aware of the precise nature of their responsibilities.

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
3-11. Installations must prevent the unauthorized entry of people or livestock into hazardous materials storage areas (FGS-Turkey 5-12).	Verify that the installation prevents unauthorized entry into hazardous materials sto age areas. (2)(4)
3-12. Installations must maintain hazardous materials dispensing areas properly (FGS-Turkey 5-	Verify that drums and containers in hazardous materials dispensing areas are n leaking. (2)(4) Verify that drip pans/absorbent materials are placed under containers as needed
2).	order to collect drips or spills. Verify that container contents are clearly marked.
	Verify that dispensing areas are located away from catch basins and storm drains.
GENERAL STORAGE REQUIREMENTS	
3-13. Installations must not allow the storage of non-DOD-owned toxic or hazardous materials onsite (DODD 6050.8, para D).	 Verify that the installation does not allow the storage of non-DOD-owned toxic hazardous materials onsite. (1)(2)(5) (NOTE: This does not apply to: agreements with the General Services Administration (GSA) for storage strategic and critical materials in the National Stockpile Program agreements between DOD Components and other Federal agencies for temp rary storage or disposal of explosives emergency lifesaving assistance to civil authorities involving temporary storate or disposal of explosives excess explosives generated under a DOD contract arrangements with the Department of Energy (DOE) for the temporary storate of nuclear materials or nonnuclear classified materials military resources used during peacetime civil emergencies assistance and refuge for commercial carriers containing material of other Fe eral agencies during transportation emergencies.)

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
DOCUMENTATION	
3-14. The installation must have a comprehensive list of all chemicals used or generated onsite and an assessment of their hazards (AFM 67-1, Volume 2, Part Two, Chapters 14 and 21).	Verify that the installation has a comprehensive list of all chemicals used or gener- ated onsite and an assessment of their hazards. (1)(2)(3)(4)(5)
3-15. Each work area that has hazardous materials must keep an inventory of all the hazardous materials used within the work area (AFOSH Standard 161-21, para 5f).	 Verify that each work area has an inventory of its hazardous chemicals and that the inventory is attached to the Workplace Hazard Communication Program. (2)(4)(5) Verify that supervisors maintain the inventory and update it as necessary. Verify that BES reviews the inventory annually. (NOTE: This requirement does not apply to areas in which personnel only handle materials in sealed containers.)
3-16. Installations must have a written Hazard Communication Program that details specific infor- mation at each workplace in which hazardous mate- rials are used or handled (AFOSH Standard 161- 21, para 5a).	 Verify that each workplace has a copy of the written Hazard Communication Program that includes the following: (1)(2)(4)(5)(6)(7) location and access to MSDSs requirements for personnel training availability of personnel training work area hazardous chemical inventory standard operation procedures, operating instructions, or technical orders concerning nonroutine tasks that involve hazardous materials any contractor operations/interface.
3-17. Installations must maintain a master listing of all storage facilities for hazardous materials and an inventory of all haz- ardous materials con- tained therein (FGS- Turkey 5-5).	Verify that the installation maintains a master listing of all storage facilities for haz- ardous materials and an inventory of all hazardous materials contained therein. (1)(4)

-	IAZARDOUS MATERIALS MANAGEMENT Republic of Turkey ECAMP
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
3-18. Installations must ensure that the most cur- rent MSDS data is avail- able for all hazardous materials on the installa- tion (FGS-Turkey 5-7; AFI 91-301, paras 2.10.1.17 and 2.10.1.18).	 Verify that the installation maintains a current copy of DOD List 6050.5-L, Hazardous Material Information System (HMIS) Hazardous Item Listing, on compact dis (5) Verify that the installation maintains copies of other MSDSs for items: not listed in the HMIS locally purchased through base supply, medical supply, or civil engineering supply channels. Verify that BES maintains a file of MSDSs for all hazardous materials used in the industrial facilities on the installation.
3-19. Installations must have MSDSs for each hazardous chemical pro- cured, stored, or used onsite (FGS-Turkey 5-7; AFOSH Standard 161- 21, para 5c).	Verify that an MSDS is readily accessible for each hazardous chemical in the worl place during each work shift. (4)(5) Verify that each work center maintains a file of MSDSs for each hazardous materi procured, stored, or used at the work center.

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
3-20. The content of MSDSs must meet specific criteria (FGS-Turkey 5-6).	 Verify that the MSDSs are in English and contain at least the following information: (2)(4)(5) the identity used on the label: if the hazardous chemical is a single substance, the chemical and common name of the substance if the hazardous chemical is a mixture that has been tested as a whole to determine its hazards, the chemical and common name(s) of the ingredients that contribute to these known hazards and the common names(s) of the mixture itself if the hazardous chemical is a mixture that has not been tested as a whole: the chemical and common name(s) of all ingredients that have been determined to be health hazards and that comprise 1 percent or greater (0.1 percent or greater for carcinogens) of the composition the chemical and common name(s) of all ingredients that have been determined to be health hazards and that comprise less than 1 percent (0.1 percent for carcinogens) of the mixture, if there is evidence that the ingredient(s) could be released from the mixture in concentrations that would exceed an established OSHA permissible exposure limit (PEL), or could present a health hazard to personnel the chemical and common name(s) of all ingredients that have been determined to present a physical hazard who present in the mixture physical and chemical, including the potential for fire, explosion, and reactivity health hazards of the chemical, including signs and symptoms of exposure and any medical conditions that are generally recognized as being aggravated by exposure to the chemical hourd be apotential carcinogen any generally applicable precautions, including appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and y medical conditions that are generally recognized as being aggravated by exposure to the chemical hase been found to be apotential carcinogen any generally applicable control measures, such as appropriate engineeri

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
FLAMMABLE/ COMBUSTIBLE LIQUIDS	(NOTE: FGS-Turkey incorporates the requirements of DOD 4145.19-R-1 by reference. Therefore, since the requirements of AFOSH Standard 127-43 are substantial identical to those of DOD 4145.19-R-1, all citations to that AFOSH Standard mube considered to be requirements of FGS-Turkey as well. DOD 4145.19-R-1 is citation to the area of the requirements are not found in the AFOSH Standard.)
Handling	
3-21. Flammable/combustible liquids must be handled according to specific procedures (AFOSH Standard 127-43, para 4g).	 Verify that the following procedures are followed when flammable/combustite materials are handled: (1)(2)(4) transfer of liquids from or into vessels, containers, or portable tanks within building takes place only by means of the following methods: a closed piping system safety cans a device drawing from the top from a container or tank by gravity through an approved self-closing val transfer of liquids from a safety can is by means of a device drawing through the top transfer of liquids from a container or tank is done by gravity through approved self-closing valve approved safety cans are used for transporting and dispensing flammable liquids in quantities of 19 L (5 gal) or less flammable liquids are used only when there are no open flames or other sources ignition. Verify that safety cans and other portable containers of flammable liquids having flashpoint at or below 80 °F [26 °C] are painted red with some additional clearly vible identification either in the form of a yellow band around the can or the name
	the contents conspicuously stenciled or painted on the can in yellow. (NOTE: This provision does not apply to shipping containers.)

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
FLAMMABLE/ COMBUSTIBLE LIQUIDS	
General Storage Requirements	
3-22. Flammable or combustible liquids must not be stored in ways that limit the use of exits, stairways, or areas normally used for the safe egress of people (AFOSH Standard 127-43, para 4d(1)).	Verify that exits and common traffic routes are not blocked. (1)(4)
3-23. Specific MPs should be considered when storing and handling flammable/ combustible materials (MP).	 Verify that the installation observes the following MPs: (1)(4) no positive sources of ignition (open flames, welding, radial heat, mechanical sparks) are in the immediate area no items are stored against pipes or coils that produce heat paint drums that are stored horizontally are rolled a half turn every 90 days containers of paint are palletized prior to storage aerosol containers are stored in well ventilated areas.
3-24. Flammable and combustible liquid containers must meet specific design and capacity standards (AFOSH Standard 127-43, para 4a).	Verify that containers meet the design and capacity standards in Table 3-2. (1)(2)(4)
3-25. Plastic containers should not be used to store certain liquids in general purpose warehousing (MP).	Verify that plastic containers are not used to store Class I or II liquids in general purpose warehousing. (1)

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3-26. Flammable/combustible material containers must be stored and handled in accordance with specific requirements (FGS-Turkey 5-1 and DOD 4145.19-R-1, para 5-404i).	 Verify that containers are stored and handled such that: (1)(2)(4)(5) open flame devices are not in use in the storage area combustible materials, other than wood pallets used in the storage of flamm ble/combustibles, are not stored in the storage facility labels are not damaged materials received without a date of manufacture label are marked with the shipping document date leaking containers are removed from the storage area immediately containers are stored so that they are issued or used in the order of dates manufacture, with the oldest material used first there are no open containers containers are inspected periodically while in storage.
3-27. Flammable/combustible storage areas must meet certain fire protection standards (AFOSH Standard 127-43, para 4f).	 Verify that flammable/combustible storage locations meet the following requirments: (1)(2)(4)(5) at least one portable fire extinguisher rated not less than 10-BC is located on side the door of any room used for storage and within 3 m (10 ft) of the do opening at least one portable fire extinguisher rated not less than 20-BC is locate within 3 to 7.5 m (10 to 25 ft) of any Class I or Class II liquid storage area or side of a storage room, but inside a building fire extinguishing systems are sprinklers, water spray, or other USAF approve systems open flames and smoking are not permitted within 15 m (50 ft) of flammable combustible liquid storage areas water reactive materials are not stored in the same room with flammable/corr bustible liquids, except for small quantities that can be stored in laboratories containers and portable tanks used for Class I liquids are electrically bond and grounded during transfer of liquids liquid containers are protected from heat sources. Verify that the installation takes positive measures to eliminate sources of ignitic such as open flames, electrical smoking, cutting and welding, hot surfaces, stat mechanical sparks, radiant heat, and spontaneous ignition.

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FLAMMABLE/ COMBUSTIBLE LIQUIDS	
Storage Cabinets	
3-28. Flammable and combustible liquid storage cabinets must meet specific structural requirements (AFOSH Standard 127-43, para 4b(2)).	 Verify that flammable and combustible storage cabinets meet the following structural requirements: (1)(2)(4)(5) all cabinets are constructed to limit internal temperature to no more than 163 °C (325 °F) when subject to the standard 10-min fire test specified in NFPA 251-196 the bottom, top, door, and sides of metal cabinets are at least 18 gauge sheet steel and double-walled with 1.5 in. [3.81 cm] air space, and joints are riveted or welded the doors of metal cabinets have a three-point lock and the door sill is raised at least 2 in. [5.08 cm] above the bottom of the steel cabinet existing wood cabinets are knot free and of at least 1 in. [2.54 cm] nominal thickness, and all joints are rabbeted and fastened in two directions with flathead wood screws.
3-29. Flammable and combustible liquid storage cabinets are subject to specific limitations on their contents (AFOSH Standard 127-43, para 4b(1)).	 Verify that the following storage requirements are met: (1)(2)(4)(5) no more than 455 L (120 gal) of Class I, Class II, and Class IIIA liquids are stored in any cabinet no more than 227 L (60 gal) of the 455 L (120 gal) are Class I or II liquids.
3-30. Flammable/combustible liquid storage cabinets should meet specific requirements (MP).	Verify that newly purchased cabinets are of steel rather than wood. (1)(2)(4)(5) Verify that materials within storage cabinets are segregated. Verify that all containers in cabinets are labeled. Verify that cabinets are constantly closed. Verify that cabinets are conspicuously labeled FLAMMABLEKeep Fire Away.

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3-31. Installations must not have more than three cabinets in a single fire area (AFOSH Standard 127-43, para 4b(1)).	 Verify that no more than three cabinets are located in a single fire area. (1)(2)(4)(5) (NOTE: This requirement does not apply to industrial areas.) (NOTE: The limit of three cabinets in a single area may be increased where sma cabinets are used; however, the maximum amount of flammable storage cannot exceed 1365 L (360 gal) total.) (NOTE: Additional cabinets may be located in the same fire area of an industrial area if the additional cabinet, or group of not more than three 455-L (120-gal) cabinets, is separated from other cabinets or group of cabinets by at least 30.5 m (100 ft).) 			
FLAMMABLE/ COMBUSTIBLE LIQUIDS				
Storage Rooms				
3-32. Indoor flammable/ combustible storage rooms must meet specific standards (AFOSH Stan- dard 127-43, para 4c).	 Verify that the installation's flammable/combustible storage rooms have: (1)(2)(4) walls that meet fire resistance test NFPA 251-1969 liquid tight wall/floor joints self-closing fire doors (NFPA 80) one clear aisle at least 3 ft [≈1 m] wide a continuous mechanical exhaust ventilation system. 			
	Verify that a 4-in. [10.16-cm] raised sill or ramp is provided to adjacent rooms of buildings or that the floor of the storage area is 4 in. [10.16 cm] lower than the surrounding floors.			
	Verify that, if a sill or ramp is not present, the building has an open grated trench the drains to a safe area.			
	Verify that wooden shelving, flooring, dunnage, scuffboards, and/or floor overlay at least 1 in. [2.54 cm] thick.			
	Verify that electrical wiring and equipment meet NFPA 70 requirements.			
	Verify that dispensing is done by an approved pump or self-closing faucet.			
	Verify that storage in the rooms meets the requirements in Table 3-3.			
	Verify that mechanical exhaust systems are controlled by a switch outside the doc and have exhaust outlets on exterior walls.			
	Verify that makeup and exhaust air openings are within 12 in. [30.48 cm] above the floor on one side of the room with one or more makeup air inlets located on the opposite wall.			

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Verify that air movement occurs across all portions of the floor, as far as practical.			
Verify that containers of over 114-L (30-gal) capacity are not stacked one upon the other.			
Verify that containers in indoor storage areas are tightly sealed. $(1)(2)(4)$			
(NOTE: This provision does not apply when container contents are transferred, poured, or applied.)			
Verify that flammable paints, oils, and varnishes in 3.8-L or 19-L (1-gal or 5-gal) containers used for building maintenance are stored temporarily in closed containers at the job site for fewer than 10 calendar days.			
Verify that the storage of flammable/combustible liquids does not physically obstruct means of egress from the building or area.			
Verify that flammable/combustible storage buildings are one story and devoted principally to the handling and storing of flammable or combustible liquids. $(1)(2)(4)$			
Verify that such buildings have 2-h fire-rated exterior walls with no openings within 3 m (10 ft) of the storage area.			
Verify that the following requirements are met: $(1)(2)(4)(5)$			
 if the storage building is located 15 m (50 ft) or fewer from a building or line of adjoining property that may be built upon, the wall facing the building or property line is a blank wall with a fire-resistance rating of at least 2 h any quantity of liquids may be stored as long as the storage arrangements outlined in Table 3-4 are met stacked containers are separated by pallets or dunnage when necessary to provide stability and prevent excess stress on container walls portable tanks stored over one tier high are designed to nest securely no stack is closer than 1 m (3 ft) to the nearest beam, chord, girder, or other obstruction 			

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3-35. (continued)	 piles are 1 m (3 ft) below sprinkler deflectors or discharge points of water spra or other fire protection system containers have clearly legible labels that identify contents and indicate hazard aisles are at least 1 m (3 ft) wide when necessary for access to doors, windows or standpipe connections. 				
FLAMMABLE/ COMBUSTIBLE LIQUIDS					
Outdoor Storage					
3-36. Installations must meet specific require-	Verify that no more than 4169 L (1100 gal) of flammable/combustible liquids as stored adjacent to buildings. (1)(2)(4)(5)				
ments with regard to flammable/combustible	Verify that the quantity and arrangement of materials is in accordance with Table 3-				
materials stored outside (AFOSH Standard 127- 43, para 4e).	Verify that the storage area is graded to divert spills or is surrounded by a curb least 15 cm (6 in.) high.				
	Verify that drains terminate in a safe location.				
3-37. When flammable/ combustible liquids are	Verify that no leaking or severely corroded drums are present. (1)(2)(4)(5)				
stored outside, specific procedures and practices should be followed (MP).	Verify that drums stored in outdoor storage areas are placed horizontally (on sides) double rows, butt-to-butt, with closures (bungs and vents) facing outward.				
snould be followed (MP).	Verify that the end drum of the bottom tier is braced to prevent rolling.				

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FLAMMABLE/ COMBUSTIBLE LIQUIDS				
Industrial Storage Areas	(NOTE: Checklist items 3-38 through 3-40 pertain to industrial areas in which the use of flammable or combustible liquid is incidental to the principal business or in which flammable or combustible liquids are handled or used only in unit physical operations that do not involve chemical reactions.)			
3-38. Areas in which	Verify that the following requirements are met: $(1)(2)(4)(5)$			
flammable/combustible materials are stored, dis- pensed, or used in indus- trial plants should meet specific guidelines (MP).	 portable fire extinguishers and fire control equipment are in place in quantity and type as needed for the hazards of operation and storage at the site adequate precautions are taken to prevent sources of ignition at the site Class I liquids are not dispensed into containers unless nozzles and containers are electrically interconnected operations such as welding and cutting for repairs to equipment are done under the supervision of an individual in charge maintenance and operating practices control leakage and prevent the accidental escape of flammable or combustible liquids: adequate aisles are maintained combustible waste materials and residues are kept to a minimum, stored in covered metal containers, and disposed of daily the grounds area around the buildings and unit operating areas are kept free of weeds, trash, or other unnecessary combustibles tank vehicle and tank car loading or unloading facilities are separated from aboveground tanks, warehouses, and other plant buildings or nearest line of adjoining property by a distance of 25 ft [≈8 m] for Class I liquids and 15 ft [≈5 m] for Class II and III liquids. 			
3-39. Installations must meet specific require- ments with regard to inci- dental storage of flammable/combustible liquids in industrial areas (AFOSH Standard 127- 43, para 4h).	 Verify that the following requirements are met in industrial areas: (1)(2)(4)(5) storage is in metal cabinets stenciled FLAMMABLE KEEP FIRE AWAY storage is limited to 4 L (1 gal) of Class I or 40 L (10 gal) of Class II and III liquids amount of liquid stored in the cabinet does not exceed 40 L (10 gal) containers in the cabinet are closed storage is limited to a 5-day supply each work center has only one cabinet. Verify that the fire department was consulted prior to the establishment of incidental storage areas in industrial shops. 			

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3-40. Areas in which flammable/combustible liquids are used in unit operations, such as mixing, drying, evaporating, filtering, or distilling, should meet specific operating standards (MP).	 Verify that the following requirements are met: (1)(2)(4)(5) areas are located so that each building or unit of equipment is accessible from a least one side for fire fighting areas in which unstable liquids are handled or small scale unit chemical processes are carried on are separated from the remainder of the area by a fire wa of 2-h minimum fire resistance rating emergency drainage systems direct leakage and fire protection water to a saf location emergency drainage systems, if connected to public sewers or discharged interpublic waterways, are equipped with traps or a separator when Class I liquids are being used, ventilation is provided at a rate of not lest than 1 ft³/min/ft² of solid floor area through either natural or mechanical mear equipment is designed to limit flammable vapor-air mixtures. 		
BATTERIES 3-41. Lead-acid batteries that are to be recycled must be managed as haz- ardous material (FGS-	Verify that lead-acid batteries that are to be recycled are managed as hazardous material. (2)		
Turkey 6.9.C). COMPRESSED GASES 3-42. Installations must meet specific require- ments with regard to stor- age of compressed gases in roofed, open-sided sheds (FGS-Turkey 5-1 and DOD 4145.19-R-1, para 5-405d(1)).	 Verify that the compressed gas storage sheds meet the following requirement (1)(2)(4)(5) they are on concrete slabs above grade they are located in a secured area they are separated from other buildings by at least 15 m (50 ft) if they have one or more sides, provisions are made to ensure complete change of air at least six times per hour they are unheated. Verify that flammable gases and gases that support combustion are stored in separate 		
	sheds with at least 15 m (50 ft) between sheds. Verify that, if necessary, stationary or rotating roof vents are used to lower temperature near ceilings to ambient conditions during warm weather. Verify that cylinders and portable tanks have pressure relief devices installed.		

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3-43. Installations must meet specific require- ments with regard to stor- age of compressed gas cylinders in enclosed stor- age facilities (FGS-Tur- key 5-1 and DOD 4145.19-R-1, para 5- 405d(2)).	 Verify that the compressed gases storage areas meet the following requirements: (1)(2)(4)(5) buildings are one story in height, above grade, of noncombustible construction separate storage compartments or rooms are available for flammable gases and gases that support combustion at least one wall of each storage room or compartment for combustible gases is an exterior wall every storage room or compartment is provided with either a gravity or a mechanical exhaust ventilation system designed to provide complete change of air at least six times per hour buildings are not heated cylinders and portable tanks have pressure relief devices installed. 				
3-44. Compressed gases must be handled in accordance with specific good practices (FGS-Turkey 5-1 and DOD 4145.19-R-1, para 5-405c(6) through 5-405c(9), para 5-405c(14), and para 5-405c(22)).	 Verify that the following practices and procedures are observed in the handling of compressed gases: (1)(2)(4)(5) oxygen cylinders are free from grease or oil numbers or markings that are stamped on the cylinders are not altered or defaced additional markings are not applied to cylinders without approval empty cylinders are stored separately but in the same manner as full cylinders valves on empty cylinders are closed NO SMOKING signs are posted in and around compressed gas storage sheds. 				
ACID STORAGE 3-45. Installations must meet specific require- ments with regard to the storage and handling of acids in bulk (FGS-Tur- key 5-1 and DOD 4145.19-R-1, para 5-406).	 Verify that the bulk acid storage areas meet the following: (1)(2)(4)(5) buildings are one story in height, of noncombustible or fire-resistant construction permanent louvered openings at floor and ceiling levels or other gravity ventilation methods are provided safety equipment is available and operational (eye wash, deluge shower, self-contained breathing apparatus, protective clothing) buildings are heated to prevent freezing (if applicable) different acids are stored separately in designated areas NO SMOKING signs are posted there are either floor drains or wall scuppers, if the building has automatic sprinkler protection. (NOTE: Acid storage buildings should have automatic sprinkler protection.) (NOTE: In lieu of aisle space, noncombustible barriers that are at least 3 ft [1 m] high and sealed at floor level may be used to obtain maximum storage space.)				

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3-46. Workers in facilities in which acids are stored in bulk should be provided with a copious, flowing supply of fresh, clean water for first aid (MP).	Verify that workers in facilities in which acids are stored in bulk are provided with copious, flowing supply of fresh, clean water for first aid. (2)(4)		
TRANSPORTATION			
3-47. Hazardous materials shipments must meet specific standards (FGS-	Verify that hazardous materials shipments are accompanied by shipping papers that clearly describe the quantity and identity of the material and include an MSDS $(2)(4)(5)$		
Turkey 5-3).	Verify that all drivers of hazardous material shipments are briefed on the hazardou material included in the shipment, including:		
	 health risks of exposure physical hazards of the material, including the potential for fire, explosion an reactivity. 		
	Verify that hazardous materials are identified as "Ignitable," "Corrosive," "Read tive," or "Toxic" in both the shipping papers and the briefing for the driver.		
	Verify that supervisory personnel do a walk-around inspection of the vehicles befor and after the material is loaded.		
	Verify that all packages are properly labeled. (See checklist item 3-8.)		
3-48. International air shipments of hazardous materials originating from	Determine whether the installation ships hazardous materials internationally by ai (7)		
a DOD installation must meet specific standards (FGS-Turkey 5-4).	Verify that the installation follows the shipping standards found in the International Civil Air Organization Rules and appropriate DOD and component instructions.		
3-49. Certain practices should be carried out in the course of onsite trans-	Verify that procedures exist to manage movement of hazardous materials throughout the installation. (7)		
portation of hazardous materials between build-	Verify that drivers are trained in spill control procedures.		
ings (MP).	Verify that provisions have been made for securing hazardous materials in vehicle when transporting.		

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Table 3-1

Typical Hazardous Material Characteristics (FGS-Turkey, Table 5-1)

I.	The item is a health or physical hazard. Health hazards include carcinogens, corrosive materi- als, irritants, sensitizers, toxic materials, and materials that damage the skin, eyes, or internal organs. Physical hazards include combustible liquids, compressed gases, explosives, flamma- ble materials, organic peroxides, oxidizers, pyrophoric materials, unstable (reactive) materi- als, and water-reactive materials.
II.	The item and/or its disposal is regulated by Turkey because of its hazardous nature.
III.	The item contains asbestos, mercury, or polychlorinated biphenyls (PCBs).
IV.	The item has a flashpoint below 93 °C (200 °F) closed cup, or is subject to spontaneous heat- ing, or is subject to polymerization with release of large amounts of energy when handled, stored, and shipped without adequate control.
V.	The item is a flammable solid, or is an oxidizer, or is a strong oxidizing or reducing agent with a standard reduction potential of greater than 1.0 V or less than -1.0 V.
VI.	In the course of normal operations, accidents, leaks, or spills, the item may produce dusts, gases, fumes, vapors, mists, or smokes with one or more of the above characteristics.
VII.	The item has special characteristics that, in the opinion of the manufacturer or the DOD Com- ponents, could cause harm to personnel if used or stored improperly.

Table 3-2

Maximum Allowable Capacity of Containers and Portable Tanks for Hazardous Materials (AFOSH Standard 127-43, Table 1)

Container Type	Flammable Liquids			Combustible Liquids	
	IA	IB	IC	11	II
Glass or approved plastic ¹	1 pt ²	1 qt ²	1 ³	1	1
Metal (other than Department of Transportation (DOT) drums)	1	5	5	5	5
Safety cans	2	5	5	5	5
Metal drums (DOT specifications)	60	60	60	60	60
Approved portable tanks	660	660	660	660	660

¹ Nearest metric size is also acceptable for the glass and plastic containers listed.

² One gallon or nearest metric equivalent size may be used if metal containers must be avoided because of chemical reaction with their contents.

³ Quantities are in gallons for the rest of this table.

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Table 3-3

Storage of Hazardous Materials in Inside Rooms

(AFOSH Standard 127-43, Table 2)

Fire Protection Provided ¹	Fire Resistance	Maximum Size	Total Allowable Quantities ² (gal/ft ² floor area)
Yes	2 h	500 ft ²	10
No	2 h	500 ft ²	4
Yes	1 h	150 ft ²	5
No	1 h	150 ft ²	2

¹ Fire protection system will be sprinkler, water spray, or other approved method.

 2 If metric containers are being stored, use the nearest metric equivalent.

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Table 3-4

Indoor/Outdoor Storage for Flammable/Combustible Materials

(DOD 4145.19-R-1, Tables 5-1 through 5-4)

Indoor Container Storage					
Class Liquid	Storage Level	*Protected Storage Maximum per Pile In Gallons	Unprotected Storage Maximum per Pile In Gallons		
IA	Ground and upper floors Basement	2750 (50) Not permitted	600 (12) Not permitted		
IB	Ground and upper floors Basement	5500 (100) Not permitted	1375 (25) Not permitted		
IC	Ground and upper floors Basement	16,500 (300) Not permitted	4125 (25) Not permitted		
II	Ground and upper floors Basement	16,500 (300) 5500 (100)	4125 (75) Not permitted		
III	Ground and upper floors Basement	55,000 (1000) 8250 (450)	13,750 (250) Not permitted		

*A sprinkler or equivalent fire protection system installed in accordance with NFPA Standard 30.

NOTES:

- 1. When two or more classes of materials are stored in a single pile, the maximum gallonage permitted in that pile must be the smallest of the two or more separate maximum gallonages.
- 2. Aisles must be provided so that no container is more than 4 m (12 ft) from an aisle. Main aisles must be at least 2-m (8-ft) wide and side aisles at least 1-m (4-ft) wide. (Numbers in parentheses indicate the number of 55-gal [≈208 L] drums.)
- 3. Each pile must be separated from every other by at least 1 m (4 ft).

Table 3-4 (continued)

	Outdoor Container Storage					
Class Liquid	Maximum per pile ¹ (gal)	Distance between piles ² (ft)	Distance to property line that can be built upon ^{1,3} (ft)	Distance to street, alley, public way ⁴ (ft)		
IA	1100	5	20	10		
IB	2200	5	20	10		
IC	4400	5	20	10		
II	8800	5	10	5		
III	22,000	5	10	5		

¹ When two or more classes of materials are stored in a single pile, the maximum gallonage permitted in that pile must be the smallest of the two or more separate maximum gallonages.

² Within 200 ft [≈61 m] of each container, there must be a 12-ft [≈4-m] wide accessway to permit access to fire control apparatus.

³ The distances listed apply to properties that have protection for exposures as defined. If there are exposures, and such protection for exposures does not exist, the distances in column 4 must be doubled.

⁴ When total quantity stored does not exceed 50 percent of maximum per pile, the distance in columns 4 and 5 may be reduced 50 percent, but not to less than 3 ft [≈1 m].

 Table 3-4 (continued)

Indoor Portable Tank Storage							
Class Liquid	Storage Level	*Protected Storage Maximum per Pile In Gallons	Unprotected Storage Maximum per Pile In Gallons				
ΙΑ	Ground and upper floors	Not permitted	Not permitted				
	Basement	Not permitted	Not permitted				
IB	Ground and upper floors	20,000	2000				
	Basement	Not permitted	Not permitted				
IC	Ground and upper floors	40,000	5500				
	Basement	Not permitted	Not permitted				
Π	Ground and upper floors	40,000	5500				
	Basement	20,000	Not permitted				
III	Ground and upper floors	60,000	22,000				
	Basement	20,000	Not permitted				

*A sprinkler or equivalent fire protection system installed in accordance with NFPA Standard 30.

NOTES:

- 1. When two or more classes of materials are stored in a single pile, the maximum gallonage permitted in that pile must be the smallest of the two or more separate maximum gallonages.
- 2. Aisles must be provided so that no container is more than 4 m (12 ft) from an aisle. Main aisles must be at least 2-m (8-ft) wide and side aisles at least 1-m (4-ft) wide.
- 3. Each pile must be separated from every other by at least 1 m (4 ft).

Table 3-4 (continued)

Outdoor Portable Tank Storage								
Class Liquid	Maximum per pile ¹ (gal)	Distance between piles ² (ft)	Distance to property line that can be built upon ^{1,3} (ft)	Distance to street, alley, public way ⁴ (ft)				
IA	2200	5	20	10				
IB	4400	5	20	10				
IC	8800	5	20	10				
Π	17,600	5	10	5				
III	44,000	5	10	5				

¹ When two or more classes of materials are stored in a single pile, the maximum gallonage permitted in that pile must be the smallest of the two or more separate maximum gallonages.

² Within 200 ft [≈61 m] of each container, there must be a 12-ft [4-m] wide accessway to permit access to fire control apparatus.

³ The distances listed apply to properties that have protection for exposures as defined. If there are exposures, and such protection for exposures does not exist, the distances in column 4 must be doubled.

⁴ When total quantity stored does not exceed 50 percent of maximum per pile, the distance in columns 4 and 5 may be reduced 50 percent, but not to less than 3 ft [≈1 m].

INSTALLATION:	COMPLIANCE CATEGORY:	DATE:	REVIEWER(S):		
	HAZARDOUS MATERIALS MANAGEMENT Turkey ECAMP				
STATUS	REVIEWER COMMENTS:				
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SECTION 4

HAZARDOUS WASTE MANAGEMENT

Turkey ECAMP

SECTION 4

HAZARDOUS WASTE MANAGEMENT

A. Applicability of this Section

This section applies to U.S. Air Force (USAF) installations that generate, store, treat, or dispose of any type of hazardous waste.

This section and its associated evaluation worksheets are necessarily more complex than other protocols in this volume. All evaluation items will not be applicable to all installations. Guidance is provided to direct the evaluator to the questions related to the type of hazardous waste activities/facilities on the installation.

The regulatory requirements in this section are based on Department of Defense (DOD), Air Force Regulations (AFRs) and Air Force Instructions (AFIs) that apply at overseas installations. Management practices (MPs) are derived from U.S. Environmental Protection Agency (USEPA) regulations that are not mandatory overseas but are important to follow to preserve the health and safety of Air Force (AF) employees and protect the environment.

B. DOD Directives/Instructions

• Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 6, addresses the management of hazardous waste. It includes criteria for the identification, accumulation, storage, transportation, and disposal of hazardous waste.

C. U.S. Air Force Documents

- AF Hazardous Waste Management Policy Letter, 6 June 1991 provides guidance on the management of hazardous waste, employee training, turn-in and disposal procedures, contracting, and pollution prevention.
- AF Policy Letter, 21 January 1994, Air Force Policy on the Application of the Resources Conservation and Recovery Act to Conventional Explosive Ordnance Operations, addresses the issue of when waste ordnance is to be handled as a hazardous waste; only that portion of the letter that specifies the procedures for identifying when conventional explosive ordnance becomes a waste is applicable to AF components located outside the United States and its territories.

D. Responsibility for Compliance

• The Installation Commander (IC) - The installation commander is responsible for establishing and maintaining an active program of surveillance of users, generators, transporters, and storers of hazardous wastes; the waste minimization program; and disposal activities. By DOD direction, the IC is responsible for compliance with Turkish regulations involving host and tenant organizations on the installation. In either case, operational responsibility for the hazardous waste program rests with the

activities that generate, treat, store, transport, or dispose of the waste and the activities responsible for implementing health, safety, and environmental protection programs.

- The Installation Environmental Protection Committee (EPC) The EPC is responsible for reviewing and coordinating the IC's hazardous waste program. The EPC reviews summary data on waste generation, personnel training, and disposal practices.
- The Base Civil Engineer (BCE) or designated Environmental Management Office (EMO) The BCE/EMO develops installation-specific policy for all aspects of hazardous waste management for all activities on the installation, including AF and non-AF tenants. The BCE/EMO manages the hazardous waste program; reviews all hazardous waste storage, treatment, and disposal facilities and ensures their compatibility with hazardous waste regulations; serves as Office of Primary Responsibility (OPR) for developing and implementing the hazardous waste management plan; identifies to the contracting office those hazardous wastes that the installation elects to dispose of by local contract, along with the necessary conditions the contractor is required to meet; and approves siting and design of all hazardous waste management facilities.
- Base Fire Department This department provides support in emergency response, spill events, exercises, and fire protection activities. In addition, the department will be responsible for making periodic fire safety inspections of hazardous waste storage areas and accumulation points on the installation.
- Civil Engineering Environmental Planning Function or EMO Subgroup The environmental planner is responsible for monitoring day-to-day hazardous waste management activities, maintaining hazardous waste files, and establishing procedures for transfer of accountability and/or custody of hazardous waste from the generating activity to the Defense Reutilization and Marketing Office (DRMO).
- The Bioenvironmental Engineering Services (BES) The BES reviews workplace processes and practices to ensure all hazardous materials/wastes are identified; conducts or arranges for environmental monitoring as required; interprets monitoring results for health risks; reviews plans to build or modify facilities used to treat, store, or dispose of hazardous wastes; reviews all material requests for issues of stock classes listed in Federal Standard 313; and maintains a master file of material safety data sheets (MSDSs).
- The Environmental Health Officer (EHO) The EHO conducts Hazardous Communication Training for all supervisors who have personnel who handle hazardous materials.
- The Supply Officer The supply officer receives, stores, and issues hazardous materials; ensures that turn-in hazardous waste documents contain information necessary to comply with all regulatory requirements; and ensures all hazardous materials are properly labeled.
- The Ground Safety Officer The ground safety officer performs workplace safety inspections, monitors hazardous conditions, and performs occupational safety training.
- The Transportation Officer The transportation officer coordinates as necessary with shipping activities to ensure hazardous wastes are properly labeled, packaged, manifested, and transported in appropriate vehicles (contract or AF-owned vehicles).

- The Deputy Commander for Maintenance (DCM)/Chief of Maintenance The DCM ensures that nonhazardous/nontoxic materials are used where possible; maintains a list of hazardous materials used in the work area by shop and maintenance-related task; ensures personnel are properly trained in ordering, using, handling, controlling, and storing hazardous materials and wastes; and ensures hazardous waste is properly labeled.
- Hazardous Waste Generators Generators manage hazardous waste in their custody, including proper storage, inspection, recordkeeping, labeling of containers, and transfer for disposal.
- Hazardous Waste Treatment, Storage, and Disposal Facility (TSDF) Operators Each TSDF operator is responsible for ensuring compliance with hazardous waste regulations applicable to the facility, including maintaining operational and training records.
- Defense Reutilization and Marketing Office (DRMO) This agency may or may not be located on the installation, but it is the single agency designated by DOD to provide hazardous waste disposal service on a pay for services rendered basis to the installation. The DRMO is responsible for compliance with all host nation national and local regulations, and AFR (including base guidance) at its storage/disposal facility. The DRMO is not in the scope of the assessment unless it is located on the installation.

E. Definitions

- Acute Hazardous Waste those wastes listed in Table 4-1, Chart A.4 with a USEPA waste number with the designator "P" or those wastes with (H) following the waste number (FGS-Turkey 20).
- Combustible Liquid a liquid having a flashpoint at or above 100 °F (37.8 °C). Combustible liquids are categorized as Class II or Class III liquids and are further subdivided as follows (Air Force Occupational Safety and Health (AFOSH) Standard 127-43, para 2f):
 - Class II liquids are those having a flashpoint at or above 100 °F (37.8 °C) and below 140 °F (60 °C).
 - 2. Class IIIA liquids are those having flashpoints at or above 140 °F (60 °C) and below 200 °F (93.3 °C), except any mixture having components with flashpoints of 200 °F (93.3 °C).
 - 3. Class IIIB liquids are those having flashpoints at or above 200 °F (93.4 °C).
- *Disposal* the utilization of those methods of treatment and/or containment technologies, as are approved in Chapter 6, Section 11 of FGS-Turkey, that effectively mitigate the hazards to human health or the environment of the discharge, deposit, injection, dumping, spilling, leaking, or placing of a hazardous waste into, or on any land or water in a manner that, without application of such methods, such hazardous wastes or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwater (FGS-Turkey 20).
- DOD Hazardous Waste Generator a generator is considered to be the installation or activity on an installation that produces a regulated hazardous waste (FGS-Turkey 20).
- Flammable Liquid a liquid with a flashpoint below 100 °F (37.8 °C) with a vapor pressure not exceeding 40 psia at 100 °F (37.8 °C). Flammable liquids are categorized as Class I liquids, and are further subdivided as follows (AFOSH Standard 127-43, para 2i):
 - 1. Class IA are those that have a flashpoint below 73 °F (22.8 °C) and boiling point below 100 °F (37.8 °C).

- 2. Class IB are those that have flashpoints below 73 °F (22.8 °C) and boiling points at or above 100 °F (37.8 °C).
- 3. Class IC are those that have flashpoints at or above 73 °F (22.8 °C) and below 100 °F (37.8 °C).
- Hazardous Constituent a chemical compound that is listed by name in Table 4-1 or possesses a characteristic described in Table 4-1 (FGS-Turkey 20).
- Hazardous Waste (HW) a discarded material that may be solid, semisolid, liquid, or contained gas and either exhibits a characteristic of a hazardous waste in Table 4-1, Section A-1 or is listed as a hazardous waste in Table 4-1, Chart A.4 (FGS-Turkey 20).
- Hazardous Waste Accumulation Point (HWAP) an area at or near the point of generation where hazardous wastes are temporarily stored, up to 208 L (55 gal) of hazardous waste or 1 L (1 qt) of acute hazardous waste, from each waste stream, until removed to a Hazardous Waste Storage Area (HWSA) or shipped for treatment or disposal (FGS-Turkey 20).
- Hazardous Waste Fuel hazardous wastes burned for energy recovery are termed "hazardous waste fuel." Fuel produced from hazardous waste by processing, blending, or other treatment is also hazardous waste fuel (FGS-Turkey 20).
- Hazardous Waste Generation any act or process that produces hazardous waste as defined in FGS-Turkey (FGS-Turkey 20).
- Hazardous Waste Profile Sheet (HWPS) a document that identifies and characterizes the waste by providing user's knowledge of the waste and/or lab analysis, and details the physical, chemical, and other descriptive properties or processes that created the hazardous waste (FGS-Turkey 20).
- Hazardous Waste Storage Area (HWSA) a location on a DOD installation where more than 208 L (55 gal) of hazardous waste or 1 L (1 qt) of acute hazardous waste from any one waste stream is stored prior to shipment for treatment or disposal (FGS-Turkey 20).
- Hazardous Waste Storage Area Manager a person or agency on the installation assigned the operational responsibility for receiving, storing, inspecting, and general management of the installation's HWSA or HWSA program (FGS-Turkey 20).
- Incompatible Wastes wastes are incompatible when their mixture causes reactions which: (FGS-Turkey 20):
 - 1. generate extreme heat or pressure, fire or explosions, or violent reactions
 - 2. produce uncontrolled toxic musts, fumes, dusts, or gasses in sufficient quantities to threaten human health or the environment
 - 3. produce uncontrolled flammable gasses in sufficient quantities to pose a risk of fire or explo-
 - sion 4. damage the structural integrity of the storage device or the environment.

(NOTE: See 40 CFR 264.17(b) and Appendix V for examples of potentially incompatible wastes.)

• Land Disposal - placement in or on the land, including, but not limited to, land treatment facilities, surface impoundments, underground injection wells, salt dome formations, salt bed formations, underground mines, or caves (FGS-Turkey 20).

- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *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, recover energy or material resources from the waste, or render such waste nonhazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume (FGS-Turkey 20).
- Treatment, Storage, and Disposal Facility (TSDF) any facility not located on a DOD installation that is used for the collection, source separation, storage, transportation, transfer, processing, treatment, or disposal of hazardous waste (FGS-Turkey 20).
- Unique Identification Number a number assigned to generators of hazardous waste to identify the generator and used to assist in tracking the waste from point of generation to ultimate disposal. The number could be the Unit Identification Code (UIC) or the DOD Activity Address Code (DODAAC) (FGS-Turkey 20).
- Used Oil Burned for Energy Recovery used oil that is burned for energy recovery is termed "used oil fuel." Used oil fuel includes any fuel produced from used oil by processing, blending, or other treatment. "Used oil" means any oil or other waste petroleum, oil, and lubricant (POL) product that has been refined from crude oil, or is a synthetic oil, has been used, and as a result of such use, is contaminated by physical or chemical impurities. Used oil exhibiting the characteristics of reactivity, ignitability, and corrosivity is still considered used oil, unless it has been mixed with other hazardous waste. However, used oil that exhibits the characteristic of toxicity as described in Table 4-1 is a hazardous waste and will be managed as such. In addition, used oil mixed with hazardous waste is a hazardous waste and will be managed as such (FGS-Turkey 20).

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HAZARDOUS WASTE MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations General Plans/Surveys Waste Identification	4-1 through 4-7 4-8 through 4-11 4-12	(1)(2)(5)(6)(7)(8)(9)(10)(11) (1)(2)(5)(6)(7)(8)(9)(10)(11) (1)(9)
Training	4-13 and 4-14	(1)(2)(3)(4)(5)(6)(9)
Hazardous Waste Generators Operating Procedures Specific Wastes	4-15 through 4-18 4-19 through 4-24	(2)(4)(5)(9)(10) (1)(2)(3)(5)(7)(9)
Hazardous Waste Accumulation Points Design Requirements Operating Procedures Containers Documentation	4-25 through 4-28 4-29 through 4-31 4-32 4-33	(3)(9) (3)(9) (3)(9) (3)(9)
Hazardous Waste Storage Areas Design Requirements Operating Procedures Containers Documentation Closure	4-34 through 4-41 4-42 through 4-47 4-48 4-49 and 4-50 4-51	(1)(2)(5) (2)(5) (2)(5) (2)(3)(5)(9) (2)(5)
Transportation of Hazardous Waste	4-52 through 4-54	(7)(8)
Hazardous Waste Disposal General Land Disposal Incinerators	4-55 through 4-60 4-61 and 4-62 4-63 through 4-65	(1)(2)(5)(7)(8) (1)(2)(5) (1)(2)(5)

(a) CONTACT/LOCATION CODE:

- (1) BCE (Environmental Planning)
- (2) DRMO (Defense Reutilization and Marketing Office)
- (3) HWAP Manager
- (4) Fire Department
- (5) HWSA Manager
- (6) Safety Manager
- (7) Transportation Officer
- (8) Base Supply
- (9) Generating Activities
- (10) BES (Bioenvironmental Engineering Services)
- (11) Base Staff Judge Advocate

HAZARDOUS WASTE MANAGEMENT

Records To Review

• Generators:

Hazardous waste manifests Manifest exception reports Personnel training documentation Contingency plan Notifications of hazardous waste oil fuel marketing or blending activity Hazardous waste disposal turn-in document (DD Form 1348-1)

• HWSAs (in addition to the above records):

Unmanifested waste reports Facility audit reports (inspection log) Waste analysis plan(s) Operating record Groundwater monitoring records and annual reports Closure/post-closure plans Closure/post-closure notices (where applicable)

Physical Features To Inspect

- Disposal sites
- Generating areas
- Accumulation points
- Incinerators
- Vehicles used for transport
- Storage facilities (including drums)

People To Interview

- BCE (Environmental Planning)
- DRMO (Defense Reutilization and Marketing Office)
- HWAP Managers
- Fire Department
- HWSA Manager
- Safety Manager
- Transportation Officer
- Base Supply
- Generating Activities
- Base Staff Judge Advocate

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	COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
ALL INSTALLATIONS		
General		
4-1. Copies of all relevant DOD directives/instructions, USAF direc-	Verify that the Base Staff Judge Advocate has available the host-nation Final Gov- erning Standards and relevant USAF documents. (1)(11)	
tives, and guidance docu- ments should be maintained at the installa- tion (MP).	 (NOTE: Among the relevant documents are the following: - AF Hazardous Waste Management Policy Letter, 6 June 1991 - AF Policy Letter, 21 January 1994.) 	
4-2. Installations must maintain copies of certain U.S. laws and applicable host nation hazardous waste laws (AF Hazardous Waste Management Policy Letter, 6 June 1991, para (IIa)).	 Verify that the installation maintains copies of the following laws: (1)(11) Occupational Safety and Health Act Hazardous Material Transportation Act (HMTA) Resource Conservation and Recovery Act and Hazardous and Solid Waste Amendments (RCRA/HSWA) Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA) and Superfund Amendment and Reauthorization Act (SARA) Hazardous Materials Transportation Uniform Safety Act. 	
	Verify that the installation maintains copies of applicable Turkish hazardous waste laws.	
4-3. Installations must meet regulatory and AF	Determine whether any new regulations concerning hazardous waste have been issued since the finalization of the manual. (1)(7)	
requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulations as a basis of finding).	Verify that the installation is in compliance with newly issued regulations.	
4-4. Installations must recycle or reuse hazardous waste to the maximum extent practical (FGS-Turkey 6-11.F).	Verify that hazardous waste is recycled or reused to the maximum extent practical. (1)(8)(9)	

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-5. Installations with HWSAs should provide specific information to certain agencies (MP).	Verify that police, fire departments, and emergency response teams are familiar with the layout of the facility, properties of the waste being handled, and general operations. $(4)(5)$
	Verify that the hospital is familiar with the site and the types of injuries that could result in an emergency.
4-6. Installations must inspect HWSAs for mal-function, deterioration,	Verify that inspections are conducted according to a written schedule that is kept at the HWSA and at a sufficient frequency to identify problems in time to correct them before they harm human health or the environment. (2)(5)
operator errors, and dis- charges (FGS-Turkey 6- 3.H).	Verify that the schedule identifies the type of problems that are to be looked for dur- ing the inspection.
	Verify that inspections cover all equipment and areas involved in the storage and handling of hazardous waste.
	Verify that areas subject to spills, such as loading and unloading areas, are inspected daily when in use.
	(NOTE: The frequency at which equipment/facilities other than containers are inspected should be based on the rate of possible deterioration of the equipment and probability of an environmental or human health incident if the deterioration or mal-function or any operator error goes undetected between inspections. In addition, containers are inspected weekly by the HWSA manager (see checklist item 4-42).)
	Verify that the installation remedies any deterioration or malfunction of equipment or structures that the inspection reveals on a schedule that ensures that the problem does not lead to an environmental or human health hazard.
	Verify that, when an imminent hazard is identified or one has already occurred, the installation takes immediate action.
	Verify that inspections are recorded in an inspection log or summary that is kept for at least 3 yr from the date of inspection and that includes at least:
	 the date and time of inspection the name of the inspector notation of the observations made
	- the date and nature of any repairs or other remedial actions.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-7. The materials and equipment needed to manage a spill should be readily available wherever hazardous waste is generated, handled, and/ or stored (MP).	 Verify that materials and equipment needed to manage a spill as specified in the sp plan are readily available, including, for example: respiratory protection absorbents ear/eye protection spill kits protective clothing neutralizers.
ALL INSTALLATIONS	
Plans/Surveys	
4-8. Installations that generate hazardous waste must have a Hazardous Waste Management Plan (AF Hazardous Waste Management Policy 6 June 1991, para III(b)).	 Verify that the installation has a Hazardous Waste Management Plan that includes the following: (1)(6)(7) - letter of instruction information and emergency contacts introductory materials introduction responsibilities organizational chart location maps waste inventory waste analysis plan recordkeeping reporting training contingency plan preparedness and spill prevention pollution prevention.
4-9. Installations must develop a waste analysis plan (FGS-Turkey 6-3.C.1).	 Verify that the installation, in conjunction with the HWSA manager, has developed plan to determine how and when wastes are to be analyzed. (2)(5) Verify that the plan includes: procedures for characterization and verification testing of both onsite and or site hazardous waste testing parameters and the rationale for selecting them frequency of analysis test and sampling methods.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-10. Installations must maintain an HWPS for each waste stream handled by each HWSA (FGS-Turkey 6-3.C.2).	Verify that the installation maintains a file of HWPSs. (2)(5) Verify that the HWSA accepts no waste for storage unless it has received an HWPS.
4-11. Installations must have a contingency plan to manage spills and releases of hazardous waste (FGS-Turkey 6-6).	Verify that the installation has a contingency plan to manage spills and releases of hazardous waste. (2)(5) Verify that a copy of the contingency plan is maintained at the HWSA and each HWAP.
	Verify that a copy of the plan has been submitted to all police departments, fire departments, hospitals, and emergency response teams upon which the plan relies to provide emergency services.
	Verify that the plan is available in both English and Turkish.
	(NOTE: See Section 8, <i>Petroleum, Oil, and Lubricants (POL) Management</i> , for further details on the contents of the spill plan.)
ALL INSTALLATIONS	
Waste Identification	
4-12. Generators must identify and characterize the wastes generated at their sites (FGS-Turkey 6-1.A and 6-1.B; AF Hazardous Waste Management Policy, 6 June 1991, para III(c)).	Determine whether the installation generates, transports, treats, stores, or disposes of any hazardous waste. (See Table 4-1 for guidance.) (1)(9)(10) Verify that the generators identify and characterize their wastes.
	(NOTE: Used oil must also be characterized.)
	(NOTE: Wastes may be identified and characterized on the basis of knowledge of the materials and processes that generated the wastes, or on the basis of laboratory analysis of the waste.)
	Verify that wastes have been identified on the HWPS according to the inherent haz- ardous characteristics associated with the wastes in terms of:
	 physical properties (solid, liquid, contained gases) chemical properties (chemical constituents, technical, or chemical name) other descriptive properties (ignitable, corrosive, reactive, toxic).

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-12. (continued)	(NOTE: The properties defining the characteristics should be measurable by stan dardized and available testing procedures.)
	(NOTE: See Tables 4-2 and 4-3.)
	Verify that a HWPS is used to identify each hazardous waste stream.
	Verify that the installation has a hazardous waste inventory that identifies all was streams.
TRAINING	
4-13. Installation personnel who handle hazardous waste must meet specific training requirements (FGS-Turkey 6-10.A through 6-10.D and 6-3.I).	 Verify that all DOD personnel (including U.S. military, civilian, and local nation personnel) whose duties involve actual or potential exposure to hazardous was receive training. (1)(2)(3)(4)(5)(6)(9) (NOTE: The following persons are subject to this requirement: those who determine which wastes are hazardous wastes those who complete hazardous waste recordkeeping requirements those who handle/store hazardous waste containers those who transfer hazardous waste to or from accumulation tanks or container those who transfer hazardous waste those who perform hazardous waste cleanup (nonemergency) those who inspect, manage, or work at a HWAP or HWSA those who collect hazardous waste related activities as designated by the Base Commanders and/or Environmental Coordinators.) Verify that the training program is conducted by a qualified trainers who have completed an instructor training program in the subject or who have comparable activities and experience.
	Verify that the training program includes sufficient information to enable personne to comply fully with and carry out requirements in final governing standards. Verify that the program is designed to ensure that facility personnel are able respond effectively to emergencies by familiarizing them with emergency proce dures, equipment, and systems.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-13. (continued)	Verify that training for personnel whose duties include hazardous waste handling and management addresses the following in particular:
	 emergency procedures (response to fire/explosion/spills; use of communications/alarm systems; body and equipment clean-up) handling and storage of drums and containers safe use of hazardous waste equipment protection of personnel, including: personal protective equipment (PPE) safety and health hazards hazard communication worker exposure for generators and HWSA operators: recordkeeping security inspections contingency plans storage requirements. Verify that training for new personnel assigned to duties involving actual or potential exposure to hazardous wastes is completed prior to their assuming those duties.
	Verify that all personnel successfully complete annual hazardous waste refresher training.(NOTE: Hazardous Waste Operations and Emergency Response (HAZWOPER) training may fulfill the requirements of this checklist item, depending on the duties of the individual.)
4-14. All hazardous waste training for each individual assigned duties involving actual or potential exposure to hazardous waste must be documented (FGS-Turkey 6-10.E; Hazardous Waste Management Policy, 6 June 1991, para III(d)(2)).	 Verify that all hazardous waste training for each individual assigned duties involving actual or potential exposure to hazardous waste is documented. (1)(2)(5)(6)(9) Verify that up-to-date training records are kept by the HWSA manager or the responsible installation office. Verify that training records are retained for 3 yr after termination of duty of these personnel.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
HAZARDOUS WASTE GENERATORS	
Operating Procedures	
4-15. Each generator must use a unique identification number for all recordkeeping. reports, and manifests for hazardous wastes (FGS-Turkey 6-1.C).	Verify that each generator uses a unique identification number for all recordkeepir reports, and manifests for hazardous wastes. (9)
4-16. Generators must maintain an audit trail of	Verify that generators maintain an audit trail of hazardous waste from the point generation to disposal. (2)(9)
hazardous waste from the point of generation to dis- posal (FGS-Turkey 6- 1.D.3).	Verify that generators using Defense Reutilization and Marketing Service (DRM disposal services obtain a signed copy of the manifest from the initial DRMS recipent of the waste.
	Verify that, if a generator uses a hazardous waste management and/or disposal pagram of a DOD component with a different unique identification number, it obtain signed copy of the manifest from the receiving component.
	Verify that installations that dispose of their wastes outside of the DRMS system have developed their own manifest tracking system to provide an audit trail from point of generation to ultimate disposal.
4-17. Installations that	Verify that: (2)(9)
generate hazardous wastes and use the DRMO for disposal of hazardous waste must fol- low established proce- dures (AF Hazardous Waste Management Pol-	 generators provide an HWPS along with the waste generators hand-carry AF Form 2005 to Base Supply to initiate timely action generators hand-carry DD Form 1348-1 when received from Base Supply, BCE for certification generators hand-carry certified DD Form 1348-1 from BCE to the DRMO.
icy, 6 June 1991, para III(e)(2) and Appendix C, Section B).	(NOTE: HQ USAF/CEV 25 September Memorandum, <i>Hazardous Waste Dispos</i> allows installations to use alternate procedures in which the installation hazardow waste managers prepare and certify the DD Form 1348-1 instead of Base Supp The Hazardous Waste Management Plan needs to indicate what procedure is used, the approved alternate procedure no AF Form 2005 is prepared, and the hazardow waste managers also maintain records of all transactions.)

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-17. (continued)	Verify, by examining records and interviewing the staff at Base Supply (customer Service Unit), that:
	 computer records of all hazardous waste transfer actions are maintained a DD Form 1348-1 is processed for each transaction and includes: the hazardous waste stock number waste quantity
	- applicable disposal cost and funding information.
	Verify, by examining records and interviewing BCE and DRMO personnel, that:
	 a letter identifying personnel eligible to certify hazardous waste disposal turn- in documents (DD Form 1348-1) is current and on file at the servicing DRMO all DD Forms 1348-1 are properly certified, indicating that hazardous waste is properly identified (USEPA identification number), labeled, and packaged DD Form 448, Military Interdepartmental Purchase Request (MIPR), has been executed with DRMO, and the Accounting and Finance Office (AFO) main- tains DD Form 448 after execution billings from DRMO are on a standard form (SF) 1080 and are reviewed and certified for payment by BCE through the AFO.
	Verify, by examining records and interviewing BES personnel, that:
	 BES conducts a semiannual review of the health hazard listing to review all issue exception code (IEX) 8 and 9 items and determines whether health hazard items produce a specific hazardous waste nomenclatures are included in the health hazard listing.
4-18. Generators must update HWPSs as needed to reflect new waste streams or process modi- fications (FGS-Turkey 6- 3.C.2).	Verify that the generator updates the HWPS as needed to reflect any new waste streams or process modifications that change the character of the hazardous waste being handled at the storage area.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
HAZARDOUS WASTE GENERATORS	
Specific Wastes	
4-19. Hazardous waste must not be used for dust suppression or road treatment (FGS-Turkey 6-9.B).	Verify that neither used oil, hazardous waste, nor used oil contaminated with an hazardous waste is used for dust suppression or road treatment. (1)(7)
4-20. Installations must manage lead-acid batteries that are not recycled as	Determine whether the installation has lead-acid batteries that have exhausted the life cycle and are not recycled. $(1)(3)(5)(9)$
hazardous waste (FGS- Turkey 6-9.C).	Verify that the installation manages such batteries as hazardous waste.
4-21. Mercury, nickel- cadmium, lithium, and lead-acid batteries must be treated prior to dis- posal (FGS-Turkey 6- 11.I.5).	Verify that mercury, nickel-cadmium, lithium, and lead-acid batteries are beir treated prior to disposal to stabilize, fix, or recover heavy metals and neutralize ar corrosives. (2)(5)
4-22. Treatment residues of wastes categorized as hazardous must be managed as hazardous waste	(NOTE: This requirement applies to the treatment residues of all wastes categorize as hazardous on the basis of Table 4-2 or Table 4-1, except for those wastes covere under Section A-1 of the table.)
(FGS-Turkey 6-11.I.1 through 6-11.I.4).	Verify that treatment residues from the following technologies are managed as ha ardous waste, if they are characterized as hazardous: $(1)(2)(5)$
	 for organics: incineration fuel substitution where the units are operated so that destruction of has ardous constituents is efficient, and hazardous emissions are no greated than those produced by incineration (consult with Headquarters U.S. A Force - Europe (HQ USAFE) for incineration standards) degradation by microbial action recovery chemical degradation for heavy metals:
	 For heavy metals. stabilization or fixation recovery

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-22. (continued)	 for reactives: treatments that change the chemical or physical composition of a material so that it no longer exhibits the characteristic of reactivity for corrosives: neutralization of corrosives to a pH value between 6.0 and 9.0 recovery incineration chemical or electrolytic oxidation stabilization.
4-23. Installations must identify conventional explosive ordnance as hazardous waste in spe- cific circumstances (AF Policy Letter, 21 January 1994, para IV.c.2, IV.c.3, and IV.c.7).	 Verify that the installation identifies conventional explosive ordnance as hazardous waste when: (1)(9) - an authorized official records in writing a determination that the conventional explosive ordnance will be discarded - custodians of the conventional explosive ordnance receive this written determination. (NOTE: The authorized official is identified by being designated in writing.) (NOTE: Prior written authorization is not required if safety or other considerations (such as an emergency response conducted by an Explosive Ordnance Disposal Unit or a response to mitigate an imminent hazard) preclude obtaining prior written authorization.) (NOTE: An authorized official may make a written designation that conventional explosive ordnance that has previously been designated as waste, but for which a legitimate use is subsequently identified, is no longer waste. If the official cannot make this redesignation, the waste remains a hazardous waste until it ceases to exhibit a characteristic of a hazardous waste, or until it has been specifically excluded by regulation (i.e., delisted).) (NOTE: Generally, conventional explosive ordnance manufacture, assembly, testing, training, intended use, or range management do not constitute hazardous waste management.)

	COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
4-24. Authorized individuals must take into account the facts and circumstances applicable to each situation in making a determination to discard (AF Policy Letter, 21 January 1994, para IV.c.4).	 Verify that decisions to discard conventional explosive ordnance are based on facts and circumstances applicable to each situation. (1)(9) (NOTE: The following guidelines should be used in making the determination to a card: a determination to discard excess conventional explosive material that is s and stable in normal logistical environments may be made only after all effer have been exhausted to reuse, recycle, recover, or sell such material a determination to discard conventional explosive ordnance that may be unble or unsafe to store or transport should be made by an authorized official a conducting appropriate testing or inspection, if conditions allow, or if i readily apparent that there is no reasonable alternative to discarding the matrial.) 	
HAZARDOUS WASTE ACCUMULATION POINTS		
Design Requirements		
4-25. HWAPs must meet specific design and operating standards (FGS-Turkey 6-2.A and 6-2.B).	Verify that the HWAP is at or near the point of generation and that no more than 2 L (55 gal) of hazardous waste or 1 L (1 qt) of acute hazardous waste (see Table 4 from each waste stream is accumulated there. (3) Verify that each HWAP is designed to provide appropriate segregation for differ waste streams, including those that are chemically incompatible.	
	(NOTE: See Table 4-4 for a list of incompatible wastes.)	
4-26. Each HWAP must have warning signs appropriate to the waste being accumulated at the site (FGS-Turkey 6-2.A).	Verify that each HWAP has warning signs appropriate to the waste being accur lated at the site. (3)	
4-27. HWAP container storage areas must have containment systems (FGS-Turkey 6-2.C).	Verify that each container storage area has a containment system, such as a drip p with sufficient capacity to contain 10 percent of the volume of the containers or volume of the largest container, whichever is greater. (3) (NOTE: This applies only to containers that hold free liquids.)	

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-28. HWAPs that have containers holding ignitable or reactive waste must be located at least 15 m (50 ft) inside the installation boundary (FGS-Turkey 6-2.C and 6-4.C).	Verify that containers which hold ignitable or reactive waste are at least 15 m (50 ft) inside the installation boundary. (3)(9)
HAZARDOUS WASTE ACCUMULATION POINTS	
Operating Procedures	
4-29. When accumulation limits are reached, the generator must make arrangements either to move the hazardous waste to an HWSA or to ship it offsite for treatment or disposal (FGS-Turkey 6-2.B).	Verify that, when accumulation limits are reached, the generator makes arrangements either to move the hazardous waste to an HWSA or to ship it offsite for treatment or disposal. (NOTE: Accumulation limits are 208 L (55 gal) of hazardous waste or 1 L (1 qt) of acute hazardous waste from each waste stream.)
4-30. HWAPs must be inspected weekly for leaking containers and deterioration of the containment system caused by corrosion and other factors (FGS-Turkey 6-2.C and 6-4.A.5).	Verify that a weekly inspection is performed for leaking containers and for deteriora- tion of containers and the containment system. (3)(9) Verify that secondary containment systems are inspected for defects and emptied of accumulated releases.
4-31. HWAPs must han- dle incompatible wastes in accordance with spe- cific requirements (FGS- Turkey 6-2.C and 6-4.D).	Verify that hazardous wastes and materials that can react with each other to cause extreme heat, explosions, fire or toxic products are not placed in the same container. (3)(9) Verify that hazardous waste is not placed in an unwashed container that previously held an incompatible waste or material.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-31. (continued)	Verify that storage containers holding a hazardous waste that is incompatible with any waste or other materials stored nearby in containers, piles, open tanks, or surface impoundments are separated from the other materials or protected from them by means of a dike, berm, wall, or other device.
HAZARDOUS WASTE ACCUMULATION POINTS	
Containers	
4-32. Containers at HWAPs must meet specific requirements (FGS-	Verify that containers are in good condition and free from severe rusting, bulging, o structural defects. (3)
Turkey 6-2.C and 6-4.A.1 through 6-4.A.4).	Verify that containers, including overpack containers, are compatible with the mate rials stored.
	Verify that containers are kept closed, except when they need to be opened to add c remove waste.
	Verify that containers are not opened, handled, or stored in a manner that could caus a rupture or a leak.
	Verify that containers are marked with a hazardous waste marking and a label indicating the hazard class of the contents (flammable, corrosive, etc.).
HAZARDOUS WASTE ACCUMULATION POINTS	
Documentation	
4-33. HWAPs must maintain a hazardous waste log, inspection logs, manifests, and waste analysis/characterization records (FGS-Turkey 6-5.A through 6-5.E).	 Verify that a written hazardous waste log is maintained that includes the following (2)(3)(5)(9) name and address of the generator description and hazard class of the waste number and types of containers quantity of hazardous waste date stored storage location disposition data, including dates received, sealed, transported, and transported used.
	Verify that the hazardous waste log is available to emergency personnel in the even of a fire or a spill and is maintained until closure of the installation.

REVIEWER CHECKS: August 1997 Verify that the installation maintains inspection logs for 3 yr. Verify that the installation retains manifests of incoming and outgoing hazardous wastes for 3 yr. Verify that the installation retains waste analysis/characterization records until 3 yr after closure.
Verify that the installation retains manifests of incoming and outgoing hazardous wastes for 3 yr. Verify that the installation retains waste analysis/characterization records until 3 yr
wastes for 3 yr. Verify that the installation retains waste analysis/characterization records until 3 yr
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Verify that new HWSAs are (to the maximum extent possible) located so as to mini- mize the risk of a release due to seismic activity, floods, or other natural events. (5)
Verify that, for storage areas located where such risks may be encountered, the instal- lation spill plan addresses the risk.
Verify that containers which hold ignitable or reactive waste are at least 15 m (50 ft) inside the installation's boundary. (2)(5)
Verify that the installation prevents the unknowing entry, and minimizes the possibil- ity of unauthorized entry, of persons or livestock onto HWSA grounds. (5)
Verify that the HWSA security system consists of either:
 a 24-h surveillance system (e.g., television monitors, surveillance by guards) that continuously monitors and controls entry, or an artificial or natural barrier (e.g., a fence in good repair or a fence combined with a cliff) that completely surrounds the area, combined with a means to control entrance at all times (e.g., an attendant, television monitors, locked gate, or controlled roadway access).
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	COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
4-37. HWSAs must have signs that meet specific requirements (FGS-Tur-	Verify that a sign is posted with the words DANGER UNAUTHORIZED PERSON- NEL KEEP OUT at each entrance and at other locations in sufficient numbers to be seen from any approach to the HWSA.	
key 6-3.D.3 and 6- 3.J.2.b).	Verify that the legend is written in English and Turkish and legible from 25 ft [7.5m].	
	(NOTE: Existing signs with a legend other than the above may be used if the legend indicates that only authorized personnel are allowed to enter, and that entry can be dangerous.)	
	Verify that NO SMOKING signs are conspicuously placed wherever there is a haz- ard from ignitable or reactive waste.	
	Verify that, in areas where access by non-English speaking persons is expected, the NO SMOKING legend is written in English and in any other language predominant in the area.	
4-38. Aisle space at each HWSA must allow unobstructed movement (FGS-	Verify that sufficient aisle space is maintained to allow unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility operation.	
Turkey 6-3.E).	Verify that no containers obstruct exits.	
4-39. HWSA container storage areas must have a containment system (FGS-Turkey 6-4.B).	Verify that the container storage area has a containment system that has sufficient capacity to contain 10 percent of the volume of stored containers or the volume of the largest container, whichever is greater. (2)(5)	
	Verify that the HWSA is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.	
	(NOTE: Storage areas that store containers holding only wastes that do not contain free liquids need not have such a containment system, provided that the storage area is sloped or otherwise designed and operated to drain and remove liquid from precip- itation, or the containers are elevated or otherwise protected from contact with accu- mulated liquid.)	

	COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-40. Specific equipment must be present at each HWSA and must be tested (FGS-Turkey 6-3.F and 6-3.G).	 Verify that the following equipment is easily accessible to personnel in HWSAs and in working condition: (5) an internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to HWSA personnel a device, such as an intrinsically safe telephone (immediately available at the scene of operations) or hand-held two-way radio, capable of summoning emergency assistance from base security, fire departments, or emergency response teams portable fire extinguishers, fire control equipment appropriate to the material in storage (including special extinguishing equipment as needed, such as that using foam, inert gas, or dry chemicals) spill control equipment decontamination equipment water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems readily available PPE appropriate to the materials stored eyewash and shower facilities.
4-41. HWSAs must be designed, constructed, maintained, and operated with specific goals in mind (FGS-Turkey 6-3.B).	Verify that the HWSA is designed, constructed, maintained, and operated to mini- mize the possibility of a fire, explosion, or any unplanned release of hazardous waste or hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment. $(1)(2)(5)$
HAZARDOUS WASTE STORAGE AREAS	
Operating Procedures 4-42. HWSAs must be inspected weekly for leaking containers and for deterioration of con- tainers and the contain- ment system caused by corrosion and other fac- tors (FGS-Turkey 6- 4.A.5).	Verify that a weekly inspection is performed. (2)(5) Verify that secondary containment systems are inspected for defects and emptied of accumulated releases.

Republic of Turkey ECAMP REGULATORY REVIEWER CHECKS:	
REQUIREMENTS:	August 1997
4-43. The storage of ignitable, reactive, or incompatible wastes at	Verify that the storage of ignitable, reactive, or incompatible wastes is accomplishes so as to prevent threats to human health or the environment. $(2)(5)$
HWSAs must not threaten human health or the envi-	Verify that the HWSA manager takes precautions to prevent accidental ignition or reaction of ignitable or reactive wastes.
ronment (FGS-Turkey 6-3.J).	Verify that ignitable and reactive waste are separated and protected from sources of ignition or reaction.
	(NOTE: Sources of ignition or reaction include, but are not limited to, open flame smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrica or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions and radiant heat.)
	Verify that, while ignitable or reactive waste is being handled, smoking and ope flames are confined to specially designated areas.
	Verify that water reactive waste is not stored in the same area as flammable and con bustible liquids.
4-44. HWSAs must han- dle incompatible wastes	Verify that incompatible wastes and materials are not placed in the same containe $(2)(5)$
in accordance with spe- cific requirements (FGS- Turkey 6-4.D).	Verify that hazardous waste is not placed in an unwashed container that previous held an incompatible waste or material.
	Verify that storage containers holding a hazardous waste that is incompatible with any waste or other materials stored nearby in containers, piles, open tanks, or surface impoundments are separated from the other materials or protected from them be means of a dike, berm, wall, or other device.
4-45. Certain precautions with regard to handling ignitable, reactive, or incompatible wastes should be taken in HWSAs (MP).	Verify that, when treating, storing, or disposing of ignitable or reactive wastes, when mixing incompatible wastes and other materials, precautions are taken to prevent dangerous reactions, including:
	 generation of extreme heat or pressure, fires or explosions, or violent reaction production of uncontrolled toxic mists, fumes, dusts, or gases sufficient threaten human health or the environment
	 production of uncontrolled flammable fumes or gases sufficient to pose a risk fire or explosions damage to the structural integrity of the device or facility
	- damage to the structural integrity of the device or facility.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-46. HWSA managers must conduct periodic verification testing of the hazardous waste in stor- age (FGS-Turkey 6- 3.C.2).	Verify that periodic verification testing is carried out to ensure that the generator has accurately identified the stored hazardous wastes. (2)(5)
4-47. Prior to accepting waste from a generator, the HWSA manager must follow specific procedures (FGS-Turkey 6-3.C.3).	 Verify that, prior to accepting waste from generators, the HWSA manager: (2)(5) inspects the waste to ensure that it matches the description provided requests a new HWPS from the generator if there is reason to believe that the process generating the waste has changed analyzes waste shipments to see if they match the waste description on the accompanying manifest and documents rejects shipments that do not match the accompanying waste descriptions, unless the generator provides an accurate description.
HAZARDOUS WASTE STORAGE AREAS	
Containers	
4-48. Containers at HWSAs must meet specific standards (FGS-Tur-	Verify that containers are in good condition, and free from severe rusting, bulging, or structural defects. (2)(5)
key 6-4.A.1 through 6-4.A.4).	Verify that containers, including overpack containers, are compatible with the mate- rials stored.
	Verify that containers are kept closed, except when they need to be opened to add or remove waste.
	Verify that containers are not opened, handled, or stored in a manner that could cause a rupture or a leak.
	Verify that containers are marked with a hazardous waste marking and a label indi- cating the hazard class of the contents (flammable, corrosive, etc.), and the date the waste was placed in the container.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
HAZARDOUS WASTE STORAGE AREAS	
Documentation	
4-49. HWSAs must maintain a hazardous waste log, inspection logs, manifests, and waste analysis/characterization records (FGS-Turkey 6-5.A through 6-5.E).	 Verify that the HWSA maintains a written hazardous waste log that includes the following: (2)(3)(5)(9) name and address of the generator description and hazard class of the waste number and types of containers quantity of hazardous waste date stored storage location disposition data, including dates received, sealed, transported, and transported used.
	Verify that the hazardous waste log is available to emergency personnel in the even of a fire or a spill and is maintained until closure of the installation.
	Verify that the HWSA maintains inspection logs for 3 yr.
	Verify that the HWSA retains manifests of incoming and outgoing hazardous waste for 3 yr.
	Verify that the HWSA retains waste analysis/characterization records until 3 yr afte closure.
4-50. HWSAs must have a written closure plan (FGS-Turkey 6-5.F).	 Verify that the HWSA has a closure plan that includes: (2)(5) - estimates of the storage capacity of hazardous waste - the steps to be taken to remove or decontaminate all waste residues - an estimate of the expected date of closure.
	Verify that the installation develops a closure plan prior to opening a new HWSA.
	(2) DRMO (Defense Reutilization and Marketing Office) (3) HWAP Manager (4) Fire Department (5) HW

	COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
HAZARDOUS WASTE STORAGE AREAS	
Closure	
4-51. At the closure of an HWSA, all hazardous waste and hazardous	Verify that, at the closure of an HWSA, all hazardous waste and hazardous waste res- idues, including remaining containers, liners and bases, are removed from the con- tainment system. (2)(5)
waste residues must be removed (FGS-Turkey 6- 7).	Verify that the closure is done in a manner which eliminates or minimizes the need for future maintenance or the potential for future releases of hazardous waste.
	Verify that the HWSA is closed in accordance with the Closure Plan.
TRANSPORTATION OF HAZARDOUS WASTE	
4-52. Installations must prepare offsite hazardous	Verify that the installation prepares offsite hazardous waste shipments in accordance with applicable host nation requirements. (7)
waste shipments in accor- dance with applicable host nation transportation regulations (FGS-Turkey 6-1.D.1).	(NOTE: This requirement applies when transporting hazardous waste, via military vehicle or commercial transportation, on host nation public roads and highways.)
	(NOTE: Standards may include requirements for placarding, marking, containeriza- tion, and labeling among others.)
	Verify that hazardous waste designated for international transport is prepared in accordance with applicable international regulations.
	(NOTE: In the absence of host nation regulations, international standards must be used.)
4-53. All hazardous waste that leaves the	Verify that all hazardous waste that leaves the installation is accompanied by a mani- fest. (7)
installation must be accompanied by a mani-	Verify that the installation uses host nation forms when applicable.
fest (FGS-Turkey 6- 1.D.2).	(NOTE: In the absence of appropriate host nation forms, DD Form 1348-1 may be used.)

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-53. (continued)	 (NOTE: The manifest should include: generator's name, address, and telephone number transporter's name, address, and telephone number destination name, address, and telephone number description of waste total quantity of waste date of shipment date of receipt.)
4-54. Installations should ensure that transportation of hazardous wastes between buildings	Verify that procedures exist to manage movement of hazardous wastes throughout the installation. (7)(8) Verify that drivers are trained in spill control procedures.
is accomplished so as to help prevent spills, releases, and accidents (MP).	Verify that provisions are made to secure wastes in vehicles during transport.
HAZARDOUS WASTE DISPOSAL	
General	
4-55. DOD hazardous waste must normally be disposed of through the DRMS (FGS-Turkey 6-11.A; AF Hazardous	Verify that the installation normally disposes of its DOD hazardous waste throug the DRMS. (1)(5) Verify that, if the installation does not use the DRMS for disposal, the Staff Judg Advocate and the Base Civil Engineer review the contract prior to its submission
Waste Management Pol- icy 6 June 1991, para	the Base Contracts Office (BCO) to ensure that host nation laws are followed.
III(f)).	(NOTE: A decision not to use the DRMS for hazardous waste disposal may be mad for best accomplishment of the mission, but the decision should be concurred in be the component chain of command and the Executive Agent to ensure that installation contracts and disposal criteria are at least as protective as the criteria used by the DRMS.)

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-56. Hazardous waste must not be disposed of in Turkey unless disposal methods meet applicable final governing standards (FGS-Turkey 6-11.B).	Verify that disposal methods meet applicable Turkish final governing standards. (1)(2)(5)(7) Verify that, if a hazardous waste cannot be disposed of in Turkey in accordance with FGS-Turkey, the waste is then either:
	 retrograded to the United States transhipped to another country for disposal.
	Verify that the transshipment has been approved by at least DOD.
4-57. Hazardous material that meets the definition of hazardous waste	Determine whether the installation has any hazardous materials that meet the definition of hazardous waste. $(1)(2)(5)(8)$
must be disposed of as a hazardous waste in cer- tain circumstances (FGS- Turkey 6-11.D).	 Verify that the installation disposes of such materials as hazardous wastes whenever: the installation is discarding the materials as being no longer useful, or the materials have failed the DRMS reutilization, transfer, or sales cycles.
4-58. All Turkish facilities that store, treat, or dispose of DOD-generated waste must be evaluated.	Verify that all Turkish facilities that the installation uses to dispose of DOD-gener- ated waste are evaluated and approved by Turkish authorities as being in compliance with their regulatory requirements. $(1)(2)(5)$
ated and approved (FGS- Turkey 6-11.E).	(NOTE: This evaluation and approval may consist of having a valid permit or Turk- ish equivalent for the hazardous waste that will be handled.)
4-59. Installations wishing to dispose of hazardous wastes in Turkey	Verify that the installation submits for HQ USAFE consideration information whether Turkey has for that hazardous waste:
must submit specific information to HQ USAFE (FGS-Turkey 6- 11.C).	 an effective system for tracking the movement of the waste to its final destination an effective system for granting authorization or permission to those engaged in the collection, transportation, storage, treatment, and disposal of the waste appropriate standards and limitations on the methods that may be used to treat and dispose of the waste
	 standards designed to minimize the possibility of fire, explosion, or any unplanned release or migration of the waste or its constituents to air, soil, surface, or groundwater appropriate levels of training and reliability for all persons and facilities in the waste management process

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
4-60. Hazardous wastes that are disposed of as solid wastes must be treated prior to disposal so that they no longer exhibit hazardous characteristics (FGS-Turkey 6-11.I.1 through 6-11.I.4).	 Determine whether wastes that are categorized as hazardous on the basis of Table 4 1, Section A-1 have been disposed of as solid wastes. (1)(2)(5) Verify that the following approved treatment technologies are used prior to disposal for organics: incineration fuel substitution where the units are operated so that destruction of hazardous constituents is at last as efficient, and hazardous emissions are n
	 greater than those produced by incineration biodegradation recovery chemical degradation for heavy metals: stabilization or fixation recovery for reactives: treatments that change the chemical or physical composition of a material so that it no longer exhibits the characteristic of reactivity for corrosives: neutralization of corrosives to a pH value between 6.0 and 9.0 recovery incineration chemical or electrolytic oxidation chemical reduction stabilization.
HAZARDOUS WASTE DISPOSAL	
Land Disposal	
4-61. Land disposal facilities for hazardous waste must meet specific criteria (FGS-Turkey 6-11.G).	Verify that the land disposal facility has a leachate collection system. $(1)(2)(5)$
	Verify that the land disposal facility has a liner that: - is composed of natural or man-made materials
	 Is composed of natural of main-made materials restricts the downward or lateral escape of hazardous wastes, hazardous mater als and leachate has a permeability no greater than 10⁻⁷ cm/sec [≈ 4 x 10⁻⁸ in./sec].
	Verify that the land disposal facility has a groundwater monitoring program capab of determining the facility's impact on the quality of water in aquifers underlying the facility.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
4-61. (continued)	(NOTE: HQ USAFE may waive these requirements for a particular land disposal site.)		
4-62. The Base Environmental Manager must provide the information required on the HWPS concerning land disposal restrictions (AF Hazardous Waste Management Policy, 6 June 1991, Appendix C, Section B, para 2(c)(1)(c)).	 Verify that the following information is provided on the HWPS: (1)(2)(5) treatability groups USEPA hazardous waste codes all subcategories if there is more than one code the five letter treatment code or the section of the CFR where the treatment appears whether or not a lab pack contains a waste identified as a restricted waste. 		
HAZARDOUS WASTE DISPOSAL			
Incinerators	(NOTE: Specific requirements for incineration of polychlorinated biphenyl (PCB)- containing wastes are set forth in Section 11, <i>Toxic Substances Management.</i>)		
	(NOTE: The requirements of this section apply to incinerators that incinerate HW, as well as to boilers and industrial furnaces that burn HW for any recycling purposes.)		
4-63. Incinerators used to dispose of hazardous waste must be licensed or permitted to accept the type of waste being burned (FGS-Turkey 6-11.H.1).	Verify that incinerators used to dispose of hazardous waste are licensed or permitted by a competent Turkish authority or approved by HQ USAFE. (1)(2)(5)		
4-64. Incinerators for hazardous waste must meet specific standards	Verify that incinerators are designed to include appropriate equipment to effectively destroy hazardous constituents and control harmful emissions. (1)(2)(5)		
as a prerequisite for licensing, permitting, or approval (FGS-Turkey 6- 11.H.2).	Verify that incinerators are operated according to management practices (including proper combustion temperature, waste feed rate, combustion gas velocity, and other relevant criteria) so as to effectively destroy hazardous constituents and control harmful emissions.		

ncinerators must meet pecific operating stan- lards (FGS-Turkey 6- - che incinerator must: - achieve a destruction and removal efficiency of 99.99 percent for th	COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Republic of Turkey ECAMP			
 ncinerators must meet pecific operating stan- lards (FGS-Turkey 6- 11.H.2). the incinerator must: achieve a destruction and removal efficiency of 99.99 percent for the organic hazardous constituents which represent the greatest degree of difficulty of incineration in each waste or mixture of waste minimize CO in stack exhaust gas minimize emission or particulate matter emit no more than 1.8 kg (4 lb) of hydrogen chloride per hour the incinerator has demonstrated the ability to effectively destroy the organ hazardous constituents which represent the greatest degree of difficulty incineration in each mixture of waste to be burned. (NOTE: For example, the latter standard may be met by requiring the incinerator conduct a trial burn, submit a waste feed analysis and a detailed engineering descrition tion of the facility, and provide other information that may be required to enable the competent Turkish authority or HQ USAFE to conclude that the incinerator w effectively destroy the principal organic hazardous constituents of each waste to be 				
		 Verify that incinerators achieve either of the following operating standards: (1)(2)(. the incinerator must: achieve a destruction and removal efficiency of 99.99 percent for the organic hazardous constituents which represent the greatest degree of difficulty of incineration in each waste or mixture of waste minimize CO in stack exhaust gas minimize emission or particulate matter emit no more than 1.8 kg (4 lb) of hydrogen chloride per hour the incinerator has demonstrated the ability to effectively destroy the organi hazardous constituents which represent the greatest degree of difficulty incineration in each mixture of waste to be burned. (NOTE: For example, the latter standard may be met by requiring the incinerator conduct a trial burn, submit a waste feed analysis and a detailed engineering descrition of the facility, and provide other information that may be required to enable to competent Turkish authority or HQ USAFE to conclude that the incinerator we effectively destroy the principal organic hazardous constituents of each waste to be defined to enable to constituents of each waste to be principal organic hazardous constituents of each waste to be defined to each waste to be defined to enable to conclude that the principal organic hazardous constituents of each waste to be defined to each waste to be def		

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Table 4-1

Characteristics of Hazardous Wastes and Lists of Hazardous Wastes and Hazardous Materials (FGS-Turkey, Appendix A)

A-1 CHARACTERISTICS OF HAZARDOUS WASTE

A. General

- 1. A solid waste is a hazardous waste if it exhibits any of the characteristics identified in this section.
- 2. A hazardous waste that is identified by a characteristic in this section is assigned every USEPA Hazardous Waste Number that is applicable. This number must be used in complying with the notification, recordkeeping, and reporting requirements of these alternate standards.
- B. Characteristic of Ignitability
 - 1. A waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:
 - a. It is a liquid, other than an aqueous solution that contains less than 24 percent alcohol by volume and has a flash point less than 60 °C (140 °F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in American Society for Testing and Materials (ASTM) Standard D-93-80, or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78, or as determined by an equivalent test method.
 - b. It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.
 - c. It is an ignitable, compressed gas as determined by appropriate test methods or the USEPA.
 - d. It is an oxidizer.
 - 2. A waste that exhibits the characteristic of ignitability has the USEPA Hazardous Waste Number of D001.
- C. Characteristic of Corrosivity
 - 1. A waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:
 - a. It is aqueous and has a pH less than or equal to 2.0 or greater than or equal to 12.5, as determined by a pH meter.

(continued)

Table 4-1 (continued)

- b. It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm or 0.250 in. per year at a test temperature of 55 °C (130 °F) as determined by the test method specified in the National Association of Corrosion Engineers (NACE) Standard Technical Manual (TM)-01-69 as standardized in *Test Methods for the Evaluation of Solid Waste*, *Physical/Chemical Methods*.
- 2. A waste that exhibits the characteristic of corrosivity has the USEPA Hazardous Waste Number of D002.
- D. Characteristic of Reactivity
 - 1. A waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:
 - a. It is normally unstable and readily undergoes violent change without detonating.
 - b. It reacts violently with water.
 - c. It forms potentially explosive mixtures with water.
 - d. When mixed with water, it generates toxic gases, vapors, or fumes in a quantity sufficient to present danger to human health or the environment.
 - e. It is a cyanide or sulfide bearing waste that, when exposed to pH conditions between 2.0 and 12.5, can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment.
 - f. It is capable of detonation or explosive reaction if subjected to a strong initiating source or if heated under confinement.
 - g. It is readily capable of detonation, explosive decomposition, or reaction at standard temperature and pressure.
 - h. It is a forbidden explosive.
 - 2. A waste that exhibits the characteristic of reactivity has the USEPA Hazardous Waste Number of D003.
- E. Characteristic of Toxicity
 - 1. A waste exhibits the characteristic of toxicity if the extract from a representative sample of the waste contains any of the contaminants listed in Charts A.1 or A.2 at the concentration equal to or greater than the respective value given in that Table. Where the waste contains less than 0.5 percent filterable solids, the waste itself is considered to be the extract for the purpose of this section.
 - 2. A waste that exhibits the characteristic of toxicity has the USEPA Hazardous Waste Number specified in Charts A.1 or A.2 that corresponds to the toxic contaminant causing it to be hazardous.

(continued)

A-2 LISTS OF HAZARDOUS WASTES

A. General

- 1. A solid waste is a hazardous waste if it is listed in this section.
- 2. The basis for listing the classes or types of wastes listed employed one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	
Reactive Waste	
Toxicity Characteristic Waste	
Acute Hazardous Waste	
Toxic Waste	

3. Each hazardous waste listed in Section A-2 is assigned a USEPA Hazardous Waste Number that precedes the name of the waste. This number must be used in complying with the notification, recordkeeping and reporting requirements of these alternative standards.

B. Hazardous Wastes from Nonspecific Sources

The solid wastes in Chart A.3 are listed hazardous wastes from nonspecific sources.

C. Hazardous Wastes from Specific Sources

The solid wastes listed in Chart A.4, denoted "K" as the first character in the USEPA number, are listed hazardous wastes from specific sources.

D. Discarded Commercial Chemical Products, Off-Specification Species, Container Residues, and Spill Residue Thereof

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded: when they are mixed with waste oil or used oil, or other material and applied to the land for dust suppression or road treatment: when they are otherwise applied to the land in lieu of their original intended use; when they are contained in products that are applied to the land in lieu of their original intended use; or when, in lieu of their original intended use, they are produced for use as (or as a component of) a fuel, distributed for use as a fuel, or burned as a fuel.

- 1. Any commercial chemical product, or manufacturing chemical intermediate with the generic name listed in Chart A.4, annotated "P" or "U" as the first character in the USEPA waste number.
- 2. Any off-specification commercial chemical product or manufacturing chemical intermediate that, if it met specifications, would have the generic name listed in Chart A.4, annotated "P" or "U" as the first character in the USEPA waste number.
- 3. Any residue remaining in a container or in an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic name listed in Chart A.4, annotated "P" or "U" as the first character in the USEPA waste number, unless the container is empty.

(continued)

(NOTE: Unless the residue is being beneficially used or reused, being legitimately recycled or reclaimed, or being accumulated, stored, transported, or treated prior to such use, reuse, recycling or reclamation, the residue should be discarded, and is thus a hazardous waste. An example of a legitimate reuse of the residue would be where the residue remains in the container, and the container is used to hold the same commercial chemical product or manufacturing chemical intermediate it previously held. An example of the discard of the residue would be where the drum is sent to a drum reconditioner who reconditions the drum but discards the residue.)

4. Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in Chart A.4, annotated "P" or "U" as the first character in the USEPA waste number, or any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any off-specification chemical product and manufacturing chemical intermediate that, if it me specifications, would have the generic name listed in Chart A.4, annotated "P" or "U" as the first character in the USEPA waste number of this section.

(NOTE: The phrase "commercial chemical product or manufacturing chemical intermediate having the generic name listed in..." refers to a chemical substance that is manufactured or formulated for commercial or manufacturing use that consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulation in which the chemical is the sole active ingredient. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in Chart A.4, annotated "P" or "U" as the first character in the USEPA waste number. Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in Chart A.4, annotated "P" or "U" as the first character in the USEPA waste number, such waste will be listed in Chart A.3 or will be identified as a hazardous waste by the characteristics set forth in section A-1.)

5. The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products or manufacturing chemical intermediates referred to in Chart A.4, denoted "P" as the first character in the USEPA waste number, are hereby identified as acute hazardous wastes (H).

(NOTE: For the convenience of the regulated community; the primary hazardous properties of these materials have been indicated by the letters T (Toxicity) and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity.)

These wastes and their corresponding USEPA Hazardous Waste Numbers are listed in Chart A.4, annotated "P" as the first character in the USEPA waste number.

6. The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in Chart A.4 are hereby identified as toxic wastes (T), unless otherwise designated.

(NOTE: For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letter T (Toxicity), R (Reactivity), I (Ignitability), and C (Corrosivity). Absence of a letter indicates that the compound is only listed for toxicity.)

Chart A.1

USEPA HW No. ¹	Contaminant	CAS No. ²	Regulatory Level (mg/L)
D004	arsenic	7440-38-2	5.0
D005	barium	7440-39-3	100.0
D006	cadmium	7440-43-2	1.0
D007	chromium	7440-47-3	5.0
D016	2,4-D	94-75-7	10.0
D012	endrin	72-20-8	0.02
D008	lead	7439-92-1	5.0
D013	lindane	58-89-9	0.4
D009	mercury	7439-97-6	0.2
D014	methoxychlor	72-43-5	10.0
D010	selenium	7782-49-2	1.0
D011	silver	7440-22-4	5.0
D015	toxaphene	8001-35-2	0.5
D017	2,4,5-TP (Silvex)	93-72-1	1.0

Maximum Concentration of Contaminants for the Toxicity Characteristics

¹ USEPA Hazardous Waste Number.

² Chemical Abstracts Service Number.

Chart A.2

MAXIMUM CONCENTRATION OF CONTAMINANTS FOR NONWASTEWATER

USEPA HW No. ¹	Contaminant	CAS No. ²	Regulatory Level mg/kg
D018	Benzene	71-43-2	36
D019	Carbon tetrachloride	56-23-5	5.6
D020	Chlordane	57-74-9	0.13
D021	Chlorobenzene	108-90-7	5.7
D022	Chloroform	67-66-3	5.6
D023	o-Cresol	95-48-7	5.6
D024	m-Cresol	108-39-4	3.2
D025	P-Cresol	106-44-5	3.2
D026	Cresol		3.2
D027	1,4-Dichlorobenzene	106-46-7	6.2
D028	1,2-Dichloroethane	107-06-2	7.2
D029	1,1-Dichloroethylene	75-35-4	33
D030	2,4-Dinitrotoluene	121-14-2	140
D031	Heptachlor (and its epoxide)	76-44-8	0.066
D032	Hexachlorobenzene	118-74-1	37
D033	Hexachlorobutadiene	87-68-3	28
D034	Hexachloroethane	67-72-1	28
D035	Methyl Ethyl Ketone	78-93-3	36
D036	Nitrobenzene	98-95-3	14
D037	Pentachlorophenol	87-86-5	7.4
D038	Pyridine	110-86-1	16
D039	Tetrachloroethylene	127-18-4	5.6
D040	Trichloroethylene	79-01-6	5.6
D041	2,4,5-Trichlorophenol	95-95-4	37
D042	2,4,6-Trichlorophenol	88-06-2	37
D043	Vinyl Chloride	75-01-4	33

¹ USEPA Hazardous Waste Number.

² Chemical Abstracts Service Number.

Chart A.3

LISTED HAZARDOUS WASTES FROM NONSPECIFIC SOURCES

USEPA Waste No. ¹	Hazardous Waste	Hazard Code
F001	The following spent halogenated solvents used in degreasing: tetra- chloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloro- ethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of 10 percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F002	The following spent halogenated solvents: tetrachloroethylene, meth- ylene chloride, trichloroethylene, 1,1,1-trichloroethane, chloroben- zene, 1,1,2-trichloro-1,2,2-trifluoroethane, orthodichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of 10 percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F003	The following spent nonhalogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, before use, only the above spent nonhalogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above nonhalogenated solvents and a total of 10 percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I)
F004	The following spent nonhalogenated solvents: cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of 10 percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)

USEPA Waste No. ¹	Hazardous Waste	Hazard Code
F005	The following spent nonhalogenated solvents: Toluene, methyl- ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyetha- nol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of 10 percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent sol- vents and spent solvent mixtures	(I,T) ²
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc planting (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	(T)
F007	Spent cyanide plating bath solutions from electroplating operations.	(R,T)
F008	Plating bath residues from the bottom of plating baths from electroplat- ing operations where cyanides are used in the process.	(R,T)
F009	Spent stripping and cleaning bath solutions from electroplating opera- tions where cyanides are used in the process.	(R,T)
F010	Quenching bath residues from oil baths from metal heat treating opera- tions where cyanides are used in the process.	(R,T)
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	(R,T)
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	(T)
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can wash- ing when such phosphating is an exclusion conversion coating process.	(T)

1. USEPA Hazardous Waste Number

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2. (I,T) should be used to specify mixtures containing ignitable and toxic constituents.

Chart A.4

LIST OF HAZARDOUS WASTE/SUBSTANCES/MATERIALS

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Acenaphthene	83329			100
Acenaphthylene	208968			5000
Acetaldehyde (i)	75070		U001	1000
Acetaldehyde, chloro-	107200		P023	1000
Acetaldehyde, trichloro-	75876		U034	5000
Acetamide, N-(aminothioxomethyl)-	591082		P002	1000
Acetamide, N-(4-ethoxyphenyl)-	62442		U187	100
Acetamide, 2-fluoro-	640197		P057	100
Acetamide, N-9H-fluoren-2-yl-	53963		U005	1
Acetic acid	64197			5000
Acetic acid (2,4-dichlorophenoxy)-	94757		U240	100
Acetic acid, lead(2+) salt	301042		U144	\$
Acetic acid, thallium(1+) salt	563688		U214	100
Acetic acid, ethyl ester (I)	141786		U112	5000
Acetic acid, fluoro-, sodium salt	62748		P058	10
Acetic anhydride	108247			5000
Acetone (I)	67641		U002	5000
Acetone cyanohydrin	75865	1000	P069	10
Acetone thiosemicarbazide	1752303	1000/10,000		1
Acetonitrile (I,T)	75058		U003	5000
Acetophenone	98862		U004	5000
2-Acetylaminofluorene	53963		U005	1
Acetyl bromide	506967			5000
Acetyl chloride (C,R,T)	75365		U006	5000
1-Acetyl-2-thiourea	591082		P002	1000
Acrolein	107028	500	P003	1
Acrylamide	79061	1000/10,000	U007	5000
Acrylic acid (I)	97107		U008	5000
Acrylonitrile	107131	10,000	U009	100
Acrylyl chloride	814686	100		1
Adipic acid	124049			5000
Adiponitrile	111693	1000		1
Aldicarb	116063	100/10,000	P070	1

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Aldrin	309002	500/10,000	P004	1
Allyl alchol	107186	1000	P005	100
Allylamine	107119	500		100
Ally chloride	107051			1000
Aluminum phosphide (R,T)	20859738	500	P005	100
Aluminum sulfate	10043013			5000
5-(Aminomethyl)-3-isoxazolol	2763964		P007	1000
Aminoptenn	54626	500/10,000		1
4-Aminopyndine	504245		P008	1000
Amiton	78535	500		1
Amiton oxalate	3734972	100/10,000		1
Amitrole	61825		U011	10
Ammonia	7664417	500		100
Ammonium acetate	631618			5000
Ammonium benzoate	1863634		·····	5000
Ammonium bicarbonate	1066337			5000
Ammonium bichromate	7789095			10
Ammonium bifluonde	1341497			100
Ammonium bisulfite	10192300			5000
Ammonium carbamate	1111780			5000
Ammonium carbonate	506876			5000
Ammonium chloride	12125029			5000
Ammonium chromate	778989			10
Ammonium citrate, dibasic	3012655			5000
Ammonium fluoborate	13826830			5000
Ammonium fluoride	12125018			100
Ammonium hydroxide	1336216			1000
Ammonium oxalate	6009707 5972736 14258492			5000
Ammonium picrate (R)	131748		P009	10
Ammonium silicofluoride	16919190			1000
Ammonium sulfamate	7773060			5000
Ammonium sulfide	12135761			100
Ammonium tartrate	14307438 3164292			5000
Ammonium thiocyanate	1762954			5000
Ammonium vanadate	7803556		P119	1000
Amphetamine	300629	1000		1

Table 4-1	(continued)
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Table 4-1 (continued)

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Amyl acetate	628637	Quantity (pounds)		5000
iso-Amyl acetate	123922			
Sec-Amyl acetate	626380			
tert-Amyl acetate	625161			
Aniline (I,T)	62533	1000	U012	5000
Aniline, 2,4,6- trimethyl	88051	500		1
Anthracene	120127			5000
Antimony++	7440360			5000
Antimony pentachloride	7647189			1000
Antimony pentafluoride	7783702	500		1
Antimony potassium tartrate	28300745			100
Antimony tribromide	7789619			1000
Antimony trichloride	10025919			1000
Antimony trifluoride	7783564			1000
Antimony trioxide	1309644			1000
Antimycine A	1397940	1000/10,000		1
ANTU	86884	500/10,000		100
Argentate(1-), bis(cyano-C)-, potassium	506616		P099	1
Aroclor 1016	12674112			1
Aroclor 1221	11104282			1
Arcolor 1232	11141165			1
Aroclor 1242	53469219			1
Aroclor 1248	12672296			1
Aroclor 1254	11097691			1
Aroclor 1260	11096825			1
Arsenic++	7440382			1
Arsenic acid H_3AsO_4	1327522		P010	1
	7778394			***
Arsenic disulfide	1303328			1
Arsenic oxide As_2O_3	1327533		P012	1
Arsenic oxide As_2O_5	1303282		P011	· 1
Arsenic pentoxide	1303282	100/10,000	P011	1
Arsenic trichloride	7784341			1
Arsenic trioxide	1327533		P012	1
Arsenic trisulfide	1303339			1
Arsenous trichloride	7784341	500		5000
Arsine	7784421	100		1
Arsine, diethyl-	692422		P038	1
Arsinic acid, dimethyl-	75605		U136	1

Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Arsorous dichloride, phenyl-	696286		P036	1
Asbestos+++	1332214			1
Auramine	492808		U014	100
Azasenne	115028		U015	1
Azindine	151564		P054	1
Azindine, 2-methyl-	75558		P067	1
Azinno[2',3',3,4]pyrrolo[1,2-a] indole-4, 7-dione,6-amino- 8- [(aminocarbonylooxy) methyl]-1,1a,2,8,8a,8b- hexahydro-8a-methoxy-5- methyl-,[1aS-(1a-alpha,8- beta, 8a-alpha, 8b-alpha)]-	50077		U010	10
Aziphos-ethyl	2642719	100/10,000		1
Azinphos-methyl	86500	10/10,000		1
Banum cyanide	542621		P013	10
Benz[1]aceanthrylene, 1,2-dihydro- 3-methyl-	56421		U157	10
Benz[c]acridine	225514		U016	100
Benzal chloride	98873	500	U017	5000
Benzamide, 3,5-dichloro-N-(1,1- dimethyl-2-propynyl)-	23950595		U192	5000
Benz[a]anthracene	56553		U018	10
1,2-Benzathracene	56553		U018	10
Benz[a]anthracene, 7,12-dimethyl-	57976		U094	1
Benzenamine (I,T)	62533		U012	5000
Benzenamine, 3-(Trifluoromethyl)	98168	500		1
Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-	492808		U014	100
Benzenamine, 4-chloro-	106478		P024	1000
Benzenamine 4-chloro-2-methyl- hydrochloride,	3165933		U049	100
Benzenamine, N,N-dimethyl-4- (phenylazo-)	60117		U093	10
Benzenamine, 2-methyl-	95534		U328	100
Benzenamine, 4-methyl-	106490		U353	100
Benzenamine, 4,4'-methylenebis(2- chloro-	101144		U158	10
Benzenamine, 2-methyl-, hydrochlo- ride	636215		U222	100
Benzenamine, 2-methyl-5-nitro-	99558		U181	100

(continued)

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Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Benzenamine, 4-nitro-	100016		P077	5000
Benzene (I,T)	71432		U109	10
Benzene, 1-(Chloromethyl)-4-Nitro-	100141	500/10,000		1
Benzeneacetic acid, 4-chloro- alpha-(4-chlorophenyl)-alpha- hydroxy-, ethyl ester	510156		U038	1
Benzene, 1-bromo-4-phenoxy-	101553		U030	100
Benzenearsonic Acid	98055	10/10,000		1
Benzenebutanoic acid, 4-[bis (2-chloroethyl)amino]-	305033		U035	10
Benzene, chloro-	108907		U037	100
Benzene, chloromethyl-	100447		P028	100
Benzenediamin, ar-methyl-	95807 496720 823405		U221	10
1,2-Benzenedicarboxylic acid, dioctyl ester	117840		U107	5000
1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)]-ester	117817		U028	100
1,2-Benzenedicarboxylic acid, dibutyl ester	84742		U069	10
1,2-Benzenedicarbosylic acid, diethyl ester	84662		U088	1000
1,2-Benzenedicarbosylic acid, dimethyl ester	131113		U102	5000
Benzene, 1,2-dichloro-	95501		U070	100
Benzene, 1,3-dichloro-	541731		U071	100
Benzene, 1,4-dichloro-	106467		U072	100
Benzene, 1,1'-(2,2-dichloroeth- ylidene) bis[4-chloro-	72548		U060	1
Benzene, dichloromethyl-	98873		U017	5000
Benzene, 1,3-diisocyanotomethyl- (R,T)	584849 91087 264716254		U223	100
Benzene, dimethyl (I,T) m-Benzene, dimethyl o-Benzene, dimethyl p-Benzene, dimethyl	1330207 108383 95476 106423		U239	1000
1,3-Benzenediol	108463		U201	5000
1,2-Benzenediol, 4-[1 -hydroxy-2- (methylamino)ethyl]- (R)	51434		P042	1000

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Table 4-1	(continued)
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Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Benzeneethanamine, alpha,	122098		P046	5000
alpha-dimethyl-				
Benzene, hexachloro-	118741		U127	10
Benzene, hexahydro- (I)	110827		U056	1000
Benzene, hydroxy-	108952		U188	1000
Benzene, methyl-	108883		U220	1000
Benzene, 2-methyl-1,3-dinitro-	606202		U106	100
Benzene, 1-methyl-2,4-dinitro-	121142		U105	10
Benzene, 1-methylethyl- (I)	98828		U055	5000
Benzene, nitro-	98953		U169	1000
Benzene, pentachloro	608935		U183	10
Benzene, pentachloronitro-	82688		U185	100
Benzenesulfonic acid chloride (C,R)	98099		U020	100
Benzenesulfonyl chloride	98099		U020	100
Benzene, 1,2,4,5-tetrachloro-	95943		U207	5000
Benzenethiol	108985		P014	100
Benzene, 1,1'-(2,2,2-tri- chloroethylidene)bis[4-chloro-	50293		U061	1
Benzene, 1,1'-(2,2,2-tri- chloroethylidene)bis[4-methoxy-	72435		U247	1
Benzene,(trichloromethyl)-	98077		U023	10
Benzene, 1,3,5-trinitro-	99354		U234	10
Benzidine	92875		U021	1
Benzimidazole, 4,5-Dichloro-2- (Trifluormethyl)-	3615212	500/10,000		1
1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide	81072		U202	100
Benzo[a]anthracene	56553		U018	10
Benzo[b]fluoranthene	205992			1
Benzo[k]fluoranthene	207089	- · · · · · · · · · · · · · · · · · · ·		5000
Benzo[j,k]fluorene	206440		U120	100
1,3-Benzodioxole, 5-(1-propenyl)-	120581		U141	100
1,3-Benzodioxole, 5-(2-propenyl)-	94597		U203	100
1,3-Benzodioxole, 5-propyl	94586		U090	10
Benzoic acid	65850			5000
Benzonitrile	100470			5000
Benzo[rst]pentaphene	189559		U064	10
Benzo[ghi]perylene	191242			5000

Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
2H-1-Benzophyran-2-one,	81812		P001	100
4-hydroxy-3-oxo-1-				
phenyl-butyl)-, & salts,				
when present at concentrations				
greater than 0.3%			11022	1
Benzo[a]pyrene	50328		U022	1
3,4-Benzopyrene	50328		U022	1
p-Benzoquinone	106514	100	U197	10
Benzotrichloride (C,R,T)	98077	100	U023	10
Benzoyl chloride	98884		770.50	1000
1,2-Benzphenanthrene	218019		U050	100
Benzyl chloride	100447	500	P028	100
Benzy cyanide	140294	500		1
Beryllium++	7440417		P015	10
Beryllium chloride	7787475			1
Beryllium fluoride	7787497			1
Beryllium nitrate	13597994			1
	7787555			
alpha-BHC	319846			10
beta-BHC	319857			1
delta-BHC	319868			1
gamma-BHC	58899		U129	1
Bicyclo [2,2,1]Heptane-2- carbonitrile, 5-chloro-6-	15271417	500/10,000		1
(((Methylamino)Carbonyl)Oxy- lmino)-,				
(1s-(1-alpha, 2-beta, 4-alpha, 5-alpha, 6E))-				
2,2'-Bioxirane	1464535		U085	10
(1,1'-Biphenyl)-4,4'diamine	92875		U021	1
(1,1'-Biphenyl)-4,4'diamine, 3,3'dichloro-	91941		U073	1
(1,1'-Biphenyl)-4,4'diamine, 3,3'dimethoxy-	119904		U091	100
(1,1'-Biphenyl)-4,4'diamine, 3,3'dimethyl-	119937		U095	10
Bis(chloromethyl) ketone	534076	10/10,000		1
Bis(2-chloroethyl)ether	111444		U025	10
Bis(2-chloroethoxy)methane	111911	· · · · · · · · · · · · · · · · · · ·	U024	1000
Bis(2-ethylhexyl)phthalate	117817	<u> </u>	U028	100
Bitoscanate	4044659	500/10,000		1

Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Boron trichloride	10294345	500		1
Boron trifluoride	7637072	500		1
Boron trifluoride compound with	353424	1000		1
methyl ether (1:1)	555121	1000		
Bromoacetone	598312		P017	1000
Bromadiolone	28772567	100/10,000		1
Bromine	7726956	500		1
Bromoform	75252		U225	100
4-Bromophenyl phenyl ether	101553		U030	100
Brucine	357573		P018	100
1,3-Butadiene, 1,1,2,3,4,4-	87683		U128	1
hexachloro-				
1-Butanamine, N-butyl-N-nitroso-	924163		U172	1
1-Butanol	71363		U031	5000
2-Butanone	78933		U159	5000
2-Butanone peroxide (R,T)	1338234		U160	10
2-Butanone, 3,3-dimethyl-1-	3916184		P045	100
(methylthio)-, O[(methylamno) carbonyl] oxime				
2-Butenal	123739 4170303		U053	100
2-Butene, 1,4-dichloro- (I,T)	764410		U074	1
2-Butenoic acid, 2-methyl-, 7[[2,	303344		U143	10
3-dihydroxy-2-(1-meth- oxyethyl)-3-				ĺ
methyl-1-oxobutoxy]methyl]-2,3,5,				
7a-tetrahydro-1H- pyrrolizine-1-yl ester, [1S-[1- alpha(Z), 7(2S*,3R*),				
7a-alpha]]-				
Butyl acetate	123864			5000
iso-Butyl acetate	110190			2000
sec-Butyl acetate	105464			
tert-Butyl acetate	540885			
n-Butyl alcohol (I)	71363		U031	5000
Butylamine	109739			1000
iso-Butylamine	78819			
sec-Butylamine	513495			Í
to at Desta la sucie a	13952846			
tert-Butylamine	75649			100
Butyl benzyl phthalate	85687			100
n-Butyl phthalate	84742		U069	10
Butyric acid	107926			5000
iso Butyric acid	79312			

 Table 4-1 (continued)

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Cacodylic acid	75605		U136	1
Cadmium++2 ⁺	7440439			10
Cadmium acetate	543908			10
Cadmium bromide	7789426			10
Cadmium chloride	10108642			10
Cadmium oxide	1306190	100/10,000		1
Cadmium stearate	2223930	1000/10,000		1
Calcium arsenate	7778441	500/10,000		1
Calcium arsenite	52740166			1
Calcium carbide	75207			10
Calcium chromate	13765190		U032	10
Calcium cyanide Ca(CN)2	592018		P0221	10
Calcium dodecylbenzenesulfonate	26264062			1000
Calcium hypochlorite	7778543			10
Camphechlor	8001352	500/10,000		1
Camphene, octachloro-	8001352		P123	1
Cantharidin	56257	100/10,000		1
Carbachol chloride	51832	500/10,000		1
Captan	133062			10
Carbamic acid, ethyl ester	51796		U238	100
Carbamic acid, methylnitroso-, ethyl ester	615532		U178	1
Carbamic acid, Methyl-, 0-(((2,4-Dimethyl-1, 3- Dithiolan-2-yl)Methyliene)Amino)-	26419738	100/10,000		1
Carbamic chloride, dimethyl-	79447		U097	1
Carbamodithioic acid, 1,2- ethaneiylbis, salts & esters	111546		U114	5000
Carbamothioic acid, bis(1- methylethyl)-, S-(2,3-dichloro-2- propenyl) ester	2303164		U062	100
Carbaryl	63252			. 100
Carbofuran	1563662	10/10,000		10
Carbon disulfide	75150	10,000	P022	100
Carbon oxyfluoride (R,T)	353504		U033	1000
Carbon tetrachloride	56235		U211	10
Carbonic acid, dithallium(1+)salt	6533739		U215	100
Carbonic dichloride	75445		P095	10
Carbonic difluoride	353504		U033	1000
Carbonochloridic acid, methyl ester	79221		U156	1000
Carbophenothion	786196	500		1

Harring Wester (Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Hazardous Waste/Substances		Quantity (pounds)	U034	(pounds) 5000
Chloral	75876			
Chlorambucil	305033	1000	U035	10
Chlordane	57749	1000	U036	1
Chlordane, alpha & gamma isomers	57749	-	U036	1
Chlordane, technical	57749	500	U036	. 1
Chlorfenvinfos	470906	500		1
Chlorine	7782505	100		10
Chlormephos	24934916	500		1
Chlormequat chloride	999815	100/10,000		1
Chlornaphazine	494031		U026	100
Chloroacetaldehyde	107200		P023	1000
Chloroacetic acid	79118	100/10,000		1
p-Chloroaniline	106478		P024	1000
Chlorobenzene	108907		U037	100
Chlorobenzilate	510156		U038	10
p-Chloro-m-cresol	59507		U039	5000
Chlorodibromomethane	124481			100
Chloroethane	75003			100
Chloroethanol	107073	500		1
Chlorethyl chlorofomate	627112	1000		1
2-Chloroethyl vinyl ether	110758		U042	1000
Chloroform	67663	10,000	U044	10
Chloromethyl ether	542881	100		1
Chloromethyl methyl ether	107302	100	U046	10
beta-Chloronaphthalene	91587		U047	5000
2-Chloronaphthalene	91587		U047	5000
Chlorophacinone	3691358	100/10,000		1
o-Chlorophenol (2)	95578	-	U048	100
4-Chlorophenol phenyl ether	7005723			5000
1-(o-Chlorophenyl)thiourea	5344821		P026	100
3-Chloropropionitrile	542767		P027	1000
Chlorosulfonic acid	7790945			1000
4-Chloro-o-toluidine, hydrochloride	3165933		U049	100
Chlorphyrifos	2921882			1
Chloroxuron	1982474	500/10,000		1
Chlorthiophos	21923239	500		1
Chromic acetate	1066304			1000
Chromic acid	11115745 7738945			10
Chromic acid H ₂ CrO ₄ , calcium salt	13765190		U032	10

(continued)

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Chromic chloride	10025737	1/10,000		1
Chromic sulfate	10101538			1000
Chromium++	7440473			5000
Chromous chloride	10049055			1000
Chrysene	218019	· · · · · · · · · · · · · · · · · · ·	U050	100
Colbalt, ((2,2'-(1,2-ethanediylbis (Nitrilomethylidyne)) Bis(6-fluoro-phenolato))(2-)- N,N',O,O')-,	62207765	100/10,000		1
Cobaltous bromide	7789437			1000
Colbalt carabonyl	10210681	10/10,000		1
Cobaltous formate	544183			1000
Colbaltous sulfamate	14017415			1000
Coke Oven Emissions	NA			1
Colchicine	64868	10/10,000		1
Copper cyanide	544923		P029	10
Coumaphos	56724	100/10,000		10
Coumatetralyl	5836293	500/10,000		1
Creosote	8001589		U051	1
Cresol(s) m-Cresol o-Cresol p-Cresol	1319773 108394 95487 106445	1000/10,000	U052	1000 1000
Cresylic acid m-Cresol o-Cresol p-Cresol	1319773 108394 95487 106445		U052	1000
Crimidine	535897	100/10,000		1
Crotonaldehyde	123739 4170303	1000 100	U053	100 100
Cumene (I)	98828		U055	5000
Cupric acetate	142712			100
Cupric acetoarsenite	12002038			1
Cupric chloride	7447394			10
Cuprice nitrae	3251238			100
Cupric oxalate	5893663			100
Cupric sulfate	7758987			10
Cupric sultate, ammoniated	10380297			100
Cupric tartrate	815827			100

 Table 4-1 (continued)

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Cyanides (soluble salts and com-	57125		P030	10
plexes)				
not otherwise specified			D 001	100
Cyanogen	460195	500110.000	P031	100
Cyanogen bromide	506683	500/10,000	U246	1000
Cyanogen chloride	506774		P033	10
Cyanogen iodide	506785	1000/10,000		1
Cyanophos	2636262	1000		1
Cyanuric fluoride	675149	100		1
2,5-Cyclohexadiene-1,4-dione	106514		U197	10
Cyclohexane (I)	110827		U056	1000
Cyclohexane, 1,2,3,4,5,6-hexachloro, (1-alpha, 2-alpha, 3-beta, 4-alpha, 5-alpha, 6-beta)-	58899		U129	1
Cyclohexanone (I)	108941		Y057	5000
2Cyclohexanone	131895		P034	100
Cycloheximide	66819	100/10,000		1
Cyclohexylamine	108918	10,000		1
1,3-Cyclopentadiene, 1,2,3,4,5,5- hexachloro-	77474		U130	10
Cyclophosphamide	50180		U058	10
2,4-D Acid	94757		U240	100
2,4-D Ester	94111 94791 94804 1320189 1928387 1928616 1929733 2971382 25168267 53467111			100
2,4-D, salts & esters	94757		U240	100
Daunomycin	20830813		U059	10
Decarborane(14)	17702419	500/10,000		1
Demeton	8065483	500		1
Demeton-S-Methyl	919868	500		1
DDD, 4,4'DDD	72548		U060	1
DDD, 4,4'DDE	72559			1
DDT, 4,4'DDT	50293		U061	1
Diallate	2303164		U062	100
Dialifor	10311849	100/10,000		1

 Table 4-1 (continued)

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Diazinon	333415			1
Dibenz[a,h]anthracene	53703		U063	1
1,2:5,6-Dibenzanthracene	53703		U063	1
Dibenzo[a,h]anthracene	53703	····	U063	1
Dibenz[a,i]pyrene	189559		U064	10
1,2-Dibromo-3-chloropropane	96128		U066	1
Diborane	19287457	100		1
Dibutyl phthalate	84742		U069	10
Di-n-butyl phthalate	84742		U069	10
Dicamba	1918009			1000
Dichlobenil	119456			100
Dichlone	117806			1
Dichlorobenzene	25321226			100
m-Dichlorobenzene (1,3)	541731		U071	100
o-Dichlorobenzene (1,2)	95501		U070	100
p-Dichlorobenzene (1,4)	106467		U072	100
3,3'-Dichlorobenzidine	91941		U073	1
Dichlorobromomethane	75274			5000
1,4-Dichloro-2-butene (I,T)	764410		U074	1
Dichloroifluoromethane	75718		U075	5000
1,1-Dichloroethane	75343		U076	1000
1,2-Dichloroethane	107062		U077	100
1,1-Dichloroethylene	75354		U078	100
1,2-Dichloroethylene	156605		U079	1000
Dichloroethyl ether	11444	10,000	U025	10
Dichloroisopropyl ether	108601		U027	1000
Dichloromethoxy ethane	111911		U024	1000
Dichloromethyl ether	542881		P016	10
Dichloromethylphenylsilane	149746	1000		1
2,4-Dichlorophenol	120832		U081	100
2,6-Dichlorophenol	87650		U082	. 100
Dichlorophenylarsine	696286		P036	1
Dichloropropane	26638197			1000
1,1-Dichloropropane	78999			
1,3-Dichloropropane	142289			
1,2-Dichloropropane	78875		U083	1000
Dichloropropane-Dichloropropene (mixture)	8003198			100
Dichloropropene 2,3-Dichloropropene	26952238 78886			100

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
1,3-Dichloropropene	542756		U084	100
2,2-Dichloropropionic acid	75990			5000
Dichlorvos	62737	1000		100
Dicofol	115322		· · · · · · · · · · · · ·	10
Dicrotophos	141662	100		1
Dieldrin	60571		P037	1
1,2:3,4-Diepoxybutane (I,T)	1464535	500	U085	10
Diethyl chlorophospate	814493	500		1
Diethylamine	109897			100
Diethylarsine	692422		P038	1
Diethylcarbmazine citrate	1642542	100/10,000		1
1,4-Diethylenedioxide	123911		U108	100
Diethylhexyl phthalate	117817		U028	100
N,n'-Diethylhydrazine	1615801		U086	10
O,O-Diethyl S-methyl dithiophosphate	3288582		U087	5000
Diethyl-p-nitrophenyl phosphate	311455		P041	100
Diethyl phthalate	84662		P088	1000
O,O-Diethyl O-pyrazinyl phosphorothioate	297972		P040	100
Diethylstilbestrol	56531		U089	1
Digitoxin	71636	100/10,000		1
Diglycidyl Ether	2238075	1000		1
Digoxin	20830755	10/1000		1
Dihydrosafrole	94586		U090	10
Diisopropylfluorophosphate, 1,2,3,4, 10,10-10-hexa-chloro-1,4,4a,5,8, 8a-hexahydro-(1-alpha, 4-alpha, 4-beta, 5-alpha, 8-alpha,	309002		U004	1
8a-beta)1,4,5,8-Dimethanonaphtha- lene, 1,2,3,4,10,10-hexachloro-1,4,4a,5, 8,8a-hexahydro, (1-alpha, 4-alpha, 4a-beta, 5a-beta, 8-beta,	465736		P060	
8a-beta)-2,7:3,6-Dimethanon- aphth[2,3 b]oxirene,3,4,5,6,9,9-hexachloro- 1a,2,2a,3,6,6a,7,7a-octahydro-, (1a-alph, 2-beta, 2a-alpha, 3-beta, 6-beta	60571		P037	1

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
6a-alpha, 7beta, 7a-alpha)-2,7:3,6	72206		P051	1
Dimethanonaphth[2,3-b]oxirene,				
3,4,5,6,9,9-hexachloro-1a,2,2a,				
3,6,6a,7,7a-octa-hydro-,				
(1a-alpha, 2-beta, 2a-beta,				
3-alpha, 6-alpha,	(0515		D044	10
6a-beta, 7-beta, 7a-alpha)-Dimethoate	60515		P044	
3,3'-Dimethoxybenzidine	119904		U091	100
Dimefox	115264	500		1
Dimethoate	60515	500/10,000		10
Dimethyl Phosphorochloridothioate	2524030	500		1
Dimethyl sulfate	77781	500		1
Dimethyl sulfide	75183	100		1
Dimethylamine (I)	124403		U092	1000
p-Dimethylaminoazobenzene	60117		U093	10
7,12-Dimethylbenz[a]anthracene	57976		U094	1
3,3'Dimethylbenzidine	119937		U095	10
alpha, alpha-	80159		U096	10
Dimethylbenzylhydroperoxide (R)				
Dimethylcarbamoyl chloride	79447		U097	1
Dimethyldichlorosilane	75785	500		1
1,1-Dimethylhydrazine	57147	1000	U098	1
1,2-Dimethylhydrazine	540738		U099	1
alpha, alph-Dimethylphenethylamine	122098		P046	5000
Dimethyl-p-phenylenediamine	99989	10/10,000		1
2,4-Dimethylphenol	105679		U101	100
Dimethyl phthalate	131113		U102	5000
Dimethyl sulfate	77781		U103	100
Dimetilian	644644	500/10,000		1
Dinitrobenzene (mixed)	25154545			100
m-Dinitrobenzene	99650			
o-Dinitrobenzene	528290			
p-Dinitrobenzene	100254			
4,6-Dinitro-o-cresol and salts	534521	10/10,000	P047	10
Dinitrophenol	25550587			10
2,5-Dinitrophenol	329715			
2,6-Dinitrophenol	573568		1	
2,4-Dinitrophenol	51285		P048	10
Dinitrotoluene	25321146			10
3,4-Dinitrotoluene	610399			
2,4-Dinitrotoluene	121142		U105	10

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
2,6-Dinitrotoluene	606202		U106	100
Dinoseb	88857	100/10,000	P020	1000
Dinoterb	1420071	500/10,000		1
Di-n-octyl phthalate	117840	······································	U107	5000
1,4-Dioxane	123911		U108	100
Dioxathion	78342	500		1
Diphacinone	82666	10/10,000		1
1,2-Diphenylhydrazine	122667		U109	10
Disphosphoramide, octamethyl-	152169	100	P085	100
Diphosphoric acid, tetraethyl ester	107493		P111	10
Dipropylamine	142847		U110	5000
Di-n-propylnitrosamine	621647		U111	10
Diquat	85007 2764729			1000
Disulfoton	298044	500	P039	1
Dithiazanine iodine	514738	500/10,000	~~~~~	1
Dithiobiuret	541537	100/10,000	P049	100
Diuron	330541			100
Dodecylbenzenesulfonic acid	27176870			1000
Emetine, Dihydrochloride	316427	1/10,000		1
Endosulfan	115297	10/10,000	P050	1
alpha-Endosulfan	959988			1
beta-Endosulfan	33213659			1
Endosulfant sulfate	1031078			1
Endothall	145733		P088	1000
Endothion	2778043	500/10,000		1
Endrin	72208	500/1000	P051	1
Endrin aldehyde	742934		:	1
Endrin & metabolites	72208		P051	1
Epichlorohydrin	106898	1000	U041	1000
Epinephrine	51434		P042	1000
EPN	2104645	100/10,000		1
Ergocalciferol	50146	1000/10,000		1
Ergotamine tartrate	379793	500/10,000		1
Ethanal	75070		U001	1000
Ethanamine, N-ethyl-N-nitroso-	55185		U174	1
1,2-Ethanediamine, N,N-dimethyl- N'- 2-pyridinyl-N'-(2-thienylmethyl)-	91805		U155	5000
Ethane, 1,2-dibromo-	106934		U067	1

Table 4-1	(continued)
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Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Ethane, 1,1-dichloro-	75343		U076	1000
Ethane, 1,2-dichloro-	107062		U077	100
Ethanedinitrile	460195		P031	100
Ethane, hexachloro-	67721		U131	100
Ethane, 1,1'-[methylenebis(oxy)] bis(2-chloro-	111911		U024	1000
Ethane, 1,1'-oxybis-	60297		U117	100
Ethane, 1,1'-oxybis(2-chloro-	111444		U025	10
Ethane, pentachloro-	76017		U184	10
Ethanesulfonyl chloride, 2-chloro	1622328	500		1
Ethane, 1,1,1,2-tetrachloro-	630206		U208	100
Ethane, 1,1,2,2-tetrachloro-	79345		U209	100
Ethanethioamide	62555		U218	10
Ethane, 1,1,1-trichloro-	71556		U226	1000
Ethane, 1,1,2-trichloro-	79005		U227	100
Ethanimidothioic acid, N-[[(methylamino) carbonyl]oxy]-, methyl ester	16752775		P066	100
Ethanol, 1,2-Dichloro-, acetate	10140871	1000		1
Ethanol, 2-ethoxy-	110805		U359	1000
Ethanol, 2,2'-(nitrosoimino)bis-	1116547		U173	1
Ethanone, 1-phenyl-	98862		U004	5000
Ethene, chloro-	75014		U043	1
Ethene, 2-chloroethoxy-	110758		U042	1000
Ethene, 1,1-dichloro-	75354		U078	100
Ethene, 1,2-dichloro- (E)	156605		U079	1000
Ethene, tetrachloro-	127184		U210	100
Ethene, trichloro-	79016		U228	100
Ethion	563122	1000		10
Ethoprophos	13194484	1000		1
Ethyl acetate (I)	141786		U112	5000
Ethyl acrylate (I)	140885		U113	1000
Ethylbenzene	100414			1000
Ethylbis(2-Chloroethyl)amine	538078	500		1
Ethyl carbamate (urethane)	51796		U238	100
Ethyl cyanide	107120		P101	10
Ethylenebisdithiocarbamic acid, salts & esters	111546		U114	5000
Ethylenediamine	107153			5000

Table 4-1	(continued)
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Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Ethylenediamine-tetraacetic acid (EDTA)	60004			5000
Ethylene dibromide	106934		U067	1
Ethylene dichloride	107062		U077	100
Ethylene fluorohydrin	371620	10		1
Ethylene glycol monoethyl ether	110805		U359	1000
Ethylene oxide (I,T)	75218	1000	U115	10
Ethylenediamine	107153	10,000		5000
Ethylenethiourea	96457		U116	10
Ethylenimine	151564	500	P054	1
Ethyl ether (I)	60297		U117	100
Ethylthiocyanate	542905	10,000		1
Ethylidene dichloride	75343		U076	1000
Ethyl methacrylate	97632		U118	1000
Ethyl methanesulfonate	62500		U119	1
Famphur	52857		P097	1000
Fenamiphos	22224926	10/10,000		1
Fenitrothion	122145	500		1
Fensulfothion	115902	500		1
Ferric ammonium citrate	1185575			1000
Ferric ammonium oxalate	2944674			1000
	55488874			100
Ferric chloride	7705080			100
Ferric fluoride	7783508			1000
Ferric nitrate	10421484			1000
Ferric sulfate	10028225			1000
Ferrous ammonium sulfate	10045893			1000
Ferrous chloride	7758943			100
Ferrous sulfate	7720787 7782630			1000
Fluentil	4301502	100/10,000		1
Fluoranthene	206440	· · · · · ·	U120	100
Fluorene	86737			5000
Fluorine	7782414	500	P056	10
Fluoroacentamide	640197	100/10,000	P057	100
Fluoracetic acid	144490	10/10,000		1
Fluoroacetic acid, sodium salt	62786		P058	10
Fluoroacetyl chloride	359068	10		
Fluorouracil	51218	500/10,000		1
Fonofos	944229	500		1

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Formaldehyde	50000	500	U122	100
Formaldehyde cyanohydrin	107164	1000		1
Formetanate hydrochloride	23422539	500/10,000		1
Formothion	2540821	100		1
Formparanate	17702577	100/10,000		1
Formic acid (C,T)	64186		U123	5000
Fosthietan	21548323	500		1
Fuberidazole	3878191	100/10,000		1
Fulminic acid, mercury(2) salt (R,T)	628864		P065	10
Fumaric acid	110178			5000
Furan (I)	110009	500	U124	100, 100
Furan, tetrahydro- (I)	109999		U213	1000
2-Furancarboxaldehyde (I)	98011		U125	5000
2,5-Furandione	108316		U147	5000
Furfural (I)	98011		U125	5000
Furfuran (I)	110009		U124	100
Gallium trichloride	13450903	500/10,000		1
Glucopyranose, 2-deoxy-2- (3-methyl-3-nitrosoureido)-	18883664		U206	1
D-Glucose, 2-deoxy-2- [[(methylnitrosoamino)- carbonyl]amino]-	18883664		U206	1
Glycidylaldehyde	765344		U126	10
Guanidine, N-methyl-N'-nitro- N-nitroso-	70257		U163	10
Guthion	86500			1
Heptachlor	76448		P059	1
Heptachlor epoxide	1024573			1
Hexachlorobenzene	118741		U127	10
Hexachlorobutadiene	87683		U128	1
Hexachlorocyclohexane (gamma isomer)	58899		U129	1
Hexachlorocyclopentadiene	77474	100	U130	10
Hexachloroethane	67721		U131	100
Hexachlorophene	70304		U132	100
Hexachloropropene	1888717		U243	1000
Hexaethyl tetraphosphate	757584		P062	100
Hexamethylenediamine, N,N'- Dibutyl	4835114	500		1
Hydrazine (R,T)	302012	1000	U133	1
Hydrazine, 1,2-diethyl-	1615801		U086	10

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Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Hydrazine, 1,1-dimethyl-	57147	Quantity (pounds)	U098	10
Hydrazine, 1,2-dimethyl-	540738		U099	
Hydrazine, 1,2-diphenyl-	122667		U109	10
Hydrazine, methyl-	60344		P068	10
Hydrazinecarbothioamide	79196	· · · · · · · · · · · · · · · · · · ·	P116	100
Hydrochloric acid	7647010			5000
Hydrocyanic acid	74908	100	P063	10
Hydrofluoric acid	7664393		U134	100
Hydrogen chloride (gas only)	7647010	500		5000
Hydrogen cyanide	74908		P063	10
Hydrogen fluoride	7664393	100	U134	100
Hydrogen peroxide (Conc > 52%)	7722841	1000		1
Hydrogen selenide	7783075	1000		1
Hydrogen sulfide	7783064	500	U135	100
Hydroperoxide, 1-methyl-1- phenylethyl-	80159	500	U096	10
Hydroquinone	123319	500/10,000		1
2-Imidazoliainethione	96457		U116	10
Indeno(1,2,3-cd)pyrene	193395		U137	100
Iron, Pentacarbonyl-	13463406	100		1
Isobenzan	297789	100/10,000		1
1,3-Isobenzofurandione	85449		U190	5000
Isobutyronitrile	78820	1000		1
Isobutyl alcohol (I,T)	78831		U140	5000
Isocyanic acid, 3,4-Dichlorophenyl ester	102363	500/10,000		1
Isodrin	465736	100/10,000	P060	1
Isofluorphate	55914	100		100
Isophorone	78591			5000
Isophorone Diisocyanbate	4098719	100		1
Isoprene	78795			100
Isopropanolamine dodecylbenzene sulfonate	42504461			1000
Isopropyl chloroformate	108236	1000		1
Isopropyl formate	625558	500		1
Isoproplymethylpryrazolyl dimethylcarbamate	119380	500		1
Isosafrole	120581		U141	100
3(2H)-Isoxazolone, 5-(aminomethyl)-	2763964		P007	1000
Kepone	143500		U142	1

Table 4-1	(continued)
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	1	Threshold Planning ²	USEPA Waste	RQ
Hazardous Waste/Substances	CAS No.1	Quantity (pounds)	Number	(pounds) ³
Lactonitrile	78977	1000		1
Lasiocarpine	303344		U143	10
Lead acetate	301042		U144	#
Lead arsenate	7784409			1
	7645252 10102484			
	1335326		U146	100
Lead, bis(acetato-O)tetrahydroxytri	7758954		0140	100
Lead chloride	13814965			100
Lead fluoborate			<u></u>	100
Lead iodide	10101630			100
Lead nitrate	10099748		U145	#
Lead phosphate	7446277		0143	# 5000#
Lead stearate	7428480 1072351			5000#
	52652592			
	56189094			
Lead subacetate	1335326		U146	100
Lead sulfate	15739807			100
	7446142			
Lead sulfide	1314870			5000#
Lead thiocyanate	592870			100
Leptophos	21609905	500/10,000	· · · · · · · · · · · · · · · · · · ·	1
Lewisite	541253	10		1
Lindane	58899	1000/10,000	U129	1
Lithium chromate	14307358			10
Lithium hydride	7580678	100		1
Malathion	121755			100
Maleic acid	110167			5000
Maleic anhydride	108316		U147	5000
Maleic hydrazide	123331		U148	5000
Malononitrile	109773	500/10,000	U149	1000
Manganese, tricarbonyl methylcyclopentadienyl	12108133	100		• 1
Mechlorethamine	51752	10		1
Melphalan	148823		U150	1
Mephosfolan	950107	500		1
Mercaptodimethur	2032657			10
Mercuric acetate	1600277	500/10,000		1
Mercuric chloride	747947	500/10,000		1
Mercuric cyanide	592041			1
Mercuric nitrate	10045940			10

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Mercuric oxide	21908532	500/10,000		1
Mercuric sulfate	7783359			10
Mercuric thiocyanate	592858			10
Mercurous nitrate	10415755			10
	7782867			
Mercury	7439976		U151	1
Mercury (acetate-O)phenyl-	62384		P092	100
Mercury fulminate	628864		P065	10
Methacrolein diacetate	10476956	1000		1
Methacrylic anhydride	760930	500		. 1
Methacrylonitrile (I,T)	126987	500	U152	1000
Methacryloyl chloride	920467	100		1
Methacryloyloxyethyl isocyanate	30674807	100		1
Methamidophos	10265926	100/10,000		1
Methanamine, N-methyl-	124403		U092	1000
Methanamine, N-methyl-N-nitroso-	62759		P082	10
Methane, bromo-	74839		U029	1000
Methane, chloro- (I,T)	74873		U045	100
Methane, chloromethoxy-	107302		U046	10
Methane, dibromo-	74953		U068	1000
Methane, dichloro-	75092		U080	1000
Methane, dichlorodifluoro-	75718		U075	5000
Methane, iodo-	74884		U138	100
Methane, isocyanato-	624839		P064	##
Methane, oxybis(chloro-	542881		P016	10
Methanesulfenyl chloride, trichloro-	594423		P118	100
Methanesulfonyl fluoride	558258	1000		1
Methanesulfonic acid, ethyl ester	62500		U119	1
Methane, tetrachloro-	56235		U211	10
Methane, tetranitro- (R)	509148		P112	10
Methane, tribromo-	75252		U225	. 100
Methane, trichloro-	67663		U044	10
Methane, trichlorofluoro-	75694		U121	5000
Methanethiol (I,T)	74931		U153	100
6,9-Methano-2,4,3-benzodioxathi-	115297		P050	1
epin, 6,7,8,9,10,10-hexa-chloro-1,5,5a, 6,9,9a-hexahydro-, 3-oxide				
1,3,4-Metheno-2H-cyclobutal[cd] pentalen-2-one,1,1a,3,3a,4, 5,5a,5b,6-decachlorocatahydro-	143500		U142	1

Table 4-1	(continu	ed)
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 Table 4-1 (continued)

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
4,7-Methano-1H-indene,	76448		P059	1
1,4,5,6,7,8,8				
heptachloro-3a,				
4,7,7a-tetrahydro-				
4,7-Methano-1H-indene,	57749		U036	1
1,2,4,5,6,7,8,8				
octachloro-2,3, 3a,4,7,7a-hexahydro-				
Methanol (I)	67561		U154	5000
• /	91805		U155	5000
Methapyrilene Methidathion	91803	500/10,000	0155	1
	2032657	500/10,000		10
Methiocarb Methomyl	16752775	500/10,000	P066	100
Methomyl Methoxychlor	72435	500/10,000	Y247	100
Methoxyethylmercuric acetate	151382	500/10,000	12-11	1
Methyl alcohol (I)	67561	500/10,000	U154	5000
•	74839	1000	U029	1000
Methyl bromide	504609	1000	U186	1000
1-Methylbutadiene (I)	74873		U180	100
Methyl chloride (I,T) Methyl 2-chloroacrylate	80637	500	0045	100
Methyl chlorocarbonate (I,T)	79221	500	U156	1000
Methyl chloroform	71556		U226	1000
Methyl chloroformate	71330	500	U156	1000
Methyl disulfide	624920	100	0150	1000
3-Methylcholanthrene	56495	100	U157	1(
4,4'-Methylenebis(2-chloroaniline)	101144		U158	10
Methylene bromide	74953		U068	1000
			U080	1000
Methylene chloride Methyl ethyl ketone (MEK) (I,T)	75092		U159	5000
	1338234		U159 U160	10
Methyl ethyl ketone peroxide (R,T)	60344	500	P068	10
Methyl hydrazine Methyl iodide	74884	500	U138	100
Methyl isobutyl ketone	108101		U138 U161	5000
	624839	500	P064	
Methyl isocyanate	556616	500	<u> </u>	#1
Methyl isothiocyante	75865	500	P069	1
2-Methyllactonitrile	75865	500	U153	100
Methyl mercaptan	80626	500	U133 U162	100
Methyl methacrylate (I,T)	298000		P071	100
Methyl parathion	3735237	500	FUI	
Methyl phenkapton Methyl phosphoric dichloride	676971	100		

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
4-Methyl-2-pentanone (I)	108101		U161	5000
Methyl thiocyanate	556649	10,000		1
Methylthiouracil	56042		U164	10
Methyl vinyl ketone	78944	10		1
Methylmercuric dicyanamide	502396	500/10,000		1
Methyltrichlorosilane	75796	500		1
Metolcarb	1129415	100/10,000		1
Mevinphos	7786347	500		10
Mexacarbate	315184	500/10,000		1000
Mitomycin C	50077	500/10,000	U010	10
MNNG	70257		U163	10
Monocrotophos	6923224	10/10,000		1
Monoethylamine	75047			100
Monomethylamine	73895			100
Muscimol	2763964	10,000	P007	1000
Mustard gas	505602	500		1
Naled	300765			10
5,12-Naphthaacenedione, 8-acetyl-10-[3 amino-2,3,6-tri-deoxy- alpha-L-lyxo-hexopyranosyl)- 7,8,9,10-tetrahydro- 6,8,11-trihydroxy-1-methoxy-, (8S-cis)-	20830813		U059	10
1-Naphthalenamine	134327		U167	100
2-Naphthalenamine	91598		U169	10
Naphthalenamine, N,N'-bis(2- chloroethyl)-	494031		U026	100
Naphthalene, 2-chloro-	91587		U047	5000
1,4-Naphthalenedione	130154		U166	5000
2,7-Naphthalenedisulfonic acid, 3,3' [(3,3'-dimethyl-(1,1'-biphenyl)- 4,4'-dryl)-bis(azo)]bis(5-amino- 4-hydroxy)-tetrasodium salt	72571		U236	
Naphthenic acid	1338245			100
1,4-Naphthoquinone	130154		U166	5000
alpha-Naphthylamine	134327		U167	100
beta-Naphthylamine	91598		U168	10
alpha-Naphthylthiourea	86884		P072	100
Nickel++	7440020			100
Nickel ammonium sulfate	15699180			100

Waste (Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Hazardous Waste/Substances			P073	(pounds) 10
Nickel carbonyl	13463393	1	P073 P073	10
Nickel carbonyl Ni(CO)4, (T-4)-	13463393	·	P0/3	
Nickel chloride	7718549			100
XT 1 1 1	37211055		P074	10
Nickel cyanide	12054487		10/4	10
Nickel hydroxide				10
Nickel nitrate	14216752			100
Nickel sulfate	7786814	100	P075	100
Nicotine & salts	54115	100	P075	
Nicotine sulfate	65305	100/10,000		1 1000
Nitric acid	7697372	1000	11017	
Nitric acid, thallium(1+) salt	10102451	100	U217	100
Nitric oxide	10102439	100	P076	10
p-Nitroaniline	100016		P077	5000
Nitrobenzene (I,T)	98953	10,000	U169	1000
Nitrocyclohexane	1122607	500		1
Nitrogen dioxide	10102440	100	P078	10
	10544726		DORIC	10
Nitrogen oxide	10102439		P076	10
Nitroglycenne	55630		P981	10
Nitrophenol (mixed)	25154556			100
m-Nitrophenol	554847 88755			100 100
o-Nitrophenol (2) p-Nitrophenol (4)	100027		U170	100
2-Nitropropane (I,T)	96469		U171	100
N-Nitrosodi-n-butylamine	924163		U172	10
N-Nitrosodiethanolamine	1116547		U173	10
N-Nitrosodiethylamine	55185		U174	1
N-Nitrosodimethylamine	62759	1000	P082	10
N-Nitrosodiphenylamine	86306	1000	1002	100
N-Nitroso-N-ethylurea	759739		U176	100
N-Nitroso-N-methylurea	684935		U177	· 1
N-Nitroso-N-methylurethane	615532		U177	1
•	4549400		P084	10
N-Nitrosomethylvinylamine	199754		U179	10
N-Nitrosopipendine	930552		U179 U180	10
N-Nitrosopyrrolidine Nitrotoluene	1321126			1000
m-Nitrotoluene	99081			1000
o-Nitrotoluene	88722			
p-Nitrotoluene	99990			
5-Nitro-o-toluidine	99558		U181	100

Table 4-1	(continu	ed)
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Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
·			Number	(pounds)
Norbormide	991424	100/10,000	DOOC	1
Octamethylpyrophosphoramide	152169	10/10.000	P085	100
Organorhodium complex (PMN-82-147)	0	10/10,000		1
Osmium tetroxide	20816120		P087	1000
Ouabain	630604	100/10,000		1
7-Oxabicyclo[2,2,1]heptane-s,3- dicarboxylic acide	145733		P088	1000
Oxamyl	23135220	100/10,000		1
1,2-Oxathiolane, 2,2-dioxide	1120714		U193	10
2H-1,3,2-Oxazaphosphorin-2-amine, N,N bis(2-chloroethyl)tetrahydro-, 2-oxide	50180		U058	10
Oxetane, 3,3-bis(chloromethyl)-	78717	500		
Oxirane (I,T)	75218		U115	10
Oxiranecarboxyaldehyde	765344		U126	10
Oxirane, (chloromethyl)-	106898		U041	100
Oxydisulfoton	2497076	500		1
Ozone	10028156	100		1
Paraformaldehyde	30525894		-	1000
Paraldehyde	123637		U182	1000
Paraquat	1910425	10/10,000		1
Paraquat methosulfate	2074502	10/10,000		1
Parathion	56382	100	P089	10
Parathion-methyl	298000	100/10,000		100
Paris green	12002038	500/10,000		100
Pentaborane	19624227	500		1
Pentachlorobenzene	608935		U183	10
Pentachlorethane	76017		U184	10
Pentachlorophenol	87865		U242	10
Pentachloronitrobenzene (PCNB)	82688		U185	100
Pentadecylamine	2570265	100/10,000		1
Peracetic acid	79210	500		1
1,3-Pentadiene (I)	504609		U186	100
Perachloroethylene	127184		U210	100
Perchloromethylmercaptan	594423	500		100
Phenacetin	62442		U187	100
Phenanthrene	85018			5000
Phenol	108952	500/10,000	U188	1000
Phenol, 2-chloro-	95578		U048	100

Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Phenol, 4-chloro-3-methyl-	59507		U039	5000
Phenol, 2-cyclohexyl-4,6-dinitro-	131895		P034	100
Phenol, 2,4-dichloro	120832		U081	100
Phenol, 2,6-dichloro-	87650		U082	100
Phenol, 4,4'-(1,2-diethyl-1,2- ethenediyl)bis-, (E)	56531		U089	1
Phenol, 2,4-dimethyl-	105679		U101	100
Phenol, 2,4-dinitro-	51285		P048	10
Phenol, methyl- m-Cresol o-Cresol p-Cresol	1319773 108394 95487 106445		U052	1000
Phenol, 2-methyl-4,6-dinitro-	534521		P047	10
Phenol, 2,2'-methylenebis[3,4,6- trichloro-	70304		U132	100
Phenol, 2,2'-thiobis(4,6-dichloro-	97187	100/10,000		1
Phenol, 2,2'-thiobis(4-chloro-6- methyl)-	4418660	10/10,000		1
Phenol, 2-(1-methylpropyl)-4,6- dinitro	88857		P020	1000
Phenol, 3-(1-methylethyl)-, methylcarbamate	64006	500/10,000		1
Phenol, 4-nitro-	100027		U170	100
Phenol, pentachloro-	87865		U242	10
Phenol, 2,3,4,6-tetrachloro-	58902		U212	10
Phenol, 2,4,5-trichloro-	95954		U230	10
Phenol, 2,4,6-trichloro-	88062		U231	10
Phenol, 2,4,6-trinitro-, ammonium salt	131748		P009	10
Phenoxarsine, 10,10'-oxydi-	58366	500/10,000		1
L-Phenylalanine, 4-[bis(2-chloroethyl) aminol]	148823		U150	
Phenyl dichloroarsine	696286	500		1
1,10-(1,2-Phenylene)pyrene	193395		U137	100
Phenylhydrazine hydrochloride	59881	1000/10,000		1
Phenylmercury acetate	62384	500/10,000	P092	100
Phenylsilatrane	2097190	100/10,000		1
Phenylthiourea	103855	100/1000	P093	100
Phorate	298022	10	P094	1010
Phosacetim	4104147	100/10,000		1
Phosfolan	947024	100/10,000		1

Table 4-1	(continue	ed)
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Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Phosgene	75445	10	P095	10
Phosmet	732116	10/10,000		1
Phosphamidon	13171216	100		1
Phosphine	7803512	500		100
Phosphonothioic acid, methyl-, o-ethyl o-(4-(methylthio)phenyl) ester	2703131	500		1
Phosphonothioic acid, methyl-, s-(2-(bis(1- methylethyl)amino) ethyl o-ethyl ester	50782699	100		1
Phosphonothioic acid, methyl-, 0-(4-nitrophenyl) o-phenyl ester	2665307	500		1
Phosphoric acid	7664382			5000
Phosphoric acid, diethyl 4-nitrophenyl ester	311455		P041	100
Phosphoric acid, dimethyl 4-(methylthio) phenyl ester	3254635	500		1
Phosphoric acid, lead(2+) salt (2:3)	7446277	500	U145	#
Phosphorodithioic acid, O,O-diethyl S-[2(ethylthio)ethyl]ester	298044		P039	1
Phosphorodithioic acid, O,O-diethyl S(ethylthio), methyl ester	298022		P094	10
Phosphorodithioic acid, O,O-diethyl S-methyl ester	3288582		U087	5000
Phosphorodithoic acid, O,O-dimethyl S-[2(methyl-amino)-2-oxoethyl] ester	60515		P044	10
Phosphorofluondic acid, bis(1-methylethyl)ester	55914		P043	100
Phsphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester	56382		P089	10
Phosphorothioic acid, O,[4[(dime- thylamino)sulfonyl]phenyl]O,O- dimethyl ester	52857		P097	1000
Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	298000		P071	100
Phosphorus	7723140	100		1
Phosphorus oxycloride	10025873	500		1000
Phosphorous pentachloride	10026138	500		1
Phosphorus pentasulfide (R)	1314803		U189	100
Phosphorus pentoxide	1314563	10		1
Phosphorus trichloride	7719122	1000		1000

Table 4-1	(continued)
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Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
		Quantity (pounds)	U190	(pounds) 5000
Phthalic anhydride	85449	100/10 000	0190	
Physostigmine	57476	100/10,000		1
Phosostigmine, salicylate (1:1)	57647	100/10,000	11101	5000
2-Picoline	109068	500/10 000	U191	5000
Picotoxin	124878	500/10,000		1
Piperidine	110894	1000		1
Piperidine, 1-nitroso-	100754		U179	10
Piprotal	5281130	100/10,000		1
Primifos-ethyl	23505411	1000		1
Plumbane, tetraethyl-	78002		P110	10
Polychlorinated biphenyls (PCBs) (See Aroclor)	1336363			1
Potasium arsenate	7784410			1
Potassium arsenite	10124502	500/10,000		1000
Potassium bichromate	7778509			10
Potassium chromate	7789006			10
Potassium cyanide	151508	100	P098	10
Potassium hydroxide	1310583	an a		1000
Potassium permanganate	7722647			100
Potassium silver cyanide	506516	500	P099	1
Promecarb	2631370	500/10,000		1
Pronamide	23950585		U192	5000
Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl] oxime	116063		P070	1
1-Propanamine (I,T)	107108		U194	5000
1-Propanamine, N-propyl-	142847		U110	5000
1-Propanamine, N-nitroso-N-proply-	621647		U111	10
Propane, 1,2-dibromo-2-chloro	96128		U066	1
Propane, 2-intro- (I,T)	79469		U171	10
1,3-Propane sultone	1120714		U193	10
Propane 1,2-dichloro-	78875		U083	1000
Propanedinitrile	109773		U149	100
Propanenitrile	107120		P101	10
Propanenitrile, 2-chloro-	542767	· · · · · · · · · · · · · · · · · · ·	P027	1000
Propanenitrile, 2-hydroxy-2-methyl-	75865		P069	10
Propane, 2,2'-oxybis[2-chloro-	108601		U027	1000
1,2,3-Propanetnol, trinitrate- (R)	55630		P081	10
1-Propanol, 2,3-dibromo-, phosphate (3:1)	126727		U235	10

Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
1-Propanol, 2-methyl- (I,T)	78831		U140	5000
2-Propanone (I)	67641		U002	5000
2-Propanone, 1-bromo-	598312		P017	1000
Propargite	2312358			10
Propargyl alcohol	107197		P102	1000
Propargyl bromide	106967	10		1
2-Propenal	107028		P003	1
2-Propenamide	79061		U007	5000
1-Propene, 1,1,2,3,3,3-hexachloro-	1888717		U243	1000
1-Propene, 1,3-dichloro-	542756		U084	100
2-Propenenitrile	107131		U009	100
2-Propenenitrile, 2-methyl- (I,T)	126987		U152	1000
2-Propenoic acid (I)	79107		U008	5000
2-Prepenoic acid, ethyl ester (I)	140885		U113	1000
2-Prepenoic acid, 2-methyl-,	97632		U118	1000
ethyl ester				
2-Prepenoic acid, 2-methyl-, methyl ester (I,T)	80626		U162	1000
2-Propen-1-01	107186		P005	100
Propiolactone, beta-	57578	500		1
Propionic acid	79094			5000
Propionic acid, 2-(2,4,5-trichlorophenoxyl)-	93721		U233	100
Propionic anhydride	123626			5000
Propiolactone, beta	57578	500		1
Propionitrile	107120	500		10
Propionitrile, 3-chloro-	542767	1000		1000
Propiophenone, 4-amino	70699	100/10,000		1
n-Propylamine	107108		U194	5000
Propyl chloroformate	109615	500		1
Propylene dichloride	78875		U083	1000
Propylene oxide	75569	10,000		100
1,2-Propylenimine	75558	10,000	P067	1
2-Propyn-1-o1	107197		P102	1000
Prothoate	2275185	100/10,000		1
Pyrene	129000	1000/10,000		5000
Pyrethrins	121299 121211 8003347			1
3,6-Pyridazinedione, 1,3-dihydro-	123331		U148	5000

Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
4-Pyridinamine	504245		P008	1000
Pyridine	110861		U196	1000
Pyridine, 2-methyl-	109068		U191	5000
Pyridine, 2-methyl-5-vinyl-	140761	500		1
Pyridine, 4-amino-	504245	500/10,000		1000
Pyridine, 4-nitro-, 1-oxide	1124330	500/10,000		1
Pyridine, 3-(1-methyl-2- pyrrolidinyl)-, (S)	54115		P075	100
2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	66751		U237	10
4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	56042		U164	10
Pyriminil	53558251	100/10,000		1
Pyrrolidine, 1-nitroso-	930552		U180	1
Quinoline 91225	91225			5000
Reserpine	50555		U200	5000
Resorcinol	106463		U201	5000
Sacchann and salts	81072		U202	100
Salcomine	14167181	500/10,000		1
Sarin	107448	10		1
Satrole	94597		U203	100
Selenious acid	7783008	1000/10,000	U204	10
Selenious acid, dithallium (1+) salt	12039520		P114	1000
Selenium ++	7782492			100
Selenium dioxide	7446084		U204	10
Selenium oxychloride	7791233	500		1
Selenium sulfide (R,T)	7488564		U205	10
Selenourea	630104		P103	1000
Semicarbazide hydrochloride	56417	1000/10,000		1
L-Senne, diazoacetate (ester)	115026		U015	1
Silane, (4-aminobutyl)diethoxyme- thyl-	3037727	1000		. 1
Silver++	7440224			1000
Silver cyanide	506649		P104	1
Silver nitrate	7761888			1
Silvex (2,4,5-TP)	93721		U233	100
Sodium	7440235			10
Sodium arsenate	7631892	1000/10,000		1
Sodium arsenite	7784465	500/10,000		1
Sodium azide	26628228	500	P105	1000

Wasse Wasse Carbotomood	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Hazardous Waste/Substances		Quantity (pounds)	Number	
Sodium bichromate	10588019			10
Sodium bifluoride	1333831			100
Sodium bisulfite	7631905	100,000		5000
Sodium cacodylate	124652	100/10,000		. 1
Sodium chromate	7775113			10
Sodium cyanide	143339		P106	10
Sodium dodecylbenzenesulfonate	25155300			1000
Sodium fluoride	7681494			1000
Sodium fluoroacetate	62748	10/10,000		10
Sodium hydrosulfide	16721805			5000
Sodium hydroxide	1310732	· · · · · · · · · · · · · · · ·		1000
Sodium hypochlorite	7681529			1000
	10022705			
Sodium methylate	124414			1000
Sodium nitrite	763200			100
Sodium prentachlorophenate	131522	100/10,000		1
Sodium phosphate, dibasic	7558794		*****	5000
	10039324			
	10140655			
Sodium phosphate, tribasic	7601549			5000
	7758294			
	7785844 10101890			
	10101890			
	10361894			
Sodium selenate	13410010	100/10,000		1
Sodium selenite	10102188	100/1000		100
	7782823			
Sodium tellurite	10102202	500/10,000		1
Stannane, acetoxytriphenyl	900958	500/10,000		1
Streptozotocin	18883664		U206	1
Strontium chromate	7789062			. 10
Strychnidin-1-one, 2,3-dimethoxy-	357573		P018	100
Strychnine, & salts	572494	100/10,000	P018	10
Strychnine, sulfate	60413	100/10,000		1
Styrene	100425			1000
Sulfotep	3689245	500		100
Sulfoxide, 3-chlorophpropyl octyl	3569571	500		1
Sulfur monochloride	12771083	·····	· · · · · · · · · · · · · · · · · · ·	1000
Sulfur dioxide	7446095	500		1
Sulfur phosphide (R)	1314803		U189	100

Table 4-1 (continued)

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Sulfur tetrafluoride	7783600	100		1
Sulfur trioxide	7446119	100		1
Sulfuric acid	7664939	1000		1000
	8014957			
Sulfuric acid, dithallium (1 ⁺) salt	7446186		P115	100
	10031591			
Sulfuric acid, dimethyl ester	77781		U103	100
Tabun	77816	10		1
2,4,5-T acid	93765		U232	1000
2,4,5-T amines	2008460			5000
	1319728			
	3813147			
	6369966			
	6369977	500/10 000		
Tellurium	13494809	500/10,000		1
Tellurium hexafluoride	7783804	100		1000
2,4,5-T esters	93798			1000
	1928478 25168154			
	61792072			
2,4,5-T salts	13560991			1000
2,4,5-T	93765		U232	1000
TDE	72548		U060	1000
TEPP	10749	100		1(
Terbufos	13071799	100		
1,2,4,5-Tetrachlorobenzene	95943	100	U207	5000
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746016		0207]
1,1,1,2-Tetrachlorethane	630206		U208	100
1,1,2,2-Tetrachloroethane	79345		U209	100
Tetrachloroethene	127184	- U.LNMW.M.M.M.	U210	100
Tetrachloroethylene	127184		U210	100
2,3,4,6-Tetrachlorophenol	58902		U212	10
Tetraethyl lead	78002	100	P110	10
Tetraethyl pyrophosphate	107493	100	P111	10
Tetraethyldithiopyrophosphate	3589245		P109	100
Tetraethyltin	597648	100		
Tetramethyllead	75741	100		
Tetrahydrofuran (I)	109999		U213	1000
Tetranitromethane (R)	509148	500	P112	1000

 Table 4-1 (continued)

Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Tetraphosphoric acid, hexaethyl ester	757584		P062	100
Thallic oxide	1314325		P113	100
Thallium ++	7440280		1115	100
	563688		U214	1000
Thallium acetate				100
Thallium carbonate	6533739		U215	100
Thallium chloride	7791120		U216	
Thallium nitrate	10102451		U217	100
Thallium oxide	1314325		P113	100
Thallium selenite	12039520		P114	1000
Thallium sulfate	7446186 10031591	100/10,000	P115	100
Thallous carbonate	6533739	100/10,000		100
Thallous chloride	7791120	100/10,000		100
Thallous malonate	2757188	100/10,000]
Thallous sulfate	7446186	100/10,000		100
Thioacetamide	62555		U218	1(
Thiocarbazide	2231574	1000/10,000]
Thiodiphosphoric acid, tetraethyl ester	3689245		P109	100
Thiofanox	39196184	100/10,000	P045	100
Thioimidodicarbonic diamide [(H2N)C(S)] 2NH	541537		P049	100
Thiomethanol (I,T)	74931		U153	100
Thionazin	297972	500		100
Thioperoxydicarbonic diamide [(H2N)C(S)] 2S2, tetra-methyl-	137268		U244	10
Thiophenol	108985	500	P104	100
Thiosemicarbazide	79196	100/10,000	P116	100
Thiourea	62566		U219	10
Thiourea, (2-chlorophenyl)-	5344821	100/10,000	P026	100
Thiourea, (2-methylphenyl)-	614788	500/10,000		. 1
Thiourea, 1-naphthalenyl-	86884		P072	100
Thiourea, phenyl-	103855		P093	100
Thiram	137268		U244	10
Titanium tetrachloride	7550450	100		1
Toluene	108883		U220	1000
Toluenediamine	95807 496720 823405 25376458		U221	10

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Toluene diisocyanate (R,T)	584849	500	U223	100
10140110 411502 (21,2)	91087	100		100
	26471625			
o-Toluidine	95534		U238	100
p-Toluidine	106490		U353	100
o-Toluidine hydrochloride	636215		U222	100
Toxaphene	8001352	nor	P123	1
2,4,5-TP acid	93721		U233	100
2,4,5-TP esters	32534955			100
1H-1,2,4-Triazol-3-amine	61825		U011	10
Trans-1,4-dichlorobutene	110576	500	<u> </u>	1
Triamiphos	1031476	500/10,000		1
Triazofos	24017478	500		1
Trichloroacety chloride *	76028	500		1
Trichlorfon	52686			100
1,2,4-Trichlorobenzene	120821			100
1,1,1-Trichloroethane	71556		U226	1000
1,1,2-Trichloroethane	79005		U227	100
Trichloroethene	79016		U228	100
Trichloroethylene	79016		U228	100
Trichloroethylsilane	115219	500		1
Trichloronate	327980	500		1
Trichloromethanesulfenyl chloride	594423		P118	100
Trichloromonofluoromethane	75694	······································	U121	5000
2,3,4-richlorophenol	15950660			
2,3,5-Trichlorophenol	933788			
2,3,6-Trichlorophenol 2,4,5-Trichlorophenol	933755 95954		U230	10
2,4,5-Trichlorophenol	88062		U230	10
3,4,5-Trichlorophenol	609198			
2,4,5-Trichlorophenol	95954		U230	10
2,4,6-Trichlorophenol	88062		I231	10
Trichlorphenylsilane	98135	500		1
Trichloro(chloromethyl)silane	1558254	100		1
Trichloro(dichlorophenyl)silane	27137855	500		1
Triethanolamine	27323417			1000
dodecylbenzene-sulfonate				
Triethoxysilane	998301	500		1
Triethylamine	121448			5000
Trimethylamine	75503			100
Trimethylchlorosilane	75774	1000		1

Table 4-1	(continued)
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Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Trimethylolpropane phosphite	824113	100/10,000		1
Trimethyltin chloride	1066451	500/10,000		1
1,3,5-Trinitrobenzene (R,T)	99354		U234	10
1,3,5-Trioxane, 2,4,6-trimethyl-	123637		U182	1000
Triphenyltin chloride	639587	500/10,000		1
Tris(2-chloroethyl)amine	555771	100		1
Tris(2,3-dibromopropyl) phosphate	126727		U235	10
Trypan blue	72571	·	U236	10
Unlisted Hazardous Wastes	NA		D002	100
Characteristic of Corrosivity			2002	100
Unlisted Hazardous Wastes	NA			
Characteristic:				
Arsenic (D004)	NA		D004	1
Barium (D005)	NA		D005	1000
Cadmium (D006)	NA		D006	10
Chromium (D007)	NA		D007	10
2,4-D (D016)	NA		D016	100
Endrin (D9012)	NA		D012	1
Lead (D008)	NA		D012 D008	•
Lindane (D013)	NA		D013	1
Mercury (D009)	NA		D019	1
Metoxychlor (D014)	NA		D014	1
Selenium (D010)	NA		D010	10
Silver (D011)	NA		D011	1
Toxaphene (D015)	NA		D015	1
2,4,5-TP (D017)	NA		D017	100
Vinyl chloride (D043)	NA		D043	100
Unlisted Hazardous Wastes	NA		D001	00
Characteristic of Ignitability	1111		Door	00
Unlisted Hazardous Wastes	NA		D003	00
Characteristic Reactivity			D003	00
Uracil mustard	66751		U237	10
Uranyl acetate	541093			100
Uranyl nitrate	10102064			100
Oranyi muate	36478769			100
Urea, N-ethyl-N-nitroso	759739		U176	1
Urea, N-methyl-N-nitroso	684935		U177	1
Valinomycin	2001958	1000/10,000		1
Vanadic acid, ammonium salt	7803556	1000/10,000	P119	1000
Vanadic oxide V ₂ O ₅	1314621		P120	1000
Vanadic pentoxide	1314621	100/10.000	P120	1000
Vanadium pentoxide	1314621	100/10,000		1000

Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Vanadyl sulfate	27774136			1000
Vinyl chloride	75014		U043	1
Vinyl acetate	108054	· · · · · · · · · · · · · · · · · · ·		5000
Vinyl acetate monomer	108054	1000		5000
Vinylamine, N-methyl-N-nitroso-	4549400		P084	10
Vinylidene chloride	75354		U078	100
Warfarin, & salts, when present at concentrations greater than 0.3%	81812	500/10,000	P001	100
Warfarin sodium	129066	100/10,000		1
Xylene (mixed) m-Benzene, dimethyl o-Benzene, dimethyl p-Benzene, dimethyl	1330207 108383 95476 106423		U239	1000
Xylenol	1300716			1000
Xylylene dichloride	28347139	100/10,000		1
Yohimban-16-carboxylic acid, 11,17 dimethosy-18-[(3,4,5-trimethoxy- benzoyl)oxy]-, methyl ester (3-beta, 16-beta,17-alpha, 18-beta,20-alpha)-	50555		U200	5000
Zinc	7440666			1000
Zinc acetate	557346			1000
Zinc ammonium chloride	52628258 14639975 14639986			1000
Zinc borate	1332076			1000
Zinc bromide	7699458			1000
Zinc carbonate	3486359			1000
Zinc chloride	7646857			1000
Zinc cyanide	557211		P121	10
Zinc, dichloro(4,4-dimethyl- 5(((((methylamino)carbonyl) oxy)imino)pentaenitrile)-,(t-4)-	58270089	100/1000		1
Zinc fluoride	7783495			1000
Zinc formate	557415			1000
Zinc hydrosulfite	7779864			1000
Zinc nitrate	7779886			1000
Zinc phenosulfonate	127822			5000
Zinc phosphide	1314847	500	P122	100

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
Zinc phosphide Zn ₃ P ₂ '	1314847		P122	100
when present at				
concentrations				
greater than 10%				
Zinc silicofluoride	16871719			5000
Zinc sulfate	7733020			1000
Zirconium nitrate	13746899			5000
Zirconium potassium fluoride	16923958			1000
Zirconium sulfate	14644612			5000
Zirconium tetrachloride	10026116			5000
F001		······································	F001	10
The following spent halogenated solve	nts used in degr	easing: all spent solver		
degreasing containing, before use, a tot halogenated solvents or those solvents ery of these spent solvents and spent so	listed in F002, lolvent mixtures.	F004, and F005; and sti	ill bottoms fro	om the recov-
a. Tetrachlorethylene	127184		U210	100
b. Trichloroethylene	79016		· U228	100
c. Methylene chloride	75092		U080	1000
d. 1,1,1-Trichloroethane	71556		U226	1000
e. Carbon tetrachloride	56235		U211	10
f. Chlorinated fluorocarbons	NA			5000
F002			F002	10
The following spent halogenated solve total of 10 percent or more (by volume) in F001, F004, or F005; and still botton mixtures.	of one or more ns from the reco	of the above halogenat	ed solvents o vents and spe	r those listed ent solvent
a. Tetrachloroethylene	127184		U210	100
b. Methylene chloride	75092		U080	1000
c. Trichloroethylene	79016		U228	100
d. 1,1,1-Trichloroethane	71556		U226	1000
e. Chlorobenzene	108907		U037	100
f. 1,1,2-Trichloro-1,2,2 trifluoroethane	76131			5000
g. o-Dischlorobenzene	0.5501		TTOTO	100
h. Trichlorofluoromethane	95501		U070	100
i. 1,1,2-Trichloroethane	75694		U121	5000
	79005		U227	100

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
F003			F003	100
The following spent nonhalogenated s	olvents and the	still bottoms from the r	ecovery of th	ese solvents:
a. Xylene	1330207	1000		
b. Acetone	67641	5000		
c. Ethyl acetate	141786	5000		
d. Ethylbenzene	100414	1000		
e. Ethyl ether	60297	100		
f. Methyl isobutyl ketone	108101	5000		
g. n-Butyl alcohol	71363	5000		
h. Cyclohexanone	108941	5000		
i. Methanol	67561	5000		
F004			F004	1000
The following spent nonhalogenated s	solvents and the	still bottoms from the r	ecovery of th	ese solvents:
a. Cresols/Cresylic acid	131773		U052	1000
b. Nitrobenzene	98953		U169	1000
F005			F005	100
The following spent nonhalogenated s	solvents and the	still bottoms from the r	ecovery of th	ese solvents:
a. Toluene	108883		U220	1000
b. Methyl ethyl ketone	78933		U159	5000
c. Carbon disulfide	75150		P022	100
d. Isobutanol	78831		U140	5000
e. Pyndine	110861		U196	1000
F006			F006	10
Wastewater treatment sludges from el acid anodizing aluminum, (2) tin plati steel, (4) aluminum or zinc-aluminum zinc and aluminum plating on carbon	ng on carbon ste plating on carbo	eel, (3) zinc plating (seg on steel, (5) cleaning/str	regated basis ipping associ ling of alumin	s) on carbon ated with tin, num.
F007			F007	10
Spent cyanide plating bath solutions f	rom electroplati	ng operations.		
F008			F008	10
Plating bath residues from the bottom are used in the process.	of plating baths	from electroplating op		
F009			F009	10
Spent stripping and cleaning bath soluthe process.	itions from elect	roplating operations wl	nere cyanides	are used in
F010			F010	10
Quenching bath residues from oil bath cess.	ns from metal he	eat operations where cya	anides are use	ed in the pro-
F011			F011	10
Spent cyanide solution from salt bath	pot cleaning fro	m metal heat treating o	perations.	

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
F012		Quantity (pounds)	F012	10
Quenching wastewater treatment sludge	s from metal h	eat treating operations y		es are used in
the process.		••••••••••••••••••••••••••••••••••••••	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
F019			F019	10
Wastewater treatment sludges from the	chemical conv	ersion coating of alumi	num except f	rom zirco-
nium phosphating in aluminum can was				
F020			F020	1
Waste (except wastewater and spent car manufacturing use (as a reactant, chemi or-tetrachlorophenol, or of intermediate not include wastes from the production	ical intermedia es used to produ	te, or component in a four the second s	ormulating provatives. (This field 2,4,5-tricl	ocess) of tri- listing does
F021			F021	1
Wastes (except wastewater and spent ca or manufacturing use (as a reactant, che pentachlorophenol, or of intermediates	emical intermed	liate, or component in a	a formulating	
F022			F022	1
Wastes (except wastewater and spent ca ing use (as a reactant, chemical intermed hexachlorobenzenes under alkaline con	liate, or compo		rocess) or tetr	
F023		11. 1	F023	
Wastes (except wastewater and spent ca of materials on equipment previously us ical intermediate, or component in a for does not include wastes from equipmen highly purified, 2,4,5-tri-chlorophenol.)	sed for the prod mulating proce t used only for	luction or manufacturin ess) of tri- and tetrachlo	g use (as a rea rophenols. ("	actant, chem- This listing
F024			F024	1
Wastes, including but not limited to dist from the production of chlorinated aliph lizing free radical catalyzed processes. (aids, spent desicants, wastewater, waste Section 261.32.)	natic hydrocarb (This listing do	ons, having carbon con es not include light end	itent from one ls, spent filter ts, and wastes	e to five, uti- s and filter
F025			F025	1
Condensed light ends, spent filters and f tain chlorinated aliphatic hydrocarbons, hydrocarbons are those having carbon c ing amounts and positions of chlorine su	by free radical hain lengths ra	catalyzed processes. T	hese chlorina	ted aliphatic
F026			F026	1
Wastes (except wastewater and spent ca of materials on equipment previously us ate, or component in a formulating proc tions.	ed for the man	ufacturing use (as a rea	ctant, chemic	al intermedi-

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
F027			F027	1
Discarded unused formulations contain lations containing compounds derived f tions containing hexachlorophene synth component.)	from these chlo	rophenols. (This listing	does not incl	ude formula-
F028			K028	1
Residues resulting from the incineration ous Waste Nos. F020, F021, F022, F02			nated with US	EPA Hazard-
K001	l			1
Bottom sediment sludge from the treatr creosote and/or pentachlorophenol.	nent of wastew	vaters from wood preser		
K002			K002	#
Wastewater treatment sludge from the p	production of c	hrome yellow and oran		
K003			K003	#
Wastewater treatment sludge from the p	production of n	nolyodate orange pigme	ents.	
K004			K004	10
Wastewater treatment sludge from the p	production of z	inc yellow pigments.		
K005			K005	#
Wastewater treatment sludge from the p	production of c	hrome green pigments.		
K006			K006	10
Wastewater treatment sludge from the phydrated).	production of c	hrome oxide green pigi	ments (anhyd	rous and
K007			K007	10
Wastewater treatment sludge from the p	production of in	ron blue pigments.	L	
K008			K008	10
Oven residue from the production of ch	rome oxide gr	een pigments.		L
K009			K009	10
Distillation bottoms from the production	n of acetaldeh	yde from ethylene.		L
K010			K010	10
Distillation side cuts from the production	on of acetaldeh	yde from ethylene.		
K011			K011	10
Bottom stream from the wastewater str	ipper in the pro	duction of acrylonitrile	ð.	I
K013			K013	10
Bottom stream from the acetonitrile co.	lumn in the pro	duction of acrylonitrile	¢.	L
K014			K014	5000
Bottom from the acetonitrile purification	n column in th	e production of acrylor	hitrile.	I
K015	1		K015	10
Still bottoms from the distillation of be	nzyl chloride.	1	I	
K016	1		K016	1
Heavy ends or distillation residues from	he production	n of carbon tetrachloric		L

K017Heavy ends (still bottoms) from the purification K018Heavy ends from the fractionation column K019Heavy ends from the distillation of ethyle	n in ethyl chl		K017 epi-chlorohyc K018	10 Irin.
K018 Heavy ends from the fractionation colum K019 Heavy ends from the distillation of ethyle	n in ethyl chl			lrin.
Heavy ends from the fractionation colum K019 Heavy ends from the distillation of ethyle		oride production.	K018	
K019 Heavy ends from the distillation of ethyle		oride production.		1
Heavy ends from the distillation of ethyle	ene dichloride			
	ene dichloride		K019	1
· · · · · · · · · · · · · · · · · · ·		in ethylene chloride p	roduction.	
K020			K020	1
Heavy ends from the distillation of vinyl	chloride in vi	nyl chloride monomer	production.	
K021			K021	10
Aqueous spent antimony catalyst waste fi	rom fluorome	thanes production.		
K022		1	K022	1
Distillation bottom tars from the producti	on of phenol/	acetone from cumene.		
K023			K023	5000
Distillation light ends from the production	n of ophthalic	anhydride from napht		
K024			K024	5000
Distillation bottoms from the production	of phthalic ar	hydride from nanhthal		
K025			K025	10
Distillation bottoms from the production	of nitrobenze	ne by the nitration of b	1	
K026			K026	1000
Stripping still tails from the production of	f methyl ethy	l pyndines	11020	1000
K027			K027	10
Centrifuge and distillation residues from	toluene diisoo	variate production	1027	10
K028			K028	1
Spent catalyst from the hydrochlorinator	reactor in the	production of 1 1 1 trie		1
K029			K029	1
Waste from the product steam stripper in	the productio	n of 1 1 1 trichloroetha		1
			K030	1
K030 Column bottoms or heavy ends from the c		duction of trichlorooth		
ene.	comomed pro	duction of unchoroeury	ylelle and per	-moroetnyi-
K031			K031	1
By-product salts generated in the product	ion of MSMA	and encodylic neid	KUJI	1
K032			K032	. 10
Wastewater treatment sludge from the pro	duction of a	lordana	K032	
		noruane.	K022	10
K033 Wastewater and scrub water from the chlo	ringtion of a	valonentadiana in the m	K033	10
K034			K034	10
	010010100000	diana in the production	1	1
Filter solids from the filtration of hexachle				1
K035 Wastewater treatment sludges generated in			K035	1

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
K036			K036	1
Still bottoms from toluene reclamation	distillation in t	he production of disulf	oton.	
K037			K037	1
Wastewater treatment sludges from the	production of	disulfoton.	I	
K038	1		K038	10
Wastewater from the washing and strip	ping of phorate	production.	I	
K039	1		K039	10
Filter cake from the filtration of diethy	lphosphorodith	ioic acid in the product	ion of phorate	
K040		-	K040	10
Wastewater treatment sludge from the	production of p	horate.	11	
K041			K041	1
Wastewater treatment sludge from the	production of t	oxaphene.	I	
K042			K042	10
Heavy ends or distillation residues from T.	n the distillation	n of tetrachlorobenzene	in the produc	tion of 2,4,5-
K043			K043	10
2,6-Dichlorophenol waste from the pro-	duction 2,4-D.			
K044			K044	10
Wastewater treatment sludges from the	manufacturing	and processing of exp	losives.	
K045			K045	10
Spent carbon from the treatment of wa	stewater contai	ning explosives.		
K046			K046	100
Wastewater treatment sludges from the compounds.	e manufacturing	, formulation and loadi		
K047			K047	1(
Pink/red water from TNT operations.				
K048			K048	#
Dissolved air floatation (DAF) float fro	om the petroleu	m refining industry.		
K049			K049	#
Slop oil emulsion solids from the petro	oleum refining i	ndustry.		
K050	T		K050	10
Heat exchanger bundle cleaning sludge	e from the petro	bleum refining industry.		
K051			K051	#
American Petreoleum Institute (API) s	eparator sludge	from the petroleum re	fining industr	/.
K052			K052	10
Tank bottoms (leaded) from the petrole	eum refining in	dustry.		
K060			K060]
Ammonia still lime sludge from cokin	g operations.	L.,	J	
K061			K061	#
Emission control dust/sludge from the	primary produ	ction of steel in electric	furnaças	

Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
K062			K062	#
Spent pickle liquor generated by steel f (Standard Industrial Classification Cod			the iron and s	teel industry
K064			K064	##
Acid plant blowdown slurry/sludge res production.	ulting from thic	ckening of blowdown sl	urry from pri	mary copper
K065	1		K065	##
Surface impoundment solids contained smelting facilities.	in and dredged	from surface impound	ments at prin	nary lead
K066			K066	##
Sludge from treatment of process waster tion.	ewater and/or a	cid plant blowdown fro	m primary zi	nc produc-
K069			K069	#
Emission control dust/sludge from seco	ondary lead sme	elting.		
K071			K071	1
Brine purification muds from the mercu fied brine is not used.	iry cell process	in chlorine production,	where separa	ately prepuri-
K073			K073	10
Chlorinated hydrocarbon waste from th anodes in chlorine production.	e purification s	tep of the diaphragm co	ell process us	ing graphite
K083			K083	100
Distillation bottoms from aniline extrac	tion.			
K084			K084	1
Wastewater treatment sludges generated arsenic or organo-arsenic compounds.	d during the pro	oduction of veterinary p	harmaceutica	lls from
K085			K085	10
Distillation or fractionation column bot	toms from the	production of chlorober	nzenes.	
K086		· · · · · · · · · · · · · · · · · · ·	K086	#
Solvent washes and sludges, caustic wa tubs and equipment used in the formula ing chromium and lead.			os, and stabili	zers contain-
K087			K087	. 100
Decanter tank tar sludge from coking o	perations.			
K088			K088	
Spent potliners from primary aluminum	reduction.			
K090			K090	
Emission control dust or sludge from fe	rrochromiumsi	licon production.		
K091			K091	
Emission control dust or sludge from fe	rrochromium p	production.	-	
K093			K093	5000
Distillation light ends from the product	on of phthalic	anhvdride from ortho-x	vlene.	

Hazardous Waste/Substances	CAS No. ¹	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
K094			K094	5000
Distillation bottoms from the productio	n of phthalic a	nhydride from ortho-xy	lene.	
K095	-		K095	100
Distillation bottoms from the productio	n of 1,1,1-trich	loroethane.	l	
K096			K096	100
Heavy ends from the heavy ends colum	in from the pro	duction of 1,1,1-trichlo	roethane.	
K097	Γ		K097	1
Vacuum stripper discharge from the chl	lordane chlorin	ator in the production c	of chlordane.	
K098	1		K098	1
Untreated process wastewater from the	production of	toxaphene.	L	
K099			K099	10
Untreated wastewater from the product	ion of 2.4-D.		1	
K100	T		K100	#
Waste leaching solution from acid leach	hing of emission	n control dust/sludge fi		v lead smelt-
ing.				,
K101	1		K101	1
Distillation tar residues from the distilla	tion of aniline	-based compounds in th	e production	of veterinary
pharmaceuticals from arsenic or organo			Ĩ	-
K102			K102	1
Residue from the use of activated carbo ticals from arsenic or organo-arsenic co		zation in the production		
K103			K103	100
Process residues from aniline extraction	n from the proc	luction of aniline.		
K104			K104	10
Combined wastewater streams generate	ed from nitrobe	enzene/aniline production		
K105			K105	10
Separated aqueous stream from the read	ctor product wa	ashing step in the produ		obenzenes.
K106			K106	1
Wastewater treatment sludge from the r	mercury cell pr	ocess in chlorine produ		
K107			K107	10
Column bottoms from product separation carboxylic acid hydrazines.	on from the pro	oduction of 1,1-dimethy	lhydrazine (U	JDMH) from
K108			K108	10
Condensed column overhead from prod duction of 1,1-dimethylhydrazine (UD)				om the pro-
K109			K109	10
Spent filter cartridges from product pur from carboxylic acid hydrazides.	ification from t	he production of 1,1-din	methylhydraz	ine (UDMH)
K110		Ι	K110	10
Condensed column overheads from inte zine (UDMH) from carboxylic acid hyd		ration from the product		nethylhydra-

Hazardous Waste/Substances	CAS No.1	Threshold Planning ² Quantity (pounds)	USEPA Waste Number	RQ (pounds) ³
K111		Quantos (poundo)	K111	10
Product washwaters from the productio	n of dinitrotoly	ene via nitration of tol		
K112			K112	10
Reaction by-product water from the dry	l	the production of tolue		
tion of dinitrotoluene.	ing column in	the production of tolue		a nyulogena-
K113			K113	10
Condensed liquid light ends from the pr	urification of to	Juenediamine in the pr		
amine via hydrogenation of dinitrotolue				
K114			K114	10
Vicinais from the purification of toluene	ediamine in the	production of toluened	liamine via hy	drogenation
of dinitrotoluene.	`			
K115			K115	10
Heavy ends from the purification of tolution of dinitrotoluene.	ienediamine in	the production of tolue	nediamine vi	a hydrogena-
K116			K116	10
Organic condensate from the solvent re-	covery column	in the production of to	luene disocya	inate via
phosgenation of toluenediamine.	,	Ĩ	5	
K117			K117	1
Wastewater from the reaction vent gas s	crubber in the	production of ethylene	bromide via	bromination
of ethene.				
K118			K118	1
Spent absorbent solids from purification	n of ethylene di	bromide in the product	ion of ethyler	e dibromide.
K123			K123	10
Process wastewater (including superma isdithiocarbamic acid and its salts.	tes, filtrates, an	d washwaters) from the	e production	of ethyleneb-
K124			K124	10
Reactor vent scrubber water from the pr	roduction of eth	ylene-bisdithiocarbam	ic acid and it	s salts.
K125			K125	10
Filtration, evaporation, and centrifugation acid and its salts.	on solids from	the production of ethyle	ene-bisdithio	carbamic
K126			K126	10
Baghouse dust and floor sweepings in n	nilling and pack	caging operations from		on or formu-
lation of ethylene-bisdithiocarbamic aci		001	*	
K131			K131	100
Wastewater from the reactor and spent s	ulfuric acid fro	m the acid dryer in the	production of	f methyl bro-
mide.		2	•	2
K132			K132	1000
Spent absorbent and wastewater solids f	from the produc	ction of methyl bromide		
K136	-		K136	1
Still bottoms from the purification of eth	nylene dibromi	de in the production of		omide via
bromination of ethene.	,	F V V V V V V V V		

- 1. Chemical Abstract Service (CAS) Registry Number.
- 2. Quantity in storage above which the Executive Agent must be notified (see Section 3, *Hazardous Materials Management*).
- 3. Reportable Quantity (RQ) release that requires notification (see Section 8, *Petroleum, Oil, and Lubricant (POL) Management*).
- ++ No reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 100 μ m (0.004 in.).
- +++ The RQ for asbestos is limited to friable forms only.
- 1* Indicates that the 1-lb [0.37 kg] RQ is a statutory RQ.
- ** Indicates that no RQ is being assigned to the generic or broad class.
- # Indicates that the RQ is subject to change when the assessment of potential carcinogenicity is completed.
- ## The statutory RQ for this hazardous substance may be adjusted in a future rulemaking; until then, the statutory RQ applies.

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Table 4-2

Commercial Chemical Products or Manufacturing Chemical Intermediates Identified as Toxic Wastes (40 CFR 261.33, 8 May 1990)

(NOTE: Primary hazardous properties of these materials are indicated by the letter (t) (toxicity), (r) (reactivity), (i) (ignitability), and (c) (corrosivity); absence of a letter indicates that the compound is listed only for acute toxicity.)

USEPA Hazardous Waste No.	Substance	
U001	acetaldehyde (i)	
U034	acetaldehyde, trichloro-	
U187	acetamide, N-(4-ethoxyphenyl)-	
U005	acetamide, N-9H-fluoren-2-y1-	
U240	acetic acid, (2,4-dichlorophenoxy)-, salts and esters	
U112	cetic acid, ethyl ester (i)	
U144	acetic acid, lead(2+) salt	
U214	acetic acid, thallium(1+) salt	
see F027	acetic acid, (2,4,5-trichlorophenoxy)-	
U002	acetone (i)	
U003	acetonitrile (i,t)	
U004	acetophenone	
U005	2-acetylaminoflourene	
U006	acetyl chloride (c, r, t)	
U007	acrylamide	
U008	acrylic acid (i)	
U009	acrylonitrile	
U011	amitrole	
U012	aniline (i, t)	
U136	arsenic acid, dimethyl-	
U014	auramine	
U015	azaserine	

USEPA Hazardous Waste No.	Substance
U010	azirino(2,3,3,4(pyrrolo(1,2-a)indole -4,7-dione, 6-amino-8-[((aminocarbonyl) oxy)methyl]-1,1a,2,8,8a,8b- hexahydro-8a-methoxy-5-methyl-,
U157	benz[j]aceanthrylene, 1,2-dihydro-3- methyl-
U016	benza[c]ridine
U017	benzal chloride
U192	benzamide, 3,5-dichloro-n- (1,1-diethyl-2-propynyl-
U018	benz[a]anthracene
U094	1,2-benzanthracene, 7,12-dimethyl-
U012	benzenamine (i,t)
U014	benzenamine, 4,4-carbonimidoylbis(N,N- dimethyl-
U049	benzenamine, 4-chloro-2-methyl-, hydrochloride
U093	benzenamine, N,N-dimethyl-4- (phenylazo)-
U328	benzenamine, 2-methyl-
U353	benzenamine, 4-methyl-
U158	benzenamine, 4,4-methylenebis(2-chloro-
U222	benzenamine, 2-methyl-, hydrochloride
U181	benzenamine, 2,-methyl-5-nitro
U019	benzene (i, t)
U038	benzeneacetic acid, 4-chloro-alpha- (4-chlorophenyl)-alpha-hydroxy, ethyl ester
U030	benzene, 1-bromo-4-phenoxy-
U035	benzenebutanoic acid, 4-[bis (2-chloroethyl)amino]-
U037	benzene, chloro-
U221	benzenediamine, ar-methyl-
U028	1,2-benzendicarboxylic acid, [bis(2-ethyl-hexyl)]ester

 Table 4-2 (continued)

USEPA Hazardous Waste No.	Substance	
U069	1,2-benzenedicarboxylic acid, dibutyl ester	
U088	1,2-benzenedicarboxylic acid, diethyl ester	
U102	1,2-benzendicarboxylic acid, dimethyl ester	
U107	1,2-benzenedicarboxylic acid, dioctyl ester	
U070	benzene, 1,2-dichloro-	
U071	benzene, 1,3-dichloro-	
U072	benzene, 1,4-dichloro-	
U060	benzene, 1,1'- (2,2-dichloroethylidene) bis[4-chloro-	
U017	benzene, (dichloromethyl)-	
U223	benzene, 1,3-diisocyanatomethyl- (r,t)	
U239	benzene, dimethyl-(i,t)	
U201	1,3-benzenediol	
U127	benzene, hexachloro-	
U056	benzene, hexahydro- (i)	
U220	benzene, methyl-	
U105	benzene, 1-methyl-2,4-dinitro-	
U106	benzene, 2-methyl-1,3-dinitro-	
U055	benzene, (1-methylethyl)-(i)	
U169	benzene, nitro- (i,t)	
U183	Benzene, pentachloro-	
U185	benzene, pentachloronitro-	
U020	benzenesulfonic acid chloride (c,r)	
U020	benzenesulfonyl chloride (c,r)	
U207	benzene, 1,2,4,5-tetrachloro-	
U061	benzene, 1,1'-(2,2,2- trichloroethylidene) bis[4-chloro	
U247	benzene, 1,1'(2,2,2- trichloroethylidene)[4-methoxy-	

 Table 4-2 (continued)

USEPA Hazardous Waste No.	Substance	
U023	benzene, (trichloromethyl)-	
U234	benzene, 1,3,5-trinitro-	
U021	benzidine	
U202	1,2-benzisothiazolin-3-one, 1,1-dioxide and salts	
U203	1,3-benzodioxole, 5-(2-propenyl)-	
U141	1,3-benzodioxole, 5-(1-propenyl)-	
U090	1,3-benzodioxole, 5-propyl-	
U064	benzo[rst]pentaphene	
U248	2-H-1-benzopyran-2-on2, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, and salts, when present at concentrations of 0.3% or less	
U022	benzo[a]pyrene	
U197	p-benzoquinone	
U023	benzotrichloride (c,r,t)	
U085	2,2-bioxirane (i,t)	
U021	(1,1-biphenyl)-4,4-diamine	
U073	(1,1-biphenyl)-4,4-diamine, 3,3-dichloro	
U091	(1,1-biphenyl)-4,4-diamine, 3,3- dimethoxy-	
U095	(1,1-biphenyl)4,4-diamine, 3,3- dimethyl-	
U225	bromoform	
U030	4-bromophenyl phenyl ether	
U128	1,3-butadiene, 1,1,2,3,4,4- hexachloro	
U172	1-butanamine, N-butyl-N-nitroso-	
U031	1-butanol (i)	
U159	2-butanone (i,t)	
U160	2-butanone peroxide (r,t)	
U053	2-butenal	

 Table 4-2 (continued)

JSEPA Hazardous Waste No.	Substance	
U074	2-butene, 1,4-dichloro- (i,t)	
U143	2-butenoic acid, 2-methyl-, 7- [(2,3-dihydroxy-2-(1-methoxyethyl) -3-methyl-1-oxobutoxy)methyl] -2,3,5,7s-yrytshyfto-1- pyrrolizin-1-yl ester, [1S-[alpha(Z),7(2S,3R), 7aalpha]]-	
U031	n-Butyl alcohol (i)	
U136	cacodylic acid	
U032	calcium chromate	
U238	carbamic acid, ethyl ester	
U178	carbamic acid, methylnitroso- ethyl ester	
U097	carbamic chloride, dimethyl-	
U114	carbamodithioic acid, 1,2- ethanediylbis-, salts and esters	
U062	carbamothioic acid, bis(1-methylethyl)-S- (2,3-dichloro-2-propenyl) ester	
U215	carbonic acid, dithallium(1+)salt	
U033	carbonic difluoride	
U156	carbonochlorodic acid, methyl ester (i,t)	
U033	carbon oxyfluoride (r,t)	
U211	carbon tetrachloride	
U034	chloral	
U035	chlorambucil	
U036	chlordane, alpha and gamma isomers	
U026	chlomaphazine	
U037	chlorobenzene	
U039	p-chloro-m-cresol	
U041	1-chloro-2,3-epoxypropane	

 Table 4-2 (continued)

USEPA Hazardous Waste No.	Substance	
U042	2-chloroethyl vinyl ether	
U044	chloroform	
U046	chloromethyl methyl ether	
U047	beta-chloronaphthalene	
U048	o-chlorophenol	
U049	4-chloro-o-toluidine, hydrochloride	
U032	chromic acid H2CrO4, calcium salt	
U050	chrysene	
U051	creosote	
U052	cresols (cresylic acid)	
U053	crotonaldehyde	
U055	cumene (i)	
U246	cyanogen bromide	
U197	2,5-cyclohexadiene-1, 4-dione	
U056	cyclohexane (i)	
U129	cyclohexane 1,2,3,4,5,6- hexachloro-, (1alpha, 2alpha, 3beta, 4alpha, 6beta)-	
U057	cyclohexanone (i)	
U130	1,3-cyclopentadiene, 1,2,3,4,5,5- hexachloro-	
U058	cyclophosphamide	
U240	2,4-d, salts and esters	
U059	daunomycin	
U060	ddd	
U061	ddt	
U062	diallate	
U063	dibenz[a,h]anthracene	
U064	dibenzo[a,i]pyrene	
U066	1,2-dibromo-3-chloropropane	
U069	dibutyl phthalate	
U070	o-Dichlorobenzene	
U071	m-Dichlorobenzene	

 Table 4-2 (continued)

USEPA Hazardous Waste No.	Substance	
U072	p-Dichlorobenzene	
U073	3,3'-dichlorobenzidine	
U074	1,4-dichloro-2-butene (i,t)	
U075	dichlorodifluoromethane	
U078	1,1-dichloroethylene	
U079	1,2-dichloroethylene	
U025	dichloroethyl ether	
U027	dichloroisopropyl ether	
U024	dichloromethoxy ethane	
U081	2,4-dichlorophenol	
U082	2,6-dichlorophenol	
U084	1,3-dichlorpropene	
U085	1,2:3,4-diepoxybutane (i, t)	
U108	1,4-diethyleneoxide	
U028	diethylhexyl phthalate	
U086	N,N-diethylhydrazine	
U087	O,O-diethyl-s-methyl dithiophosphate	
U088	diethyl phthalate	
U089	diethylstilbestrol	
U090	dihydrosafrole	
U091	3,3'-dimethoxybenzidine	
U092	dimethylamine (i)	
U093	dimethylaminoazobenzene	
U094	7,12-dimethylbenz[a]anthracene	
U095	3,3-dimethylbenzidine	
U096	alpha,alpha-dimethylbenzylhydroperox- ide (r)	
U097	dimethylcarbamoyl chloride	
U098	1,1-dimethylhydrazine	
U099	1,2-dimethylhydrazine	
U101	2,4-dimethylphenol	
U102	dimethyl phthalate	
U103	dimethyl sulfate	

 Table 4-2 (continued)

USEPA Hazardous Waste No.	Substance
U105	2,4-dinitrotoluene
U106	2,6-dinitrotoluene
U107	di-n-octyl phthalate
U108	1,4-dioxane
U109	1,2-diphenylhydrazine
U110	dipropylamine (i)
U111	di-n-propylnitrosamine
U041	epichlorhydrin
U001	ethanal (i)
U174	ethanamine, N-ethyl-N-nitroso-
U155	1,2-ethanediamine, n,n- dimethyl-n'-2-pyridinyl- n'-(2-thienylmethyl)-
U067	ethane, 1,2-dibromo-
U076	ethane, 1,1-dichloro-
U077	ethane, 1,2-dichloro-
U131	ethane, hexachloro-
U024	ethane, 1,1-[methylenebis(oxy)] bis[2-chloro-
U117	ethane, 1,1-oxybis- (i)
U025	ethane 1,1-oxybis[2-chloro-
U184	ethane, pentachloro-
U208	ethane, 1,1,1,2-tetrachloro-
U209	ethane, 1,1,2,2-tetrachloro-
U218	ethanethioamide
U359	ethane, 1,1,2-trichloro-
U173	ethanol 2,2'-(nitrosoimino)bis- 2,2'-(nitrosoimino)bis-
U004	ethanone, 1-phenyl-
U043	ethene, chloro-
U042	ethene, (2-chloroethoxy-)
U078	ethene, 1,1-dichloro-
U079	ethene, 1,2-dichloro- (e)
U210	ethene, tetrachloro-

Table 4-2 (continued)

USEPA Hazardous Waste No.	Substance		
U228	ethene, trichloro		
U112	ethyl acetate (i)		
U113	ethyl acrylate (i)		
U238	ethyl carbamate (urethane)		
U117	ethyl ether (i)		
U114	ethylenebisdithiocarbamic acid, salts and esters		
U067	ethylene dibromide		
U077	ethylene dichloride		
U359	ethylene glycol monoethyl ether		
U115	ethylene oxide (i,t)		
U116	ethylenethiourea		
U076	ethylidene dichloride		
U118	ethyl methacrylate		
U119	ethyl methanesulfonate		
U120	fluoranthene		
U122	formaldehyde		
U123	formic acid (c,t)		
U124	furan (i)		
U125	2-furancarboxaldehyde (i)		
U147	2,5-furandione		
U213	furan, tetrahydro- (i)		
U125	furfural (i)		
U124	furfuran (i)		
U206	glucopyranose, 2-deoxy-2 (3-methyl-3-nitrosoureido)-		
U126	glycidylaldehyde		
U163	guanidine, N-methyl-N'-nitro- N-nitroso-		
U127	hexachlorobenzene		
U128	hexachlorobutadiene		
U130	hexachlorocyclopentadiene		
U131	hexachloroethane		

USEPA Hazardous Waste No.	Substance		
U132	hexachlorophene		
U243	hexachloropropene		
U133	hydrazine (r,t)		
U086	hydrazine, 1,2-diethyl-		
U098	hydrazine, 1,1-dimethyl-		
U099	hydrazine, 1,2-dimethyl-		
U109	hydrazine, 1,2-diphenyl-		
U134	hydrofluoric acid (c,t)		
U134	hydrogen fluoride (c,t)		
U135	hydrogen sulfide		
U096	hydroperoxide, 1-methyl-1-phenylethyl- (r)		
U116	2-imidazolidinethione		
U137	indeno(1,2,3-cd)pyrene		
U190	1,3-isobenzofurandione		
U140	isobutyl alcohol (i,t)		
U141	isosafrole		
U142	kepone		
U143	lasiocarpine		
U144	lead acetate		
U146	lead, bis(acetato-O) tetrahydroxytri-		
U145	lead phosphate		
U146	lead subacetate		
U129	lindane		
U163	mnng		
U147	maleic anhydride		
U148	maleic hydrazide		
U149	malononitrile		
U150	melphalan		
U151	mercury		
U152	methacrylonitrile (i,t)		
U092	methanamine (N-methyl- (i)		

 Table 4-2 (continued)

USEPA Hazardous Waste No.	Substance		
U029	methane, bromo-		
U045	methane, chloro- (i,t)		
U046	methane, chloromethoxy-		
U068	methane, dibromo-		
U080	methane, dichloro-		
U075	methane, dichlorodifluoro-		
U138	methane, iodo-		
U119	methanesulfonic acid, ethyl ester		
U211	methane, tetrachloro-		
U153	methanethiol (i,t)		
U225	methane, tribromo-		
U044	methane, trichloro-		
U121	methane, trichlorofluoro-		
U154	methanol (i)		
U155	methapyrilene		
U142	1,3,4-metheno-2H- cyclobuta[cd]pentalen-2-one- 1,1a,3,3a,4,5,5,5a,5b,6- decachlorooctahydro-		
U247	methoxychlor		
U154	methyl alcohol (i)		
U029	methyl bromide		
U186	1-methylbutadiene (i)		
U045	methyl chloride (i,t)		
U156	methyl chlorocarbonate (i,t)		
U226	methyl chloroform		
U157	3-methylcholanthrene		
U158	4,4-methylenebis-(2-chloroaniline)		
U068	methylene bromide		
U080	methylene chloride		
U159	methyl ethyl ketone (mek) (i,t)		
U160	methyl ethyl ketone peroxide (r,t)		
U138	methyl iodide		
U161	methyl isobutyl ketone (i)		

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 Table 4-2 (continued)

USEPA Hazardous Waste No.	Substance methyl methacrylate (i,t)		
U162			
U161	4-methyl-2-pentanone (i)		
U164	methylthiouracil		
U010	mitomycin C		
U059	5,12-Naphthacenedione, (Bs(cis)8- acetyl-10-[(3-amino-2,3,6-trideoxy- alpha-L-lyxo-hexopyranosyl)oxyl]- 7-8,9,10-tetrahydro-6,8,11- trihydroxy-1-methoxy-		
U167	1-naphthalenamine		
U168	2-naphthalenamine		
U026	naphthalenamine, N,N'-bis (2-chloroethyl)-		
U165	naphthalene		
U047	naphthalene, 2-chloro-		
U166	1,4-naphthalenedione		
U236	2,7-naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)- bis(azo)bis(5-amino-4-hydroxy)-, tetrasodium salt		
U166	1,4-Naphthoquinone		
U167	alpha-naphthylamine		
U168	beta-naphthylamine		
U217	nitric acid, thallium(1+) salt (2-chloromethyl)-		
U169	nitrobenzene (i,t)		
U170	p-nitrophenol		
U171	2-nitropropane (i)		
U172	n-nitrosodi-n-butylamine		
U173	n-nitrosodiethanolamine		
U174	n-nitrosodiethylamine		
U176	n-nitroso-n-ethylurea		
U177	n-nitroso-n-methylurea		
U178	n-nitroso-n-methylurethane		
U179	n-nitrosopiperidine		

 Table 4-2 (continued)

SEPA Hazardous Waste No.	Substance n-nitrosopyrrolidine	
U180		
U181	5-nitro-o-toluidine	
U193	1,2-oxathiolane, 2,2-dioxide	
U058	2H-1,3,2-Oxazaphosphorine,2[bis(2 chloroethyl)amino]tetrahydro-, 2-oxide.	
U115	oxirane (i,t)	
U126	oxiranecarboxyaldehyde	
U041	oxirane, 2-(chloromethyl)-	
U182	paraldehyde	
U183	pentachlorobenzene	
U184	pentachloroethane	
U185	pentachloronitrobenzene	
see F027	pentachlorophenol	
U161	pentanol, 4-methyl-	
U186	1,3-pentadiene (i)	
U187	phenacetin	
U188	phenol	
U048	phenol, 2-chloro-	
U039	phenol, 4-chloro-3-methyl-	
U081	phenol, 2,4-dichloro-	
U082	phenol, 2,6-dichloro-	
U089	phenol, 4,4'-(1,2-diethyl- 1,2-ethenediyl)bis-, (e)	
U101	phenol, 2,4-dimethyl-	
U052	phenol, methyl	
U132	phenol, 2,2'-methylenebis [3,4,6-trichloro-	
U170	phenol, 4-nitro-	
see F027	phenol, pentachloro-	
see F027	phenol, 2,3,4,6-tetrachloro-	
see F027	phenol, 2,4,5-trichloro-	
see F027	phenol, 2,4,6-trichloro-	

 Table 4-2 (continued)

USEPA Hazardous Waste No.	Substance		
U150	l-phenylalanine, 4- [bis(2-chloroethyl)amino]-		
U145	phosphoric acid, lead salt		
U087	phosphorodithioic acid, 0,0-diethyl S-methyl ester		
U189	phosphorus sulfide (r)		
U190	phthalic anhydride		
U191	2-picoline		
U179	piperidine, 1-nitroso-		
U192	pronamide		
U194	1-propanamine (i,t)		
U111	1-propanamine, n-nitroso-n-propyl-		
U110	1-propanamine, n-propyl- (i)		
U066	propane, 1,2-dibromo-3-chloro-		
U083	propane, 1,2-dichloro-		
U149	propanedinitrile		
U171	propane, 2-nitro- (i,t)		
U027	propane, 2,2-oxybis[2-chloro-		
U193	1,3-propane sultone		
see F027	propanoic acid, 2-(2,4,5- trichlorophenoxy)-		
U235	1-propanol, 2,3-dibromo-, phosphate (3:1)		
U140	1-propanol, 2-methyl- (i,t)		
U002	2-propanone (i)		
U007	2-propenamide		
U084	1-propene, 1,3-dichloro-		
U243	1-propene, 1,1,2,3,3,3-hexachloro-		
U009	2-propenenitrile		
U152	2-propanenitrile, 2-methyl- (i,t)		
U008	2-propenoic acid (i)		
U113	2-propenic acid, ethyl ester (i)		
U118	2-propenoic acid, 2-methyl-, ethyl ester		

 Table 4-2 (continued)

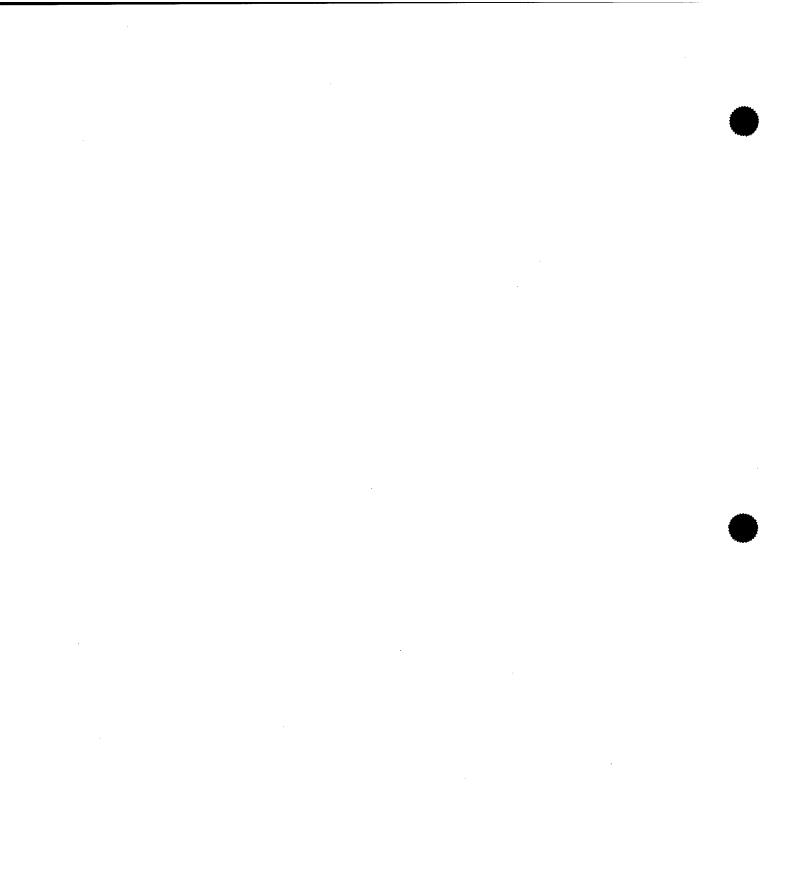
USEPA Hazardous Waste No.	Substance 2-propenoic acid, 2-methyl-, methyl ester (i,t)	
U162		
U194	n-propylamine (i,t)	
U083	propylene dichloride	
U148	3,6-pyridazinedione, 1,2-dihydro-	
U196	pyridine	
U191	pyridine, 2-methyl-	
U237	2,4(1H,3H)-pyrimidinedione, 5- [bis(2-chloroethyl)amino]-	
U164	4(1H)-pyrimidinone, 2,3-dihydro-6- methyl 2-thioxo-	
U180	pyrrolidine, 1-nitroso	
U200	reserpine	
U201	resorcinol	
U202	saccharin and salts	
U203	safrole	
U204	selenious acid	
U204	selenium dioxide	
U205	selenium sulfide	
U205	selenium sulfide SeS2 (r,t)	
U015	l-serine, diazoacetate (ester)	
see F027	silvex (2,4,5-tp)	
U206	streptozotocin	
U103	sulfuric acid, dimethyl ester	
U189	sulfur phosphide (r)	
U232	2,4,5-T	
U207	1,2,4,5-tetrachlorobenzene	
U208	1,1,1,2-tetrachloroethane	
U209	1,1,2,2-tetrachloroethane	
U210	tetrachloroethylene	
see F027	2,3,4,6-tetrachlorophenol	
U213	tetrahydrofuran (i)	

 Table 4-2 (continued)

USEPA Hazardous Waste No.	Substance			
U214	thallium (i) acetate			
U215	thallium (i) carbonate			
U216	thallium chloride			
U216	thallium chloride Tlcl			
U217	thallium (i) nitrate			
U218	thioacetamide			
U153	thiomethanol (i,t)			
U244	thioperoxydicarbonic diamide, tetramethyl-			
U219	thiourea			
U244	thiuram			
U220	toluene			
U221	toluenediamine			
U223	toluene diisocyanate (r,t)			
U328	o-toluidine			
U353	p-toluidine			
U222	o-toluidine hydrochloride			
U011	1H-1,2,4-triazol-3-amine			
U227	1,1,2-trichloroethane			
U228	trichloroethylene			
U121	trichloromonofluoromethane			
U230	2,4,5-trichlorophenol			
U231	2,4,6-trichlorophenol			
U234	1,3,5-trinitrobenzene (r,t)			
U182	1,3,5-trioxane, 2,4,6-trimethyl-			
U235	tris(2,3-dibromopropyl)phosphate			
U236	trypan blue			
U237	uracil mustard			
U176	urea, n-ethyl-n-nitroso-			
U177	urea, n-methyl-n-nitroso-			
U043	vinyl chloride			
U248	Warfarin, when present at concentrations of .3% or less			

USEPA Hazardous Waste No.	Substance	
U239	xylene (i)	
U200	yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5- trimethoxy-benzoyl)oxy], methyl ester	
U249	Zinc phosphide, when present at concentrations of 10% or less.	

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Table 4-3

USEPA HW No.	Constituent	CAS No.	Chronic toxicity reference level	Regulatory Level(mg/L)
D004	Arsenic	7440-38-2	0.05	5.0
D005	Barium	7440-39-3	1.0	100.0
D018	Benzene	71-43-2	0.005	0.5
D006	Cadmium	7440-43-9	0.01	1.0
D019	Carbon tetrachloride	56-23-5	0.005	0.5
D020	Chlordane	57-74-9	0.0003	0.03
D021	Chlorobenzene	108-90-7	1	100.0
D022	Chloroform	67-66-3	0.06	6.0
D007	Chromium	7440-47-3	0.05	5.0
D023	o-Cresol	95-48-7	2	200.0 1
D024	m-Cresol	108-39-4	2	200.0 ¹
D025	p-Cresol	106-44-5	2	200.0 ¹
D026	Cresol		2	200.0 1
D016	2,4-D	94-75-7	0.1	10.0
D027	1,4-Dichlorobenzene	106-46-7	0.075	7.5
D028	1,2-Dichloroethane	107-06-2	0.005	0.5
D029	1,1-Dichloroethylene	75-35-4	0.007	0.7
D030	2,4-Dinitrotoluene	121-14-2	0.0005	0.13 ²
D012	Endrin	72-20-8	0.0002	0.02
D031	Heptachlor (and its hydroxide)	76-44-8	0.00008	0.008
D032	Hexachlorobenzene	118-74-1	0.0002	0.13 ²
D033	Hexachloro-1,3-butadiene	87-68	3	0.005
D034	Hexachloroethane	67-72-1	0.03	3.0
D008	Lead	7439-92-1	0.05	5.0
D013	Lindane	58-89-9	0.004	0.4
D009	Мегсигу	7439-97-6	0.002	0.2
D014	Methoxychlor	72-43-5	0.1	10.0
D035	Methyl ethyl ketone	78-93-3	2	200.0
D036	Nitrobenzene	98-95-3	0.02	2.0
D037	Pentachlorophenol	87-86-5	1	100.0
D038	Pyridine	110-86-1	0.04	5.0 ²

Toxicity Characteristics Constituents and Regulatory Levels (40 CFR 261.24)

USEPA HW No.	Constituent	CAS No.	Chronic toxicity reference level	Regulatory Level(mg/L)
D010	Selenium	7782-49-2	0.01	1.0
D011	Silver	7440-22-4	0.05	5.0
D039	Tetrachloroethylene	127-18-4	0.007	0.7
D015	Toxaphene	8001-35-2	0.005	0.5
D040	Trichloroethylene	79-01-6	0.005	0.5
D041	2,4,5-Trichlorophenol	95-95-4	4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	0.02	2.0
D017	2,4,5-TP (Silvex)	93-72-1	0.01	1.0
D043	Vinyl chloride	75-01-4	0.002	0.2

Table 4-3 (continued)

¹ If o-, m-, and p-cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used.

² Quantitation limit is greater than the calculated regulatory level. Therefore, the quantitation limit becomes the regulatory level. (Source: Federal Register 55:61, page 11804.)

Table 4-4

Hazardous Materials/Hazardous Waste Storage Incompatibility Chart

Substances in bold have detailed example lists on the next page.

If the material contains:	It may not be stored with any of the following:
Acid (pH below 2.0)	Caustics (pH above 12.5) Reactive Metals Alcohol Water Aldehydes Halogenated, Nitrated, or Unsaturated Hydrocarbons Reactive Organic Compounds and Solvents Spent Cyanide and Sulfide Solutions Oxidizers
Caustic (pH above 12.5)	Acid (pH below 2.0) Reactive Metals Alcohol Water Aldehydes Halogenated, Nitrated, or Unsaturated Hydrocarbons Reactive Organic Compounds and Solvents
Reactive Metals	Caustics Acids Alcohol Aldehydes Halogenated, Nitrated, or Unsaturated Hydrocarbons Reactive Organic Compounds and Solvents Oxidizers
Reactive Organic Compounds and Solvents	Caustics Acids Reactive Metals
Spent Cyanide and Sulfide Solutions	Acids
Oxidizers	Acetic or Other Organic Acids Concentrated Mineral Acids Reactive Metals Reactive Organic Compounds and Solvents Ignitable [Flammable/Combustible] Wastes*

 "Ignitable" in this context refers to substances with a flashpoint below 140 °F, and includes: Combustible substances, with a flashpoint below 140 °F Flammable substances, with a flashpoint below 100 °F.

Some Deadly Combinations

Acids + Oil or Grease = Fire	Flammable Liquids + Hydrogen Peroxide = Fire/Explosion
Acids + Caustics = Heat/Spattering	Aluminum Powder + Ammonium Nitrate = Explosion
Caustics + Epoxies = Extreme Heat	Sodium Cyanide + Sulfuric Acid = Lethal Hydrogen Cyanide
Chlorine Gas + Acetylene = Explosion	Ammonia + Bleach = Noxious Fumes

Table 4-4 (continued)

In general: Reactives must be segregated from Ignitables Acids must be segregated from Caustics Corrosives should be segregated from Flammables Oxidizers should be segregated from EVERYTHING Many Corrosives are "Water Reactive" Most Organic Reactives must be segregated from Inorganic Reactives (metals)

Ignitables	Corrosives		
(Flammables/Combustibles)	Acids	Caustics	
Carburetor Cleaners Engine Cleaners Epoxy, Resins, Adhesives, and Rubber Cements Finishes	Battery Acids Degreasers and Engine Cleaners Etching Fluids	Acetylene Sludge Alkaline Battery Acids Alkaline Cleaners Alkaline Degreasers	
Fuels Lacquers Paints Paint Thinners Paint Wastes Pesticides that contain Solvents (such as Methyl Alcohol, Ethyl Alcohol, Isopropyl Alcohol, Toluene, Xylene). Petroleum Solvents (Drycleaning Fluid)	Hydrobromic Acid Hydrochloric Acid (Muri- atic Acid) Nitric Acid (<40%) (Aquafortis) Phosphoric Acid Rust Removers Sulfuric Acid (Oil of Vit- riol)	Alkaline Etching Fluids Lime and Water Lime Wastewater Potassium Hydroxide (Caustic Potash) Rust Removers Sodium Hydroxide (Caus- tic Soda, Soda Lye)	
Solvents: Acetone Benzene	Reactive Metals	Reactive Organic Com- pounds and Solutions	
Carbon Tetrachloride (Carbon Tet) Ethanol (Ethyl Alcohol) Ethyl Benzene Isopropanol (Isopropyl Alcohol) Kerosene (Fuel Oil #1) Methanol (Wood Alcohol) Methyl Ethyl Ketone (MEK) Petroleum Distillates Tetrahydrofuran (THF) Toluene (Methacide, Methylbenzene, Methylbenzol, Phenylmethane, Toluol,	Lithium (Batteries) Aluminum Beryllium Calcium Magnesium Sodium Zinc Powder	Alcohols Aldehydes Chromic Acids (from chrome plating, copper stripping and aluminum anodizing) Cyanides (from electro- plating operations) Hypochlorides (from water treatment plants,	
Antisal 1A)	Oxidizers	swimming pools, sani- tizing operations)	
White Spirits (White Spirits, Mineral Spirits, Naptha) Xylene (Xylol) tains tripping Agents Varsol Vaste Fuels Vaste Ink Vax Removers Vood Cleaners	Chlorine Gas Nitric Acid (>40%), aka Red Fuming Nitric Nitrates (Sodium Nitrate, Ammonium Nitrate) Perchlorates Perchloric Acid Peroxides Calcium Hypochlorite (>60%)	Organic Peroxides (includ- ing Hydrogen Perox- ide) Perchlorates Permanganates Sulfides	

INSTA	LLA	TION:	COMPLIANCE CATEGORY:	DATE:	REVIEWER(S) :	
			HAZARDOUS WASTE MANAGEMENT Turkey ECAMP			
STATUS		JS				
		RMA	REVIEWER COMMENTS:			
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SECTION 5

NATURAL RESOURCES MANAGEMENT

Turkey ECAMP

SECTION 5

NATURAL RESOURCES MANAGEMENT

A. Applicability of this Section

This chapter applies to any Air Force (AF) installation with improved, semi-improved, and unimproved grounds. Included are required plans and programs needed to ensure proper protection and management of natural resources such as soil, water, plants, and wildlife.

The regulatory requirements in this section are based on Department of Defense (DOD) regulations and Air Force Instructions (AFIs) that apply at overseas installations. Management Practices (MPs) are derived from DOD regulations and other documents that are not mandatory overseas but are important to follow to preserve the health and safety of AF employees and protect the environment.

B. DOD Directives/Instructions

• Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 13, addresses required plans and programs for the protection, enhancement, and management of natural resources and endangered or threatened species.

C. U.S. Air Force Documents

• None

D. Responsibility for Compliance

- Base Civil Engineering (BCE) is responsible for funding, supervising, controlling, and managing installation natural resources and historic preservation programs.
- The Natural Resources Manager is responsible for preparing management plans, cooperative agreements, budgets, and the annual natural resources report. The natural resources manager also implements and controls all activities that promote natural resources management. On installations without a full-time Natural Resources Manager, these duties would normally be assigned to the environmental coordinator or community planner.

E. Definitions

- Action all activities or programs of any kind authorized, funded, or carried out, in whole or in part, on DOD-controlled installations (FGS-Turkey 20).
- Adverse Effect changes that diminish the quality or significant value of natural resources, archaeological resources, or cultural resources or properties. For biological resources, adverse effects include overall population fitness (FGS-Turkey 20).
- *Conservation* wise management and use of natural resources to provide the best public benefits for present and future generations (FGS-Turkey 20).

- *Endangered Species* any species of flora or fauna listed in Tables 5-1 or 5-2 or designated by Turkish authorities whose continued existence is, or is likely to be, threatened and is therefore subject to special protection from destruction or adverse modification of associated habitat (FGS-Turkey 20).
- *Management Plan* a document describing natural resources, and their quantity and condition, and actions to ensure conservation and good stewardship (FGS-Turkey 20).
- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Natural Resource* all living and inanimate materials supplied by nature that are of aesthetic, ecological, educational, historical, recreational, scientific, or other value (FGS-Turkey 20).
- *Natural Resources Management* action taken to protect, manipulate, alter, or manage environmental, human, and biological resources in harmony with each other to meet present and future human needs (FGS-Turkey 20).
- *Preservation* the act or process of applying measures to sustain the existing form, integrity, and material of a building or structure and the existing form and vegetative cover of a site. It may include initial stabilization work where necessary, as well as ongoing maintenance of the historic building materials (FGS-Turkey 20).

NATURAL RESOURCES MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

www	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations	5-1 through 5-3	(1)(2)
Natural Resources	5-4 through 5-7	(1)
Endangered or Threatened Species	5-8	(1)
Fish and Wildlife	5-9	(1)
Grounds Management	5-10 and 5-11	(1)

(a) CONTACT/LOCATION CODE:

.

(1) Natural Resources Manager (or Environmental Coordinator)

(2) Base Staff Judge Advocate





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NATURAL RESOURCES MANAGEMENT

Records To Review

- Documentation of finding of no adverse effect (for construction activities)
- Environmental Impact Statement (EIS)
- Land Use Plan
- Fish and Wildlife Plan
- Outdoor Recreation Plan
- Cropland and Grazing Plan
- Forest Management Plan

Physical Features To Inspect

- Construction sites
- Site or landmark of historic or archaeological interest
- Facilities constructed in the past 2 yr
- Wildlife containment areas
- Wildlife habitat and land and water resources
- Equipment that could damage wildlife, its habitat, or land and water resources

People To Interview

- Natural Resources Manager (or Environmental Coordinator)
- Base Staff Judge Advocate

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COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
ALL INSTALLATIONS			
5-1. Copies of all relevant DOD directives/ instructions, U.S. Air Force (USAF) directives, and guidance documents should be maintained at the installation (MP).	Verify that the Base Staff Judge Advocate has available the host-nation Final Governing Standards and relevant USAF documents. (2)		
5-2. Installations must meet regulatory require-	Determine whether any new regulations concerning natural resources have been issued since the finalization of the manual. $(1)(2)$		
ments issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Verify that the installation is in compliance with newly issued regulations.		
5-3. The Installation Natural Resource Manager should be included in the coordination process for all actions that may affect the installation's natural resources (MP).	Verify that the Natural Resources Manager is included in the coordination process for all actions that may affect the installation's natural resources. (1)		
NATURAL RESOURCES			
5-4. Certain installations must develop programs for conserving, managing, and protecting natural resources (FGS-Turkey 13-1).	Determine whether the installation has any of the following resources: (1) land (soil and water) grazing and cropland forest fish and wildlife outdoor recreation. 		
	Verify that the installation has management plans for such resources, where they exist.		
	Verify that the installation considers Turkish conservation practices in developing a program for conserving, managing, and protecting natural resources.		

(1) Natural Resources Manager (or Environmental Coordinator) (2) Base Staff Judge Advocate

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
5-5. The installation's land management plan should address certain topics (MP).	Verify that the land management plan reflects a comprehensive effort to educate installation personnel. (1) Verify that the plan includes programs and policies and reduces nonpoint sources of water pollution, including:		
	 fertilizer application pesticide use stormwater runoff waste oil recovery grounds maintenance car washing erosion/sedimentation control. 		
5-6. Technical instruction should be provided for personnel engaged in the care of the installation (MP).	Verify that the installation provides periodic and comprehensive technical instruction concerning land preparation, soil management, fertilization, pruning, spraying, and other horticulture skills to personnel engaged in the care of the installation. (1)		
5-7. Personnel who manage natural resources must be properly trained (FGS-Turkey 13-3).	Verify that personnel who manage natural resources are trained in the management of their discipline. (1)		
ENDANGERED OR THREATENED SPECIES			
5-8. Installations must manage endangered spe-	Verify that installation commanders take reasonable steps to protect and enhance known endangered species and their habitat. (1)		
cies (FGS-Turkey 13-2 and 13-4.A).	(NOTE: Consult Tables 5-1 and 5-2 for a list of species determined to be threatened or endangered by the Republic of Turkey.)		
	Verify that, if it is financially and otherwise practical, a survey of endangered species is conducted.		
	Verify that, if it is financially and otherwise practical, the installation supports host nation-initiated surveys.		
	Verify that Turkish officials are normally notified of the discovery of any endangered species not previously known to be present on the installation.		

(1) Natural Resources Manager (or Environmental Coordinator) (2) Base Staff Judge Advocate

COMPLIANCE CATEGORY: NATURAL RESÓURCES MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
5-8. (continued)	Verify that installation personnel are aware of special provisions afforded to individual species by Turkey's Central Hunting Commission.	
FISH AND WILDLIFE		
5-9. Installation Commanders (ICs) must emphasize the maintenance and protection of habitat favorable to the local fish and wildlife (FGS-Turkey 13-4.B).	Verify that habitats that are favorable to the reproduction and survival of indigenou fish and wildlife are maintained and protected. (1)	
GROUNDS MANAGEMENT		
5-10. Installations must meet specific standards with regard to grounds maintenance (FGS-Tur-	Verify that installation grounds are maintained in ways that meet designated missic use and assure harmony with the natural landscape. (1) Verify that land and vegetation management activities are consistent with moder	
key 13-4.C and 13-4.E).	conservation and land use principles.	
5-11. A protective vege- tative cover (or other standard soil erosion/ sed- iment control measures) must be used to control dust and/or stabilize sites (FGS-Turkey 13-4.D).	Verify that the installation uses a protective vegetative cover (or other standard so erosion/sediment control measures) to control dust and/or stabilize sites. (1)	
5-12. The installation should have a mitigation and monitoring plan	Verify that there is a mitigation and monitoring plan for environmental compliance (1)	
(MP).	Verify that the installation has developed plans to preserve, protect, and acquire the water supplies necessary to support all natural resources projects and programs.	

(1) Natural Resources Manager (or Environmental Coordinator) (2) Base Staff Judge Advocate



Table 5-1

Endangered/Threatened Species

(FGS-Turkey, Table 13-1)

COMMON NAME	SCIENTIFIC NAME	HISTORIC RANGE
	MAMMALS	
Ass, Asian wild (=kulgan, onager)	Equus hemionus	Southwestern and Central Asia
Bandicoot, barred	Perameles bougainville	Australia
Bandicoot, desert	Perameles eremiana	Australia
Bandicoot, lesser rabbit	Perameles leucura	Australia
Bandicoot, pig-footed	Chaeropus ecaudatus	Australia
Bandicoot, rabbit	Macrotus lagotis	Australia
Banteng	Bos javanicus (=banteng)	Southeast Asia
Bat, Mexican long-nosed	Leptonycteris nivalis	Central America
Bat, Sanborn's long-nosed	Leptonycteris sanborni (=yerbabuenae)	USA, Mexico, Central America
Cat, Iriomote	Felis (Mayailurus) iriomotensis	Japan (Iriomote Island, Ryuku Islands)
Cat, marbled	Felis marmorata	Southeast Asia
Chamois, Apennine	Rupicapra rupicapta ornata	Italy
Deer, Eld's brow-antlered	Cervus eldi	Southeast Asia
Deer, Philippine	Axis (=Cervus) porcinus calamianensis	Philippines (Calamian Islands)
Deer, Ryukyu sika	Cervus nippon keramae	Japan (Ryukyu Islands)
Dhole (=Asiatic wild dog)	Cuon alpinus	Southeast Asia
Dibbler	Antechinus apicalis	Australia
Dugong	Dugong dugon	Japan
Gibbons	Hylobates spp. (including Nomascus)	Southeast Asia
Goat, wild (=Chiltanmarkhor)	Capra aegagrus (=falconen chiltanensis)	Southwestern Asia
Goral	Nemorhaedus goral	East Asia
Hutia, Cabrera's	Capromys angelcabrerai	Cuba
Hutia, dwarf	Capromys nana	Cuba
Hutia, large eared	Capromys auntus	Cuba
Hutia, little earth	Capromys sanfelipensis	Cuba
Ibex, Pyrenean	Capra pyrenaicapyrenaica	Spain
Kangaroo, eastern gray	Macropus giganteus	Australia
Kangaroo, red	Macropus (Megaleia) rufus	Australia
Kangaroo, Tasmanian forester	Macropus giganteus tasmaniensis	Australia (Tasmania)

COMMON NAME	SCIENTIFIC NAME	HISTORIC RANGE
Kangaroo, western gray	Macropus fuliginosis	Australia
Leopard	Panthera pardus	Asia
Leopard, clouded	Neofelis nebulosa	Southeast and south-central Asia, Taiwan
Leopard, snow	Panthera uncia	Central Asia
Lion, Asiatic	Panthera leo persica	Turkey
Lynx, Spanish	Felis (=Lynx) pardina	Spain, Portugal
Macaque, Japanese	Macaca fuscata	Japan (Shikoku, Kyushu and Honshu Islands)
Marsupial, eastern jerboa	Antechinomys laniger	Australia
Marsupial-mouse, large1ep	Sminthopsis psammophila	Australia
Marsupial-mouse, long-tailed	Sminthopsis longacaudata	Australia
Monkey, red-backed squirrel	Saimiri oerstedii	Panama
Monkey, spider	Ateles geoffroyl panamensis	Panama
Mouse, Australian native	Zyzomys (=Notomys) pedunculatus	Australia
Mouse, Australian native	Notomys aquilo	Australia
Mouse, Field's	Pseudomys fieldi	Australia
Mouse, Gould's	Pseudomys gouldii	Australia
Mouse, New Holland	Pseudomys novaehollandiae	Australia
Mouse, Shark Bay	Pseudomys praeconis	Australia
Mouse, Shortridge's	Pseudomys shortridgei	Australia
Mouse, Smoky	Pseudomys fumeus	Australia
Mouse, western	Pseudomys occidentalis	Australia
Native-cat, eastern	Dasyurus viverrinus	Australia
Numbat	Mymecodius fasciatus	Australia
Planigale, little	Planginale ingrami subtilissima (formerly P. subtilissima)	Australia
Planigale, southern	Planigale tenuirostris	Australia
Possum, mountain pygmy	Burramys parvus	Australia
Possum, scaly-tailed	Wyulda squamicaudata	Australia
Puma, Costa Rican	Felis concolor costaricensis	Panama
Quokka	Setonix brachyurus	Australia
Rabbit, Ryukyu	Pentalagus furnessi	Japan (Ryuku Islands)
Rat, false water	Xeromys myoides	Australia
Rat, stick-nest	Leporillus conditor	Australia
Rat-kangaroo, brush-tailed	Bettongia penicillata	Australia
Rat-kangaroo, Gaimard's	Bettongia gaimardi	Australia

COMMON NAME	SCIENTIFIC NAME	HISTORIC RANGE
Rat-kangaroo, Lesuer's	Bettongia lesuer	Australia
Rat-kangaroo, plain	Caloprymnus campestris	Australia
Rat-kangaroo, Queensland	Bettongia tropica	Australia
Seledang (=Gaur)	Bos gaurus	Southeast Asia
Serow	Capricornis sumatraensis	East Asia
Solenodon, Cuban	Solenodon (Atopogale) cubanus	Cuba
Tamaraw	Bubalus mindorensis	Philippines
Tarsier, Philippine	Tarsius syrichta	Philippines
Tiger	Panthera tigris	Temperate and tropical Asia
Tiger, Tasmanian(=Thylacine)	Thylacinus cynocephalus	Australia
Wallaby, banded hare	Lagostrophus fasciatus	Australia
Wallaby, brindled nail-tailed	Onychogalea fraenata	Australia
Wallaby, cresent nail-tailed	Onychogalea lunata	Australia
Wallaby, Parma	Macropus parma	Australia
Wallaby, western hare	Lagorchestes hirsutus	Australia
Wallaby, yellow-footed	Petrogale xanthopus	Australia
Wombat, hairy-nosed (=Barnard's and Queensland hairy-nosed)	Lasiorhinus krefftii (formerly L. barnardi and L. gillespiel)	Australia
	BIRDS	
Albatross, short-tailed	Diomedea albatrus	Japan
Bristlebird, western	Dasyomis brachypterus longirostris	Australia
Bristlebird, western rufous	Dasyomis broadbenti littoralis	Australia
Caracara, Audobon's crested	Polyborus plancus audubonii	Panama, Cuba
Eagle, Philippine	Pithecophaga jefferyi	Philippines
Falcon, Arctic peregrine	Falco peregrinus tundrius	Central America
Falcon, Eurasian peregrine	Falco peregrinus peregrinus	Europe, Eurasia
Goose, Aleutian Canada	Branta canadensis leucopareia	Japan
Grasswren, Eyrean (flycatcher)	Amytomis goyderi	Australia
Greenshank, Nordmann's	Tringa guttifer	Japan
Honeyeater, helmeted	Meliphaga cassidix	Australia
Ibis, Japanese crested	Nipponia nippon	Japan, Korea
Ibis, northern bald	Geronticus eremita	Southern Europe, Southwestern Asia
Kite, Cuba hook-billed	Chondrohierax uncinatus wilsonii	Cuba
Kite, Everglade snail	Rostrhamus sociabilis plumbeus	Cuba
Tite, Everglade shall		

COMMON NAME	SCIENTIFIC NAME	HISTORIC RANGE
Parakeet, paradise(=beautiful)	Psephotus pulchemmus	Australia
Parakeet, scarlet-chested (=splendid)	Neophema splendida	Australia
Parakeet, turquoise	Neophema pulchella	Australia
Parrot, Australian	Geopsittacus occidentalis	Australia
Parrot, Bahaman or Cuban	Amazona leucocephala	West Indies, Bahamas
Parrot, ground	Pezoporus wallicus	Australia
Pheasant, Palawan peacock	Polyplectron emphanum	Philippines
Pigeon, Mindoro zone-tailed	Ducula mindorensis	Philippines
Quetzel, resplendent	Pharomachrus mocinno	Panama
Scrup-bird, noisy	Atrichornis clamosus	Australia
Shama, Cebu black (thrush)	Copsychus niger cebuensis	Philippines
Stork, oriental white	Ciconia ciconia boyciana	Japan, Korea
Wanderer, plain (collared-hemipode)	Pedionomous torquatus	Australia
Warbler (wood), Bachman's	Vermivora bachmanii	Cuba
	REPTILES	
Crocodile, Philippine	Crocodylus novaeguineae mindorensis	Philippine Islands
Crocodile, saltwater (=estuarine)	Crocodylus porosus	Southeast Asia
Crocodile, Siamese	Crocodylus siamensis	Southeast Asia
Iguana, Cuban ground	Cyclura nubila nubila	Cuba
Lizard, Hierro giant	Gallotia simonyi simonyi	Spain (Canary Islands)
Lizard, Ibiza wall	Podarcis pityusensis	Spain (Balearic Islands)
Turtle, short-necked or western swamp	Pseudemydura umbrina	Australia
	FISHES	ng A rry , , , , , , , , , , , , , , , , , ,
Ala Balik (trout)	Salmo platycephalus	Turkey
Ayumodoki (loach)	Hymenophysa (=Botia) curta	Japan
Cicek (minnow)	Acanthorutilus handlirschi	Turkey
Nekogigi (catfish)	Coreobagrus ichikawai	Japan
Tango, Miyako (Tokyo bitterling)	Tanakia tanago	Japan

ENDANGERED/THREATENED PLANTS

Key tree-cactus	Cereus robinii	Cuba
American hart's-tongue fern	Phyllitis scolopendrium var. americana (=P. japonica) (ssp. americana)	Canada (Ontario)
	(-1. Juponica) (ssp. anicricana)	

COMMON NAME	SCIENTIFIC NAME	HISTORIC RANGE
Pitcher's thistle	Cirsium pitchen	Canada (Ontario)
Lakeside daisy	Hymenoxys acaulis var. glabra	Canada (Ontario)
Houghton's goldenrod	Solidago houghtonii	Canada (Ontario)
Hayun lagu (Guam), Tronkon guafi rota	Serianthes neisonii	Western Pacific Ocean
Dwarf lake iris	Iris facustris	Canada (Ontario)
Small whorled pogonia	Isotria nedeoloides	Canada (Ontario)
Eastern prairie fringed orchid	Platanthera leucophaea	Canada (Ontario, NewBrun- swick)
Furbish lousewort	Pedicularis furbishiae	Canada (New Brunswick)

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Table 5-2

Species Protected in the Republic of Turkey (FGS-Turkey, Table 13-2)

FAMILY/GENUS	SPECIES
STRICTLY	Y PROTECTED FLORA
PTERIDOPHYTA	
ASPITIACEAE	Diplazium caudatum (Cav.) Jeremy
PTERIDACAEAE	Pteris serrulata Forssk
GYMNOAPERMAE	
PINACEAE	Abies nebrodensis (Lojac.) Mattei
ANGIOSPERMAE	
ALISMATACEAE	Alisma wahlenbergii (O.R. Holmberg) Juzepczuk
BERBERIDACAEAE	Gymnospermium altaicum (Pallas) Spach
BORAGINACEAE	Anchusa crispa Viv. Myosotis rehsteineri Wartm. Omphalodes littoralis Lehm. Onosma caespitosum Kotschy Solenanthus albanicus (Degen et al.) Degen Baldacci Symphytum cycladense Pawl.
CAMPANUTACEAE	Campanula sabatia De Not.
CARYPHYLLACEAE	Arenaria lithops Heywoodd ex McNeill Gypsophila papillosa P. Porta Loeflingia taveresiana G. Samp Silene orphanidis Boiss. Silene rothmaleri Pinto de Silva Silene velutina Pourret ex Loisel.
CHENOPODIACEAE	Kochia saxicola Guss. Salicornia veneta Pignatti & Lausi
CISTACEAE	Tuberaria major (Willk.) Pinto da Salva

FAMILY/GENUS	SPECIES
COMPOSITAE	Anacyclus alboranensis Esteve Chueca & Varo Anthemis glaberrima (Rech. f.) Greuter Artemisia granatensis Boiss. Artemisia laciniata Wild. Aster pyrenaeus Desf. ex DC. Aster sibiricus L. Centaurea balaearica J.D. Rodriguez Centaurea heldreichii Halácsy Centaurea horrida Badaro Centaurea lactiflora Halácsy Centaurea linaresii Lazaro Centaurea niederi Heldr. Centaurea peucedanirfolia Boiss. & Orph. Centaurea princeps Boiss & Heldr. Crepis crocifolia Boiss. Meldr. Lamyropsis microcephala (Moris) Dittrich & Greuter Leontodon siculus (Guss.) Finch & Sell Logifia neglecta (SoyWill.) Holub Senecio alboranicus Maire
CONVOLVULACEAE	Convolvulus argyrothamnos Greuter
CRUCIFERAE	Alyssum akamasicum B.L. BurttAlyssum fastigiatum HeywoodArabis kennedyae MeikeBrassica neustriaca BonnetBrassica hilarionis PostBrassica macrocarpa Guss.Braya purpurascens (R.Br.) BungeCoronopus navasii PauDiplotaxis siettiana MaireEnarthocarupus ptericarpus DC.Hutera rupestris P. PortaIberis arbuscula RunemarkIonopsidium acaule (Desf.) ReichenbPtilotrichum pyrenaicum (lapeyr.) BoissRyhynchosinapis johnstonii (G.Samp.) HeywoodSisymbrium matritense P.W.Ball & Heywood
EUPHORBIACEAE	Euphorbia ruscinonensis Boiss.
GRAMINEAE	Stipa bavarica Martinovsky & H. Scholz.
GROSSULARIACEAE	Ribes sardoum Martelli
HYPERICACEAE	Hypericum aciferum (Greuter) N.K.B. Robson
IRIDACEAE	Crocus cyprius Boiss. & Kotschy Crocus hartmannianus Holmboe

Table 5-2	(continued)
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FAMILY/GENUS	SPECIES
LABIATAE	Amaracus cordifolium Montr. & Auch. Micromeria taygetea P.H. Davis Nepeta sphaciotica P.H. Davis Phlomis brevibracteata Turrill Phlomis cypria Post Salvia crassifotia Sibth. & Smith Sideritis cypria Post Thymus camphoratus Hoffmanns. & Link Thymus cephalotos L.
LEGUMINOSAE	Astragalus algarbiensis Coss. ex Bunge Astragalus aquilinus Anazaline Astragalus maritimus Moris Astragalus verrocosus Moris Cytisus aeolicus Guss. ex Lindl. Ononis maweana Ball Oxytropis deflexa (Pallas) DC.
LENTIBULARIACEAE	Pinguicula crystalliana Sibth & Smith
LILIACEAE	Androcymbium rechingeri Greuter Chionodoxa lochiae Meikle Muscari gussonei (Parl.) Tod. Scilla morrisii Meikle
ORCHICACEAE	Ophrys kotschyi Fleishm. & Soó
PAPAVERACEAE	Rupicapnos africana (Lam.) Pomel
PLUMBAGINACEAE	Armeria rouyana Daveau Limonium paradoxum Pugsley Limonium recurvum C.E. Salmon
POLYGONACEAE	Rheum rhaponticum L.
PRIMULACEAE	Primula apennina Widmer Primula egaliksensis Wormsk.
RANUNCULACEAE	Aquilegia cazorlensis Heywood Aquilagia kitabelii Schott Consolida samia P.H. Davis Delphinium caseyi B.L.Burtt Ranunculus kykkoënsis Meikle Ranunculus weyleri Mares
RUBIACEAE	Galium litorale Guss.
SCROPHYLARIACEAE	Antirrhinum charidemi Lange Euphrasia marchesettii Wettst. ex Marches. Linaria algtarviana Chav. Linaria ficalhoana Rouy
SELAGINACEAE	Globularia stygia Orph. ex Boiss
SOLANACEAE	Atropa baetica Willk.
THYMELAEACEAE	Daphne rodriguezii Texidor

FAMILY/GENUS	SPECIES
UMBRELLIFERAE	Angelica heterocarpa Lloyd Angelica palustris (Besser) Hoffmann Bupleurum kakiskalae Greuter Ferula cypria Post Laserpitium longiradium Boiss. Oenanthe conoides Lange
VALERIANACEAE	Valeriana longiflora Willk.
VIOLACEAE	Viola hispida Lam. Viola jaubertiana Mares & Vigineix
STRICTLY PROT	FECTED FAUNA: MAMMALS
INSECTIVORA	
Talpidae	Desmana pyrenaica (Galemys pyrenaicus)
CHIROPTERA	
Microchiroptera	
all species except:	Pipistrellus pipistrellus
RODENTA	
Sciuridae	Citellus citellus
Cricetidae	Cricetus cricetus
Hystricidae	Hystrix cristata
CARNIVORA	
Canidae	Canis lupus Alopex lagopus
Ursidae	all species
Mustelidae	Lutreola (Mustela) lutreola Lutra lutra Gulo gulo
Felidae	Lynx pardina (pardellus) Panthera pardus Panthera tigris Daphne rodriguezii Texidor
Odobaenidae	Odobenus rosmarus
Phocidae	Monachus monachus
ARTIODACTYLA	
Bovidae	Capra aegagrus aegagrus Rupicapra rupicapra ornata Ovibos moschatus
CETACEA	······
Odontoceti	
Delphinidae	Delphinus delphis Tursiops truncatus (tursio)
Phocaenidae	Phocaena phocaena

Table 5-2 (continued)

FAMILY/GENUS	SPECIES
MYSTACOCETI	
Balaenopteridae	Sibbaldus (Balaenoptera) musculus Megaptera novaengliae (longimana, nodosa)
Balaenidae	Eubalaena glacialis Balaena mysticetus
STRICTLY PE	ROTECTED FAUNA: BIRDS
GAVIIFORMES	
Gaviidae	all species
PODICIPEDIFORMES	
Podicipedidae	Podiceps griseigena Podiceps auritus Podiceps nigricollis (caspicus) Podiceps ruficollis
PROCELLARIIFORMES	• • • • • • • • • • • • • • • • • • •
Hydrobatidae	all species
Procellariidae	Puffinus puffinus Procellaria diomedea
PELECANIFORMES	
Phalacrocoracidae	Phalacrocorax pygmaeus
Pelecanidae	all species
CICONIIFORMES	
Ardeidae	Ardea purpurea Casmerodius albus (Egretta alba) Egretta garzetta Ardeola ralloides Bubulcus (Ardeola) ibis Nycticorax nycticorax Ixobryohus minutus Botaurus stellaris
Ciconiidae	all species
Threskiornithidae	all species
PHOENICOPTERIFORMES	
Phoenicopteridae	Phoenicopterus ruber

 Table 5-2 (continued)

FAMILY/GENUS	SPECIES
ANSERIFORMES	
Anatidae	Cygnus oygnus Cygnus bewickii (columbiansus) Anser erythropus Branta leucopsis Brantaa ruficollis Tadorna tadorna Tadorna ferruginea Marmaronetta (Anas) anagustirostris Somateria spectabilis Polystecta stelleri Histrionicus histrionicus Bucephala islandica Mergus albellus Oxyura leucocephala
FALCONIFORMES	all species
GRUIFORMES	
Trunicidae	Turnix sylvatica
Gruidae	all species
Rallidae	Porzana porzana Porzana pusilla Porzana parva Crex crex Porphyrio porphyrio Fulica cristata
CHARADRIIFORMES	
Charadriidae	Hoplopterus spinosus Charadrius histicula Charadrius dubius Charadrius alexandrinus Charadrius leschenaulti Eudromias morinella Aremaria interpres
Scolopacidae	Gallinago media Numenius tenuirostris Tringa stagnatilis Tringa ochropus Tringa glareola Tringa hypoleucos Tringa cinerea Calidris minuta Calidris temmincki Calidris temmincki Calidris alpina Calidris alpina Calidris alpina Limicola falcinellus

(continued)

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Table 5-2	(continued)
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FAMILY/GENUS	SPECIES		
Recurvirostridae	all species		
Phalaropidae	all species		
Burhinidae	Burhinus oedicnemus		
Glareolidae	all species		
Laridae	Pagophila eburnea Larus eburnea Larus melanocephalus Larus genei Larus minutus Larus (Xenia) sabini Chlidonias nigra Chlidonias leucoptera Chlidonias hybrida Gelochelidon nilotica Hydroprogne caspia Sterna hirundo Sterna paradisaea (macrura) Sterna dougalli Sterna albifrons Sterna sandvicensis		
COLUMBIFORMES			
Ptericlidae ·	all species		
CUCULIFORMES	L		
Cuculidae	Clamator glandarius		
STRIGIFORMES	all species		
CAPRIMULGIFORMES			
Caprimulgidae	all species		
APODIFORMES			
Apodidae	Apus pallidus Apus melba Apus caffer		
CORACIIFORMES			
Alcedinidae	Alcedo atthis		
Meropidae	Merops apiaster		
Coraciidae	Coracias garrulus		
Upupidae	Upupa epops		
PICIFORMES all species			

FAMILY/GENUS	SPECIES		
PASSERIFORMES			
Alaudidae	Calandrella brachydactyla Calandrella rufescens Melanocorypha calandra Melanocorypha leucoptera Melanocorypha yeltoniensis Galerida theklae Eremophila alpestris		
Hirundinidae	all species		
Motacillidae	all species		
Laniidae	all species		
Bombycillidae	Bombycilla garrulus		
Cinclidae	Cinclus cinclus		
Troglodytidae	Troglodytes troglodytes		
Prunellidae	all species		
Muscicapidae	all species		
Turdinae	Saxicola rubeter Saxicola torquatus Oenanthe pleschanka (leucomela) Oenanthe hispanica Oenanthe isabellina Oenanthe leucura Cercotrichas galactotes Monticola solitarius Phoenicurus phoenicurus Erithacus rubecula Luscinia megarhynchos Luscinia luscinia Luscinia luscinia State and a species		
Sylviinae	all species		
Regulinae	all species		
Muscicapinae	all species		
Paradoxornithinae	Panurus biarmicus		
Paridae	all species		
Sittidae	all species		
Certhiidae	all species		

Table 5-2	(continued)
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FAMILY/GENUS	SPECIES		
Emberizidae	Emberiza citrinella Emberiza leucocephala Emberiza cirlus Emberiza cineracea Emberiza caesia Emberiza cia Emberiza schoeniculus Emberiza melanocephala Emberiza aureola Emberiza rustica Plectrophenax nivalis		
Fringillidae	Calcarius lapponicus Calcarius lapponicus Carduelis chloris Carduelis carduelis Carduelis flavirostris Carduelis flavirostris Carduelis spinus Carduelis cannabina Carduelis cannabina Carduelis flammea Carduelis hornemanni Serinus citrinella Serinus citrinella Serinus serinus Loxia curvirostra Loxia curvirostra Loxia pityopsittacus Loxia leucoptera Pinicola enucleator Carpodacus erythrinus Rhodopechys githagineus Coccothraustes coccothraustes		
Sturnidae	Petronia petronia Montrifringilla nivalis Sturnus unicolor		
	Sturnus rosus		
Oriolidae Corvidae	Oriolus oriolus Perisoreus infaustus Cyanopica cyanus Nucifraga caryocatactes Pyrrhocorax pyrrhocorax Pyrrhocorax graculus		
STRICTLY PROT	FECTED FAUNA: REPTILES		
TESTUDINES			
Testudinidae	Testudo hermanni Testudo graeca Testudo marginata		
Emydidae	Emys orbicularis Mauremys caspica		
	Dermochelys coriacea		

FAMILY/GENUS	SPECIES		
Cheloniidae	Caretta caretta Lipidochelys (olivacea) kempi Chelonia mydas		
SAURIA			
Gekkonidae	Cyrtodactylus kotschyi		
Chamaeleonitidae	Chamaeleo chamaeleon		
Lacertidae	Algyroides marchi Lacerta lepida Lacerta parva Lacerta simonyi Lacerta princeps Lacerta viridis Podarcis muralis Podarcis lilfordi Podarcis sicula Podarcis filfolensis		
Scincidae	Ablepharus kitaibelii		
OPHIDIA			
Colubridae	Coluber hippocrepis Elaphe situla Elaphe quatuorlineata Elaphe longissima Coronella austriaca		
Viperidae	Vipera latasti Vipera ammodytes Vipera xanthina Vipera lebetina Vipera kaznakovi		
STRICTLY PROT	ECTED FAUNA: AMPHIBIANS		
CAUDATA			
Salamondridae Salamandra (Mertensiella) luschani Salamandrina terdigitata Chioglossa lusitanica Triturus cristatus			
Proteidae	Proteus anguinus		
ANURA			
Discoglossidae	Bombina variegata Bombina bombina Alytes obstetricans Alytes cisternasii		
Pelobatidae	Pelabates cultripes Pelabates fuscus		
Bufonidae	Bufo calamita Bufo viridis		

Table 5-2 (continued)

Table 5-2 (continued)

FAMILY/GENUS	SPECIES	
Hylidae	Hyla arborea	
Ranidae	Rana arvalis Rana dalmatina Rana latastei	

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INSTALLATI	ON:	COMPLIANCE CATEGORY:	DATE:	REVIEWER(S)
		NATURAL RESOURCES MANAGEMENT Turkey ECAMP		
STATUS		REVIEWER COMMENT	<u>г</u> с.	
NA C R	RMA	REVIEWER COMMENTS:		

SECTION 6

OTHER ENVIRONMENTAL ISSUES

Turkey ECAMP

SECTION 6

OTHER ENVIRONMENTAL ISSUES

A. Applicability of this Section

This section applies to all U.S. Air Force (USAF) installations overseas. Currently, this section contains major subsections that address environmental impacts, environmental noise, cleanup (restoration), the Pollution Prevention Program, and environmental program management in general.

The regulatory requirements in this section are based on the *Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey* (FGS-Turkey), Department of Defense (DOD) regulations, and Air Force Instructions (AFIs) that apply at overseas installations. Management practices (MPs) are derived from U.S. Environmental Protection Agency (USEPA) regulations that are not mandatory overseas but are important to follow to preserve the health and safety of Air Force (AF) employees and protect the environment.

Environmental Impacts

The topic of this subsection is the AF's Environmental Impact Analysis Process (EIAP). The subsection addresses FGS-Turkey and AF standards the goal of which is to ensure that decision makers are presented with sufficient relevant analysis to understand and evaluate the impact on the environment of the actions they approve and that they receive this information at appropriate times in the decision-making process.

Environmental Noise

This subsection contains standards to control environmental noise within installations. It is limited to measures allowing reasonable internal DOD planning efforts, but it does not address procedures for operating aircraft or ships, which are outside the scope of DOD Directive 6050.16.

Cleanup (Restoration)

This subsection contains standards to ensure that cleanup projects at sites contaminated by AF operations are executed to the appropriate point.

Pollution Prevention

The USEPA has developed a hierarchy of options regarding environmental management. The highest priority in this hierarchy of management methods is source reduction as a means of preventing pollution. Source reduction includes reuse or closed-loop recycling. The hierarchy then proceeds to recycling, treatment, and disposal as management methods of decreasing priority.

The concept of pollution prevention, as defined by the USEPA, is the maximum feasible reduction at the source of all wastes generated. This reduction is accomplished by the judicious use of resources through source reduction, materials substitution, energy efficiency, reuse of input materials during production, and reduced water consumption.

Some of the benefits of pollution prevention are:

- 1. reducing operating costs (materials, waste management and disposal, production, energy, and facility cleanup)
- 2. reducing risk of liability
- 3. enhancing public image
- 4. protecting the environment and public health.

In Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, 30 November 1993, the AF explicitly makes Pollution Prevention one of the four pillars of its Environmental Quality Program. The AF will eliminate pollution from its activities wherever possible. It will reduce the generation of waste and the procurement of environmentally damaging materials to as near zero as feasible through material substitution, process change, and other techniques. It will prevent at the source, to the greatest extent possible, environmentally harmful discharges to the air, land, surface water, and groundwater. If the generation of waste cannot be prevented at the source, spent material and waste will be reused or recycled whenever possible. What cannot be reused or recycled will be disposed of in an environmentally sound manner. Both waste disposal and releases to the environment are permitted only after all other pollution prevention alternatives have been exhausted.

The regulatory requirements in this subsection are based on the AFIs that address pollution prevention. MPs are derived from USEPA regulations that are not mandatory overseas but are important to the protection of the environment.

Program Management

This subsection contains standards relevant to weapons ranges, the A-106 Pollution Abatement Plan, certain reporting requirements, the installation's Environmental Protection Committee (EPC), standards addressing the management of environment-related data in the Work Information Management System-Environmental Subsystem (WIMS-ES), and deployments of forces to AF installations overseas.

B. DOD Directives/Instructions

Environmental Impacts

- Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 17 contains procedures for informing decision makers of environmental considerations when authorizing or approving major DOD actions.
- DOD Directive (DODD) 6050.7, Environmental Effects Abroad of Major Defense Department Actions, 31 March 1979, also contains EIAP requirements for overseas installations.

Environmental Noise

Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 10, contains criteria for controlling environmental noise on installations. Cleanup (Restoration)

• None.

Pollution Prevention

• DOD Instruction (DODI) 4715.4, *Pollution Prevention*, 18 June 1996, implements policy, assigns responsibility, and prescribes procedures for implementation of pollution prevention programs throughout the DOD. Only those portions of the Instruction that are applicable outside the United States are included here.

Program Management

• None.

C. U.S. Air Force Documents

Environmental Impacts

- AFI 32-7061, *Environmental Impact Analysis Process*, 24 January 1995, contains requirements that apply to EIAP overseas.
- HQ USAF/CEV Policy Letter, *MAJCOM EPC Coordination of EIAP Documents*, 26 August 1994, requires documentation indicating prior Major Command (MAJCOM) EPC coordination or approval to accompany EIAP documents sent to them for senior staff approval or signature.

Environmental Noise

• AFI 13-212, Volume 1, *Weapons Ranges*, 28 July 1994, requires that installations with air-to-surface weapons ranges address those ranges in plans required by environmental regulations.

Cleanup (Restoration)

• AFI 32-7006, *Environmental Program in Foreign Countries*, 29 April 1994, contains requirements relevant to the cleanup of overseas sites that have been contaminated in the course of AF actions.

Pollution Prevention

- AFI 32-7080, *Pollution Prevention Program*, 12 May 1994, outlines the requirements for the AF's Pollution Prevention Program. It provides instruction in the areas of planning, use of ozone-depleting chemicals (ODCs), hazardous substance management and minimization, solid waste management, nonpoint source pollution, and air pollutant emissions.
- AF Policy Letter, *Air Force Ban on Purchases of ODCs*, 7 January 1993, governs the purchase, use, and management of controlled ODCs. It outlines the ODCs and equipment that use them that cannot be purchased, and it outlines the steps that should be taken to replace ODCs currently in use.
- AF Pollution Prevention Strategy, 24 July 1995, details the goals and strategies promoted by the AF for pollution prevention.

Program Management

- AFI 13-212, Volume I, *Weapons Ranges*, 28 July 1994, environmental requirements for bases that operate air-to-surface weapons ranges.
- AFI 32-7001, *Environmental Budgeting*, 9 May 1994, provides guidance on identifying, developing, and processing requirements to meet environmental standards at AF installations.
- AFI 32-7002, *Environmental Information Management System*, 31 May 1994, provides guidance and procedures to standardize the use of WIMS-ES.
- AFI 32-7005, *Environmental Protection Committees*, 25 February 1994, provides guidance on the make-up and responsibilities of the installation's EPC.
- AFI 32-7006, *Environmental Program in Foreign Countries*, 29 April 1994, requires installations to cooperate with host nation regulatory authorities. Further, it requires that copies of host nation regulatory authority inspection reports be forwarded to HQ USAF/CE and that receipt or notification of the imminent receipt of findings involving media attention or off-base impacts be reported to specific authorities. It also imposes on installations requirements for planning prior to receiving deployments.

D. Responsibility for Compliance

Environmental Impacts

- The Base Civil Engineer (BCE) provides support to the Environmental Planning Function (EPF), including managing and getting the technical analyses necessary to support the EIAP.
- Bioenvironmental Engineering Services (BES) provides technical assistance to the EPF concerning environmental quality standards, effects, and monitoring capabilities relating to the action(s) being assessed.
- The EPC reviews and approves or disapproves environmental documents prepared by the EPF during the EIAP.
- The Staff Judge Advocate (SJA) advises the EPF and EPC of legal issues regarding environmental documents.
- The Public Affairs Officer (PAO) reviews environmental documents for public affairs sufficiency and advises the EPF on issues to be addressed in environmental analyses (EAs).
- The Proponent Activity is responsible for providing a complete description of the proposed action and alternatives (DOPAA) and for identifying key decision points and assisting in making sure that the EIAP is properly phased so that the relevant environmental documents are available to the decision maker.

Environmental Noise

• The Range Management Agency is responsible for activities at an air-to-ground range, including planning for the range.

Cleanup (Restoration)

- The BCE is normally responsible for cleanup. However, this responsibility may be assigned to the installation's Environmental Management Office (EMO) if one has been established.
- The BES is responsible for providing technical support in risk analysis, quality assurance or quality control (QA/QC), worker health and safety, and other areas.
- The SJA is responsible for providing legal and negotiation support.

Pollution Prevention

- The Installation Commander (IC) must establish and maintain an active program to survey the use, generation, and disposal of hazardous and radioactive waste. The commander must identify requirements and execute the programs to comply with AF policy.
- The Deputy Commander for Maintenance (DCM) ensures that nonhazardous/nontoxic materials are used where possible, maintains a list of hazardous materials used in the work area by shop and maintenance related task, ensures that personnel are properly trained in ordering, using, handling, controlling, and storing hazardous materials and wastes. DCM is also responsible for ensuring that hazardous waste is properly labeled and for notifying the appropriate headquarters when a nonhazardous substitute can be used. In addition, he/she works with the civil and bioenvironmental engineers to develop the installation's waste management plan.
- The BCE is responsible for the maintenance and operation of incinerators, fuel burners (boilers), and all installed petroleum storage and dispensing systems. The BCE is also responsible for the storage and handling of all hazardous materials and fuels used by civil engineering shops. The BCE or designated EMO develops installation- specific policy for all aspects of hazardous waste and pollution prevention management for all activities on the installation (including AF and non-AF tenants). The BCE/EMO also manages the pollution prevention program and serves as the Office of Primary Responsibility (OPR) for developing and implementing the pollution prevention plan.
- The BES provides technical expertise on hazardous waste identification and, along with the Environmental Manager (EM) and the EPC, establishes the baseline inventory of the Industrial Toxic Project (ITP) targeted chemicals (see Table 6-1). The BES identifies pollution prevention opportunities based on workplace surveys and recommends substitute processes. The BES reviews all substitutions to ensure that substituted materials do not introduce new hazards.
- The Supply Officer has primary responsibility to receive, store, and issue all items ordered. He/she serves as the equipment approval authority, administers the supply improvement program, provides technical guidance and assistance on supply matters to agencies across the installation, and serves as the primary stock fund manager.
- The EPC is comprised of representatives from all activities involved in pollution prevention management. It reviews and coordinates the installation commander's pollution prevention management

program. The committee reviews summary data on waste generation and personnel exposure. The EPC helps with establishing the baseline inventory of ITP targeted chemicals. It should also adopt a policy recommending against the procurement of hazardous materials containing any USEPA ITP chemicals.

- The EM is responsible for managing the installation hazardous waste (HW) management program. The EM, along with the BES and the EPC, establishes the baseline inventory of ITP chemical quantities. The EM then tracks the issue of these chemicals and sends the information to the MAJCOM.
- Hazardous Waste Generators manage hazardous waste in their custody. Management includes proper storage, inspection, recordkeeping, labeling of containers, and transfer for disposal.
- The Water and Waste Shop within Base Civil Engineering has responsibility for operations and maintenance of treatment plants, pretreatment facilities, pump stations, oil/water separators, and other associated facilities around the installation.

Program Management

A-106 Pollution Abatement Plan

- The Base Environmental Coordinator (BEC) is responsible for managing the A-106 program, including updating the current plan, inputting new projects, and coordinating with the Civil Engineering Programmer to ensure projects are included in the Civil Engineering Contract Reporting System (CECORS) or the Programming Design and Construction (PDC) System.
- The Civil Engineering Programmer (CEP) is responsible for getting projects into the CECORS or the PDC system.
- The EPC is responsible for coordinating and approving the A-106 Plan.

WIMS-ES

• The BCE or the EM will coordinate the input of data into WIMS-ES.

Reporting Requirements and Deployments

• AFI 32-7006 does not designate the parties responsible for actions required by these sections.

E. Definitions

- Affirmative Procurement Federal agencies must establish programs to encourage purchase of products containing recycled materials, in particular, USEPA Guideline Items. Affirmative procurement programs must establish preference for products containing recycled material, must include a promotion plan to place emphasis on buying recycled, and must have procedures for obtaining and verifying estimates and certifications of recycled content (AFI 32-7080, Attachment 1, Section C).
- Alternatives ways of reducing adverse effects of hazardous materials (HM). Alternatives, as applied to HM decision making, include, but are not limited to, such possibilities as substituting less hazardous or nonhazardous material; redesigning a component such that HM is not needed in its

manufacture, use, or maintenance; modifying processes or procedures; restricting users; consumptive use; on-demand supply; direct ordering; extending shelf life; regenerating spent material; downgrading and reuse of spent material; use of waste as raw material in other manufacturing and combinations of those factors. Alternatives are to be analyzed in a could cost approach, considering what the lowest amount the decision could cost by overcoming barriers to getting the job done, while ensuring protection of human health and the environment (AFI 32-7080, Attachment 1, Section C).

- A-Weighted Sound Level calculation of noise exposure that emphasizes sound in the frequency range where most speech information occurs, and thus closely resembles the frequency response of the human ear. Sound measures that are measured on the A-scale are abbreviated dB(A) (FGS-Turkey 20).
- Baseline quantified starting points from which progress is measured. For the purposes of this instruction, baselines are quantities of material purchased or generated over a specified period of time (AFI 32-7080, Attachment 1, Section C).
- *Categorical Exclusion* (CATEX) a class of actions, defined and approved in accordance with Executive Order 12114, DODD 6050.7 and service regulations, that normally do not, individually or cumulatively, significantly harm the environment and that require no further environmental review beyond appropriate documentation of the decision to apply the exclusion (FGS-Turkey 20).

(NOTE: Attachment 2 to AFI 32-7061 contains an extensive list of actions that are categorically excluded in the absence of unique circumstances.)

- Characteristic Waste a waste that exhibits any of the characteristics listed in 40 Code of Federal Regulations (CFR) 261, Subpart C (i.e., toxicity, corrosiveness, ignitability, reactivity) (AFI 32-7080, Attachment 1, Section C).
- Cost Factors the expense and cost avoidance associated with hazardous materials that may be reduced to monetary terms, which includes future liability. Cost factors refer to direct and indirect costs attributable to hazardous materials that are encountered in operations such as acquisition, manufacture, supply use, supply, use, storage inventory control, treatment, recycling, emission control, training, work place safety, labeling, hazard assessments, engineering controls, personal protective equipment, medical monitoring, regulatory overhead, spill contingency, disposal, remedial action and liability (AFI 32-7080, Attachment 1, Section C).
- Day-Night Average Sound Level (L_{dn}) a measure of installation noise exposure expressed in a single number ("xx L_{dn}" as in 55 L_{dn}) that is obtained by adding a 10 dB penalty to nighttime sound levels (2200-0700) to account for increased annoyance caused by noise during these hours (FGS-Turkey 20).
- *Decibel* (dB) the unit of sound pressure is symbolically represented as dB. Sound pressure is the amplitude or measure of the difference between atmospheric pressure (with no sound present) and total pressure (with sound present). The decibel scale is a logarithmic scale (FGS-Turkey 20).
- Description of Proposed Action and Alternatives (DOPAA) an AF document that is the framework for assessing the environmental impact of a proposal. It describes the purpose and need for the action, the alternatives to be considered, and the rationale used to arrive at the proposed action (AFI 32-7061, Attachment 1).

- *Economic Analysis* an evaluation of the costs associated with the use of hazardous materials and potential alternatives. An economic analysis is not a specific, step-by-step procedure that can be applied by rote to all cases of analyzing whether to use a hazardous material. Rather, organizations shall be guided by basic principles of economics and informed judgment (AFI 32-7080, Attachment 1, Section C).
- *Environmental Assessment* a concise analysis to assist DOD components in determining whether there is a potential for significant environmental impacts associated with the proposed action and whether an environmental impact statement is required (FGS-Turkey 20).
- Environmental Impact Statement (EIS) an analysis of the likely environmental consequences of a proposal for a major Federal action that is to be considered by DOD components in deciding whether to approve the proposal. It includes a review of the affected environment, a description of any adverse environmental effects that cannot be avoided if the proposal is adopted, alternatives to the proposed action (including a no-action alternative), actions taken to avoid environmental harm or otherwise to better the environment, and environmental considerations and actions by the other participating nations, bodies, or organizations (FGS-Turkey 20).
- *Environmental Manager (EM)* the Base environmental management function supervisor or designated representative. Synonymous with the term Environmental Coordinator (AFI 32-7080, Attachment 1, Section C).
- Environmental Review an analysis of the likely environmental consequences of the action that is to be considered by DOD components in the decision-making process. It includes a review of the affected environment, actions taken to avoid environmental harm or otherwise to better the environment, and environmental considerations and actions by the other participating nations, bodies, or organizations. Environmental reviews are prepared either unilaterally by DOD or in conjunction with another U.S. Agency but do not include foreign government participation (FGS-Turkey 20).
- Environmental Study an analysis of the likely environmental consequences of the action that is to be considered by DOD components in the decision-making process. It includes a review of the affected environment, actions taken to avoid environmental harm or otherwise to better the environment, and environmental considerations and actions by the other participating nations, bodies, or organizations. Environmental studies are prepared by the United States in conjunction with one or more foreign nations or by an international body or organization in which the United States is a member or participant (FGS-Turkey 20).
- *Environmentally Preferable* products or services that are less harmful to human health and the environment to use, reuse, operate and maintain, and dispose of in comparison with competing products or services of equal value (AFI 32-7080, Attachment 1, Section C).
- *Equivalent Level* (L_{eq}) the equivalent steady-state sound that, in a stated period of time, would contain the same acoustic energy as the time-varying sound during the same period (FGS-Turkey 20).
- *Excluded Materials* excluded items may not be sold through a qualified recycling program (QRP), and the proceeds from their sale shall not be returned to a QRP. Excluded items include, but are not limited to: (DODI 4715.4, Enclosure 3):
 - a. government-furnished material
 - b. precious metal bearing scrap

- c. hazardous waste (including household hazardous waste)
- d. ozone-depleting substances (ODS)
- e. electrical components
- f. unopened containers of solvents, paints, or oil
- g. fuel
- h. material that can be sold (as is) as a usable item
- i. repairable items that may be used again for their original purposes or functions, e.g., used vehicles, vehicle or machine parts, etc.
- j. ships, aircraft, weapons, and other material required to be demilitarized or mutilated, and scrap resulting from demilitarization
- k. all Munitions List Items and Strategic List Items as defined in DOD 4160.21-M-1, except firing range expended brass and mixed metals gleaned from firing range cleanup
- 1. types of surplus personal property whose sales proceeds must be deposited to accounts other than a QRP per 32 CFR 172, Appendix B
 - 1. scrap generated from Defense Business Operations Fund (DBOF) activities
 - 2. usable personal property purchased by DBOF activities
 - 3. property purchased with commissary surcharge funds
 - 4. automatic data processing equipment owned by the General Services Administration
 - 5. property purchased for the Military Assistance Program or purchased with Foreign Military Sales Administrative funds
 - 6. Coast Guard property
 - 7. property owned by nonappropriated fund activities
 - 8. lost, abandoned, or unclaimed privately owned personal property
 - 9. property owned by a country or international organization
 - 10.bones, fats, and meat trimmings generated by a commissary.
- *Federal Action* an action that is implemented or funded directly by the U.S. government. It does not include actions in which the United States participates in an advisory information gathering, representational, or diplomatic capacity, nor does it include actions taken by a foreign government in a foreign country in which the United States is a beneficiary of the action or actions in which foreign governments use funds derived indirectly from the United States (FGS-Turkey 20).
- *Global Commons* geographic areas that are outside the jurisdiction of any nation, and include the oceans outside territorial limits and Antarctica. Global commons do not include contiguous zones and fisheries zones of foreign nations (DODD 6050.7, para C(4)).
- Hazardous Materials any substances or materials that pose a threat to human health or the environment typically due to their toxic, corrosive, ignitable, explosive, or chemically reactive nature. More specific definitions may be found in various Federal regulations that implement statutes (i.e., Hazardous Material Transportation Act, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)) (AFI 32-7080, Attachment 1, Section C).
- *Hazardous Material Pharmacy* single point control of hazardous material (AFI 32-7080, Attachment 1, Section C).
- *Hazardous Waste* any waste by-products of society that can pose a substantial or potential hazard to human health or the environment when improperly managed; possess at least one of five characteristics (toxic, corrosive, ignitable, explosive, or chemically reactive) or are listed in 40 CFR 261.3 or applicable state or local waste management regulations (AFI 32-7080, Attachment 1, Section C).

- *Hazardous Waste Characterization* the identification, description, and quantification of a hazardous waste stream (AFI 32-7080, Attachment 1, Section C).
- Level 1 Projects and Services in the context of the A-106 Pollution Abatement Plan (AFI 32-7001, para 3.4.2.1.1):
 - 1. correct conditions out of compliance with the FGS or the Overseas Environmental Baseline Guidance Document (OEBGD) if there are no FGS (see AFI 32-7006)
 - 2. restore contaminated sites posing imminent and substantial endangerment to human health and safety
 - 3. restore contaminated sites as needed to sustain current operations.
- Level 2 Projects and Services in the context of the A-106 Pollution Abatement Plan, these address (AFI 32-7001, para 3.4.2.2.1):
 - 1. conditions that will be out of compliance with future requirements of international agreements such as treaties, Status of Forces Agreements (SOFAs), or bilateral agreements
 - 2. conditions that will be out of compliance with future FGS requirements.
- Level 3 Projects and Services in the context of the A-106 Pollution Abatement Plan, these projects and services enhance the environment beyond current and future FGS requirements. (AFI 32-7001, para 3.4.2.2)

(NOTE: Do not use U.S. funds to restore contaminated sites beyond that needed to eliminate imminent and substantial endangerment to human health and safety or sustain current operations (unless required by international agreement).)

- Life Cycle Economic Analysis an evaluation of the costs associated with the use of hazardous materials and potential alternatives over the life of the investment or hazardous material. The analysis is not a specific, step-by-step procedure that can be applied by rote to all cases. Analysis shall be guided by basic principles of economics and informed judgement (AFI 32-7080, Attachment 1, Section C).
- Life Cycle of Hazardous Material the period starting when the use or potential use of hazardous material is first encountered and extending as long as the actual material or its after effects, such as a discarded residual in a landfill, have a bearing on cost. In the case of weapon system acquisition, the life cycle starts when the system is first envisioned. Effects of the use of hazardous material on later operations and maintenance are to be considered. This also holds true for a new use of a hazardous material. Where the hazardous material is already in general use, the life cycle starts when the material is first encountered by any organization that must deal with it (AFI 32-7080, Attachment 1, Section C).
- *Major Action* an action involving substantial expenditures of time, money, or resources, that affects the environment on a large geographic scale or has substantial environmental effects on a more limited geographic area, and that is substantially different or a significant departure from other actions previously analyzed with respect to environmental considerations and approved, with which the action under consideration may be associated. A deployment of units, ships, aircraft, or mobile military equipment that does not involve significant changes to the physical environment and that does not require additional support facilities that would significantly change the physical environment is not a major action for the purposes of this section (FGS-Turkey 20).

- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Media* the term referring to air, land, water, and groundwater (AFI 32-7080, Attachment 1, Section C).
- *Municipal Solid Waste* (MSW) trash wastes generated by administrative and domestic activities. MSW does not include hazardous wastes (AFI 32-7080, Attachment 1, Section C).
- Negative Decision a record of decision not to prepare environmental analyses (FGS-Turkey 20).
- Nonpoint or Nonstationary Source (NPS) Pollution a diffuse source of pollution that does not discharge through a single point, such as (AFI 32-7080, Attachment 1, Section C):
 - 1. for water runoff from construction activities and agricultural, silvicultural, urban areas, and industrial areas including airfield operating areas
 - 2. for air aircraft test stands, vehicles, aerospace ground equipment (AGE), and aircraft operations.
- Opportunity Assessment a systematic procedure to identify and assess ways to prevent pollution by reducing or eliminating wastes (AFI 32-7080, Attachment 1, Section C).
- Other Qualified Recyclable Program Materials materials that fit neither the definition of recyclable materials nor the definition of excluded materials (DODI 4715.4, Enclosure 3).
- Ozone-depleting Chemicals (ODCs) chlorofluorocarbons, halons, and other substances that deplete the stratospheric ozone layer as classified by the Clean Air Act (CAA) Amendment of 1990 (AFI 32-7080, Attachment 1, Section C).
- *Pollution Prevention* all the actions necessary, to include use of processes, practices, products or management actions that eliminate or reduce undesirable impacts on human health and the environment. These actions are a hierarchy of source reduction, recycling, treatment, and disposal or means source reduction and other practices that reduce or eliminate the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other natural resources, and the protection of natural resources (AFI 32-7080, Attachment 1, Section C).
- *Proponent* any office, unit, or activity that proposes to initiate an action (AFI 32-7061, Attachment 1).
- *Qualified Recycling Program* organized operations that require concerted efforts to divert or recover scrap or waste, as well as efforts to identify, segregate, and maintain the integrity of the recyclable materials in order to maintain or enhance their marketability. If the program is administered by a DOD component, a QRP includes adherence to a control process providing accountability for all materials processed through program operations (DODI 4715.4, Enclosure 3).
- *Recyclable Materials* recyclable materials can include, but are not limited to: high-quality paper and paper products, mixed paper, newspaper, cardboard, plastic, metal cans, glass, used oil (except when hazardous waste), batteries, and tires. In addition, scrap (including ferrous and nonferrous scrap) and firing range expended brass and mixed metals gleaned from firing range cleanup that do not require demilitarization may be included in a QRP (DODI 4715.4, Enclosure 3).



- *Recycling* the series of activities, including collection, separation, and processing, by which products or other materials are recovered from the solid waste stream for use in the form of raw materials in the manufacture of new products other than fuel for producing heat or power by combustion (DODI 4715.4, Enclosure 3).
- *Recycling* the use, reclamation and reuse of a material. Use/reuse includes return of the recovered waste to the original process or when the waste is substituted for a raw material in another process. Waste reclamation includes processing of residual waste to recover a useful product and generation of waste material (AFI 32-7080, Attachment 1, Section C).
- Sound Exposure Level (SEL) a measure of single noise events, such as ground runup. It is the level, in decibels, of the time integral of squared A-weighted sound pressure over a given time period or event, with reference to the square of the standard reference sound pressure of 20 micropascals (μPa) and a reference duration of 1 s (FGS-Turkey 20).
- Source Reduction any practice that reduces or eliminates any hazardous material, pollutant, or contaminant entering any waste stream or otherwise residual waste generation at the source, usually within the generation process. The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, feedstock substitutions, improvements in feedstock purity, shipping and packaging modifications, improvements in housekeeping, maintenance, training, and management practices, increases in machinery efficiency, and recycling within a process (AFI 32-7080, Attachment 1, Section C).
- Toxic Chemicals those chemicals listed in Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) as of 1 December 1993 (AFI 32-7080, Attachment 1, Section C).
- Volatile Organic Compound (VOC) organic substances that react rapidly with NO_x in the air and in the presence of sunlight to form oxidants or smog (AFI 32-7080, Attachment 1, Section C).

OTHER ENVIRONMENTAL ISSUES

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
Environmental Impacts All Installations Environmental Analyses	6-1 through 6-6 6-7 through 6-15	(1)(2)(3)(4)(14) (1)
Environmental Noise All Installations	6-16 through 6-24	(1)(3)(4)(5)(6)
Cleanup (Restoration)	6-25 through 6-28	(1)(3)
Pollution Prevention (P2) All Installations Opportunity Assessments P2 Management Plan ODCs Hazardous Substances Solid Waste	6-29 and 6-30 6-31 6-32 and 6-33 6-34 through 6-43 6-44 through 6-48 6-49 through 6-53	(1)(3)(7) (8)(11) (8)(10)(11) (1)(2)(7)(8)(9)(11)(12) (1)(7)(8)(9)(11) (1)(7)(8)(9)(11)(12)
Program Management All Installations Weapons Ranges A-106 EPC WIMS-ES Deployments	6-54 and 6-55 6-56 and 6-57 6-58 and 6-59 6-60 through 6-62 6-63 and 6-64 6-65 and 6-66	(1)(3) (1)(3)(13) (1)(3) (1)(11) (1)(3) (1)

(a) CONTACT/LOCATION CODE:

- (1) BCE (Base Civil Engineer (Environmental Planning))
- (2) BES (Bioenvironmental Engineering Services)
- (3) Base Staff Judge Advocate
- (4) PAO (Public Affairs Officer)
- (5) Deputy for Operations (Airspace Manager)
- (6) Range Operating Agency
- (7) Supply Officer
- (8) Environmental Manager
- (9) Generating Activities (Including Accumulation Point Managers/Operators)
- (10) Water and Waste Shop
- (11) EPC (Environmental Protection Committee)
- (12) Contracting
- (13) Natural and Cultural Resources Managers (or Environmental Coordinator)
- (14) Base Safety Officer

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OTHER ENVIRONMENTAL ISSUES

Records To Review

Environmental Impacts

- Documentation related to EIAP
- Documentation of finding of no adverse effect (for construction activities)
- EAs

Environmental Noise

- Installation Master Plan Document
- Log of complaints from the local community

Cleanup (Restoration)

• Documentation related to cleanup (restoration)

Pollution Prevention

- Inventory records
- Supply/distribution procedures
- Opportunity assessments
- Baseline records
- Pollution Prevention Management Plan
- · Records of any waste reduction/pollution prevention programs
- Records of resource recovery practices including the sale of materials for the purpose of recycling
- Equipment maintenance and inspection records
- Records of waste recovery equipment (i.e., solvent distillation equipment)
- Plans and procedures applicable to air pollution control

Program Management

- A-106 Pollution Abatement Plan
- Exercise- or contingency-specific environment plans, if any

Physical Features To Inspect

Environmental Impacts

• None

Environmental Noise

- Power generators or other noise sources
- Emergency generators
- Test tracks

Cleanup (Restoration)

• None

Pollution Prevention

- Shop activities
- Hazardous materials and wastes storage areas
- Fire fighting equipment
- Vehicle maintenance areas/motor pool
- Supply area
- Waste recovery areas
- Reuse facility
- VOC sources
- Recycling area

Program Management

• None

People To Interview

Environmental Impacts

- BCE (Environmental Planning)
- BES (Bioenvironmental Engineering Services)
- Base Staff Judge Advocate
- PAO (Public Affairs Officer)
- Base Safety Officer

Environmental Noise

- BCE (Environmental Planning)
- Deputy for Operations (Airspace Manager)
- PAO (Public Affairs Officer)
- Range Operating Agency

Cleanup (Restoration)

- BCE (Environmental Planning)
- BES (Bioenvironmental Engineering Services)

Pollution Prevention

- BCE (Base Civil Engineer)
- Supply Officer
- BES (Bioenvironmental Engineering Services)
- Environmental Manager
- Generation Activities (Including Accumulation Point Managers/Operators)
- Water and Waste Shop
- EPC (Environmental Protection Committee)
- Contracting

Program Management

- BCE (Environmental Planning)
- Natural and Cultural Resources Managers (or Environmental Coordinator)

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
ENVIRONMENTAL IMPACTS	
All Installations	
6-1. Copies of all relevant DOD directives/ instructions, USAF direc- tives, and guidance docu- ments should be main- tained at the installation (MP).	 Verify that the Base Staff Judge Advocate has available the host-nation FGS and relevant USAF documents. (3) (NOTE: Among the relevant documents are the following: AFI 32-7061, The Environmental Impact Analysis Process, 24 January 1995 DODD 6050.7, Environmental Effects Abroad of Major Department of Defense Actions, 31 March 1979 HQ USAF/CEV Policy Letter, MAJCOM EPC Coordination of EIAP Documents, 26 August 1994 USAFE/CE Message, Policy Change, EIAP, MILCON Projects, 1009000, November 1994.)
6-2. Installations must meet regulatory requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether new regulations concerning EIAP have been issued since th finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations.
	Verify that the installation has an EPF. (1)(3)
have an Environmental Planning Function (EPF) (AFI 32-7061, para 1.3.4).	(NOTE: The EPF is the interdisciplinary staff responsible for the EIAP.)

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-3. (continued)	Verify that the EPF:
	 assists the proponent in preparing a DOPAA evaluates proposed actions and completes Sections II and III of AF Form 813, <i>Request for Environmental Impact Analysis</i> subsequent to submissions by the proponent and makes CATEX determinations identifies and documents, with technical advice from the bioenvironmental engineer and other staff members, environmental quality standards that relate to the action under evaluation prepares environmental documents, or obtains technical assistance through the AF channels or contract support, and adopts the documents as official AF papers when completed and approved ensures the EIAP is conducted on base-level plans, including contingency plans for the training, movement, and operation of AF personnel and equipment prepares AF Form 813 and applicable portions of Certificates of Compliance for each military construction (MILCON) project according to AFI 32-1021, and the U.S. Air Force - Europe (USAFE) 10 November 1994 message determines whether an action significantly affects the environment (has potential to do significant harm) in accordance with USAFE 5 May 1992 letter. (NOTE: Determining whether an action significantly affects the environment entails procedures set up to review AF Form 332 and project documentation such as DD Form 1391/C.) Verify that the EPF responsible official signs the AF Form 813 certification.
6-4. Any office, unit, or	Verify that the proponent of an action does the following: (1)(3)
activity at any level that initiates AF actions (the proponent) must perform specific functions in the EIAP process (AFI 32- 7061, para 1.3.5).	 notifies the EPF of pending actions and completes Section I of AF Form 813, including a DOPAA for submittal to the EPF identifies key decision points and coordinates with the EPF on EIAP phasing to ensure that environmental documents are available to the decision maker before the final decision is made and activities associated with the proposal are not implemented until the EIAP is complete integrates the EIAP into the planning stage of a proposed program or action and, with the EPF, determines as early as possible whether to prepare an EIS presents the DOPAA to the EPC for review and comment coordinates with the EPF prior to organizing public or interagency meetings that deal with EIAP elements of a proposed action and involve persons or agencies outside the Air Force assists the EPF and PAO in preparing a draft NOI when a decision is made to prepare an EIS.

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REVIEWER CHECKS: August 1997 Verify that the SJA does the following: (3) - advises the command level proponent EPF and EPC on CATEX determinatio and the legal sufficiency of environmental documents
 advises the command level proponent EPF and EPC on CATEX determinatio and the legal sufficiency of environmental documents
 advises the EPF during the scoping process of issues that should be addresse in EISs and on procedures for the conduct of public hearings coordinates with AFLSA/JAJT on the appointment of an independent hearin officer refers matters causing, or likely to cause, substantial public controversy of litigation through channels to AFLSA/JACE. Verify that the PAO: (4) advises the EPF, the EPC, and proponents on public affairs implications of
 advises the EAT, the scoping process of issues that should be addressed in the EIS prepares, coordinates, and distributes news releases related to the proposal and associated EIAP documents notifies the media and purchases advertisements when newspapers will not run the notices free of charge. Verify that, as a representative of Medical Services, the bioenvironmental engined provides technical assistance to the EPF in the areas of environmental health star dards, effects, and monitoring capabilities. (2) Verify that the Safety Office provides technical assistance to the EPF to ensure consideration of safety standards and requirements. (14)
Verify that the EPC helps the commander assess, review, and approve EIAP documents. (1) (NOTE: The HQ USAF/CEV policy letter of 26 August 1994 requires documentation indicating prior MAJCOM EPC coordination or approval to accompany EIA documents sent to them for senior staff approval or signature. The policy is directer at, but not limited to, Draft and Final EISs, EAs, Records of Decision, Findings of No Practicable Alternative, and finding of no significant impact (FONSIs).)
V pd V si V r (I ti d at

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
ENVIRONMENTAL ANALYSES (EAs)	(NOTE: The term 'environmental analysis' is understood to include environmental impact statements (EISs), environmental reviews (ERs), and environmental studies (ESs).)
6-7. A service component that is responsible	Determine whether the installation has sponsored proposals that require EAs. (1)
for a proposal must com- plete the appropriate EAs	Verify that the installation has completed the EA appropriate to each such proposal.
(FGS-Turkey 17-1).	(NOTE: See Table 6-2 for a summary of which types of actions require which kinds of analysis.)
6-8. If it is determined that no EA is required, the	Verify that, if a proponent determines that no environmental analysis is required, a negative decision is completed. (1)
proponent must docu- ment that decision (FGS- Turkey 17-3).	(NOTE: The negative decision should be recorded on AF Form 813 or 332, or on the Certificate of Compliance (DD Form 1391/C).)
Environmental Studies and Environmental Reviews	(NOTE: The decision whether a proposed action is one that would significantly affect the environments (potential for significant harm) covered by this section is taken by the EPF.)
6-9. Specific analyses and documentation procedures must be carried out	Verify that the installation performs appropriate analyses and creates documentation for the following types of major Federal actions: (1)
when an installation per- forms certain types of	- those that significantly affect the environment of a foreign nation that is not involved in the action
major DOD actions that do significant harm to the	- those that are determined to cause significant harm to the environment because they provide to that nation:
environment of a foreign nation or to a protected	- a product or involve a physical project that produces a principal product, emission, or effluent that is prohibited or strictly regulated by Federal law
global resource (FGS- Turkey 17-1 and 17-2 and	in the United States because its toxic effects on the environment create a serious public health risk
DODD 6050.7, Encl. 2, para B(1) and C(3)(a)).	- a physical project that is prohibited or strictly regulated in the United States by Federal law to protect the environment against radioactive sub- stances
	 those that significantly harm natural or ecological resources of global impor- tance designated for protection by the President or, in case of such a resource protected by international agreement binding on the United States, designated for protection by the Secretary of State.
	(NOTE: Included in the category of "prohibited or strictly regulated" are the follow- ing: asbestos, vinyl chloride, acrylonitrile, isocyanates, polychlorinated biphenyls, mercury, beryllium, arsenic, cadmium, and benzene.)

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-9. (continued)	Determine whether any of the actions occurring at the installation have been grante a categorical exclusion by the DOD.
	Verify that either an ES or an ER was prepared, as appropriate.
	 (NOTE: The following are exempt from these requirements: actions that the EPF determines do not significantly affect the environment of foreign nation that is not participating in the action, or that do not cause significant harm to a designated resource of global importance actions taken by the President
	 actions taken by or pursuant to the direction of the President or a cabinet office in the course of armed conflict actions taken by or pursuant to the direction of the President or a cabinet office when the national security or national interest is involved
	 intelligence activities and arms transfers votes and other actions in international conferences and organizations actions involving export licenses, export permits, or export approvals, oth than those relating to nuclear activities
	 actions relating to nuclear activities and nuclear material, except actions pr viding a nuclear production or utilization facility as defined in the <i>Atom</i> <i>Energy Act</i> of 1954, as amended, or a nuclear waste management facility to foreign nation disaster and emergency relief action.)
	(NOTE: Additional exemptions may be granted on a case-by-case basis.)
	(NOTE: If a current and acceptable environmental document already exists for particular action, regardless of which Federal agency prepared it, DODD 6050 does not require the preparation of a new document.)
6-10. Certain information must be recorded in the event that a decision is	Verify that, if a negative decision is made, the file is documented with a record of th decision and the names of the decision makers who participated. (1)
made not to prepare an ES (DODD 6050.7, Encl. 2, para D(3)).	(NOTE: The negative decision should be recorded on AF Form 813 or 332, or on the Certificate of Compliance (DD Form 1391/C).)
6-11. Installations in the process of completing an ES must meet certain requirements while engaged in that process (DODD 6050.7, Encl. 2, para D(3)).	Verify that no action concerning the proposal is taken that would do significant har to the environment until the study has been completed and the results considered. (

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-12. The content of an ES is subject to certain requirements (DODD 6050.7, Encl. 2, para D(4)).	 Verify that the ES includes the following: (1) a general review of the affected environment the predicted effects of the action on the environment significant known actions taken by governmental entities with respect to the proposed action to protect or improve the environment if no actions are being taken to protect or enhance the environment, a statement as to whether the decision not to do so was made by the affected foreign government or international organization.
6-13. Certain information must be recorded in the event that a decision is made not to prepare an ER (DODD 6050.7, Encl. 2, para E(3)).	Verify that, if a decision is made not to prepare an ER, a record is made of that deci- sion and its basis. (1) (NOTE: The negative decision should be recorded on AF Form 813 or 332, or on the Certificate of Compliance (DD Form 1391/C).)
6-14. Installations in the process of completing an ER must meet certain requirements while engaged in that process (DODD 6050.7, Encl. 2, para E(3)).	Verify that no action concerning the proposal is taken that would do significant environmental harm until the review has been completed. (1)
6-15. The content of an ER is subject to certain requirements (DODD 6050.7, Encl. 2, para E(4)).	 Verify that the ER includes the following, to the extent reasonably practical: (1) a statement of the proposed action including its timetable, physical features, general operating plan, and other similar broad-gauge descriptive factors identification of the important issues involved the aspects of the actions taken or to be taken by the AF that ameliorate or minimize the impact on the environment the actions known to have been taken or to be planned by the government of any participating and affected foreign nations that will affect environmental considerations.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
ENVIRONMENTAL NOISE	(NOTE: FGS-Turkey, Chapter 10, does not address procedures for operating aircraf of ships.)
All Installations	
6-16. Copies of all relevant DOD directives/ instructions, U.S. Air Force (USAF) directives, and guidance documents should be maintained at the installation (MP).	Verify that the Base Staff Judge Advocate has available the host-nation FGS and reevant USAF documents. (1)(3)
6-17. Installations must meet regulatory requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether any new regulations concerning noise emissions have bee issued since the finalization of the manual. (1)(5) Verify that the installation is in compliance with newly issued regulations.
6-18. Installations with significant noise sources	Determine whether the installation has significant noise sources. (1)(5)
must develop and main- tain a noise contour map	Verify that the installation has developed and maintains a noise contour map limite to the installation.
(FGS-Turkey 10-1 through 10-3).	Verify that noise contours for significant noise sources are developed using a conputerized program from operational data using the Day-Night Average Sound Lev (L_{dn}) noise descriptor system.
	Verify that noise analysis for airfields is developed using the A-weighted L_{dn} .
	(NOTE: The noise simulation program used to assess heavy weapons noise MicroBNOISE. This software was developed and is maintained by the U.S. Arm Construction Engineering Research Laboratories (USACERL).)
	(NOTE: Noise level contours are generated using the NOISEMAP 6.1 comput program. This program is maintained by the USAF Armstrong Aerospace Medic Research Laboratory.)

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-19. Installations must maintain records of incompatible buildings and land uses (FGS-Turkey 10-4).	 Verify that the installation maintains records of incompatible buildings and land uses on the installation. (1)(5) (NOTE: Table 6-3 establishes compatible uses and the Noise Level Reduction (NLR) to achieve acceptable indoor noise levels for facilities.)
6-20. Installations must review installation master plans to ensure that existing and future facility siting is consistent with an acceptable noise environment (FGS-Turkey 10-5).	Verify that the installation master plan has been reviewed to ensure that existing and future facility siting is consistent with an acceptable noise environment. (1)(5)
6-21. The siting and conduct of ground runup must be evaluated for low frequency vibration as well as general audible noise (FGS-Turkey 10-6).	Verify that the siting and conduct of ground runup are evaluated for both low fre- quency vibration and general audible noise. (1)(5)
6-22. Installations must maintain operational data on noise producing activities (FGS-Turkey 10-8).	Verify that the installation maintains operational data to facilitate development of noise level contour installation compatible land use zone studies. $(1)(5)$
6-23. Installations must have procedures to register and resolve noise complaints (FGS-Turkey 10-9).	Verify that the installation has procedures to register and resolve noise complaints. $(1)(4)(5)(6)$
6-24. Installations must take specific actions with regard to noise mitigation (FGS-Turkey 10-7).	Verify that the installation identifies noise sources that create noise impacts. (1)(5)(6) Verify that the installation investigates possible mitigation measures. Verify that the installation programs resources to reduce noise impacts.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
CLEANUP (RESTORATION)	
6-25. Copies of all relevant DOD directives/ instructions, USAF directives, and guidance documents should be main- tained at the installation (MP).	Verify that the Base Staff Judge Advocate has available the host-nation FGS and revant USAF documents. (1)(3) (NOTE: Among the relevant documents is AFI 32-7006, <i>Environmental Program</i> , <i>Foreign Countries</i> , 29 April 1994.)
6-26. Installations must meet regulatory requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether new regulations or policies concerning the cleanup of contannated sites have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations.
6-27. Cleanup projects at sites contaminated by AF operations must be executed to a point established by AF policy (AFI 32-7006, para 2.2 and 2.3).	Determine whether the installation has planned or conducted any cleanup project (1) Verify that cleanup projects are executed to the point that contamination no lon poses an imminent and substantial danger to human health and safety. Verify that cleanup projects are executed as needed to sustain current operations. (NOTE: These requirements do not apply if the AF is bound by international agr ment to do more.)
6-28. Installations or facilities identified for return to the host nation must meet specific requirements with regard to documentation (AFI 32-7006, para 2.3.2).	Determine whether the installation or facility has been identified for return to host nation. (1) Verify that the installation or facility documents all known environmental contain nation and provides the documentation to the host nation. (NOTE: This requirement applies only after appropriate U.Shost public announ ment of the return, and only after MAJCOM has granted clearance to release the d umentation.)

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
POLLUTION PREVENTION	
All Installations	
6-29. Copies of all relevant DOD directives/ instructions, USAF direc- tives, and guidance docu- ments should be maintained at the installa- tion (MP).	 Verify that the Base Staff Judge Advocate has available the host-nation FGS and relevant USAF documents. (1)(3) (NOTE: Among the relevant documents are the following: AFI 32-7080, Pollution Prevention Program, 12 May 1994 AF Policy Letter, Air Force Ban on Purchases of ODCs, 7 January 1993 DODI 4715.4, Pollution Prevention, 18 June 1996.)
6-30. Installations must meet regulatory and AF requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether any new regulations concerning pollution prevention have been issued since the finalization of the manual. (1)(7) Verify that the installation is in compliance with newly issued regulations.
Opportunity Assessments	
6-31. Installations must conduct Opportunity Assessments to review waste generating activi- ties and installation waste streams (AFI 32-7080, para 2.2.1).	Verify that an Opportunity Assessment of each waste generating activity is con- ducted on a recurring basis. (8)(11)
	Verify that the Opportunity Assessment provides a systematic review of the waste generating activities and installation waste streams.
	Verify that the assessment examines the total waste generation by type and volume of content and determines the most economical and practical waste minimization option.
	Verify that consideration is given to cost/benefit analysis when evaluating options.

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-31. (continued)	 (NOTE: An example of the composition of an assessment team includes the follow ing persons: raw material supplier QA/QC Officer consultant process engineer safety engineer purchasing specialist line laborer plant manager.)
Pollution Prevention Management Plan	
6-32. Installations must develop and execute a Pollution Prevention Management Plan (AFI 32-7080, para 2.2 and DODI 4715.4, para F2(c)(2)).	 Verify that the installation has a Pollution Prevention Management Plan. (8)(11) Verify that the plan addresses all of the following issues: the process required to run a pollution prevention program the program required to fund pollution prevention projects the road map to achieve AF pollution prevention goals the actions required to execute the program. Verify that the plan contains management strategies for the following areas: ODCs USEPA 17 industrial toxics hazardous wastes municipal solid waste affirmative procurement of recycled materials energy conservation air pollution reduction.
	 Verify that the plan identifies and programs projects needed to achieve stated objectives. Verify that the installation maintains and executes pollution prevention plans that identify goals and cost-effective management processes or technologies to eliminat or reduce the use and disposal of hazardous materials.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-33. Installations should include additional strategies for improving the pollution prevention program in the Pollution Prevention Management Plan (MP).	 Verify that the plan includes the following information: (8)(10)(11) plans to crossfeed information to the rest of the AF plans to brief the base EPC plans to implement Opportunity Assessments oil/water separator management strategies usable measures of success programming and budgeting strategies.
ODCs	 (NOTE: See also Section 1, Air Emissions Management.) (NOTE: The only Halon 1211 extinguishers classified as mission critical are the 150 lb flight line extinguishers listed in Technical Order (TO) 00-25-172 to support parked aircraft and those hand-held extinguishers on board large frame aircraft.) (NOTE: As of March 1996 no acceptable replacement for Halon 1211 had been identified.)
6-34. Installations must eliminate dependence on ODCs (AF Policy Letter, 7 January 1993).	Determine whether the installation uses any of the substances listed in Table 6-4. (8)(11)(12) Verify that the installation's dependence on chlorofluorocarbons (CFCs), halons, and other substances that deplete the stratospheric ozone layer is being reduced. Verify that any new system or modification to an existing system does not include the use of ODCs as a solvent. (NOTE: This requirement does not apply if the system or modification is approved by the proper waiver approval authority.)
6-35. Installations should have a refrigerant management plan (MP).	Verify that the installation has a plan for managing the use and disposal of refriger- ant. (8)
6-36. Installations must follow specific requirements during the period of transition away from ODC dependence (AF Policy Letter, 7 January 1993 and AFI 32-7080, para 3.1.2).	Verify that, when non-ODC substitutes need long research and development lead times, existing uses are converted to ODCs with lower ozone depletion potential as interim substitutes, (i.e., hydrochlorofluorocarbons (HCFCs)). (1)(2)(7)(8) Verify that inventory reserves are used only to aid a transition from ODCs. (NOTE: This requirement applies after production has been outlawed.) (NOTE: Inventory reserves may not be used as a substitute for changing to non-ozone-depleting practices.)

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-36. (continued)	Verify that, if reserves are used to extend the service life of ODC-dependent equip ment, the installation practices conservation, recovery, and reuse.
6-37. Installations must initiate certain ODC replacement programs (AF Policy Letter, 7 Janu- ary 1993).	Verify that halon systems on crash/rescue vehicles are disabled and a phased program is in place to replace them with nonhalon fire fighting agents. (1)(8)
	Verify that a phased replacement program has been initiated to replace halon in the 150 lb [≈68 kg] flightline extinguishers.
	(NOTE: Halon removed from crash/rescue vehicles, or from existing installation stock, may be used to service flightline extinguishers until the phased replacement program is complete.)
	Verify that existing halon fire extinguishers for facilities are replaced through attr tion.
	Verify that refrigerators and other domestic equipment are replaced at the end of the economic life with non-ODC equipment.
	(NOTE: Existing airborne cooling systems and subsystems that require ODC refrierants are considered mission critical.)
6-38. Installations must follow specific requirements regarding contract writing for the use of ODCs (AF Policy Letter, 7 January 1993).	Verify that contracts awarded after 1 June 1993 do not include a requirement to us ODCs or any requirement that can be met only through the use of ODCs. (8)(11)
	(NOTE: This requirement does not apply if waived by the waiver approval authori (Air Force Logistics (AF/LG), Air Force Civil Engineering (AF/CE), or Depu Assistant Secretary of the Air Force (SAF/AQ)).)
6-39. Installations must reduce the atmospheric discharge of ODCs (AF Policy Letter, 7 January 1993).	Verify that the discharge of ODCs is reduced to zero as soon as possible. (8)(11)
	 Verify that one of the following is being used to reduce discharges: modification of operating, training, and testing practices implementation of conservation measures such as: recovery recycling reuse
	- material substitution.
	Verify that existing halon systems that discharge to the atmosphere for other that actual fire situations, such as fuel tank inerting systems, are used only in actual combat or in in-flight emergencies.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-39. (continued)	Verify that fire warning systems and operational procedures operate so that there are no false alarms or false discharges.
	Verify that automatic discharge extinguisher systems in facilities are disabled and placed on manual activation.
	Verify that all servicing of aircraft halon systems captures the halon for recycling with no atmospheric discharge, other than <i>de minimis</i> amounts.
	Verify that leaking systems are repaired quickly.
6-40. Installations must eliminate purchases of	Verify that the substances listed in Table 6-5 are no longer being purchased. (8)(11)(12)
ODCs (AF Policy Letter, 7 January 1993 and AFI	Verify that the following are no longer purchased:
32-7080, paras 3.1.1 and 3.1.3).	 new or recycled ODCs, unless a waiver has been granted halon extinguishers for facilities total flooding systems facility air conditioning systems, AGE, and other refrigeration and support equipment that use ODCs commercial vehicles with ODC air conditioning equipment ODC solvents and the equipment/systems/products that require these solvents formation
	for maintenance or operation. (NOTE: ODC needed to meet the mission critical applications will be obtained by using stocks, or from the Defense Logistic Agency (DLA) Defense Reserve, or pur- chased from commercial sources if the reserve is not able to fill a request.)
	Verify that ODC-containing products are not purchased or obtained from the Defense Reserve without an approved waiver.
	(NOTE: Organizations may apply for waivers prior to the award of any contract which requires the use of Class I ODCs to purchase new or recycled ODCs, or obtain ODCs from the DLA Ozone Depleting Chemical Bank for mission critical applica- tions. Waivers are not required for government use of ODCs currently in stock on Air Force facilities.)
6-41. Installations should follow specific procedures for the processing of reclaimed ODCs (MP).	Verify that processes are in place to ensure that reclaimed and excess ODC halons, refrigerants, and solvents are routed to the DLA Defense Reserve. (2)(7)(9)
	(2) BES (Bioenvironmental Engineering Services) (3) SJA (Staff Judge Advocate) (4) PAO (Public Affair

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-42. Installations must manage halons in existing systems in a specific manner (AF Policy Letter, 7 January 1993).	Verify that halons are removed from aircraft that are being retired from service. (9) Verify that such halons are redeployed or added to the AF account at the DL Defense Reserve.
6-43. Installations must maintain equipment and inventories at a certain level (AF Policy Letter, 7 January 1993).	Verify that chillers are well maintained and repaired promptly. (1)(9)
Hazardous Substances (Waste and Material)	
6-44. Installations must develop centralized control procedures for the purchase and use of hazardous materials (AFI 32-7080, para 2.4.1).	 Verify that the purchase of hazardous materials is under centralized control. (7)(8) (NOTE: This requirement also applies to ODCs.) Verify that the issuance and distribution of hazardous materials is centrally co trolled. Verify that hazardous materials are issued in the smallest quantity necessary to me the customer's need.
6-45. Installations must reduce the use of USEPA ITP chemicals (AFI 32-7080, para 3.2).	Verify that the installation is working to reduce the use of the chemicals listed Table 6-1. (1)(7)(8) (NOTE: Due to the high levels of certain USEPA 17 Toxics in jet fuel, and the dire link between fuels and flying hours, the AF's USEPA 17 reduction goals exempt j fuels.)
6-46. Installations must work to minimize hazardous waste generation (AFI 32-7080, para 3.3 and para 2.4.3).	Verify that hazardous waste from industrial, maintenance, and cleanup operations minimized to the greatest extent practical and economical. (8)(9)(11) Verify that the installation strives to reduce hazardous waste generation at the source Verify that alternatives to hazardous materials and processes are used whenever possible.

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COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-46. (continued)	Verify that, when technical orders require the use of many hazardous substances or out-of-date technology, the installation submits an Air Force Technical Order (AFTO) Form 22.
	(NOTE: This requirement applies only if alternative substances/technology are known to exist.)
6-47. Installations must maintain inventory management and control processes that minimize the use of hazardous materials (DODI 4715.4, para $F2(c)(1)$).	Verify that the installation maintains inventory management and control processes that minimize the use of hazardous materials, as appropriate, in the most economical manner. $(1)(7)(8)(9)$
6-48. Installations should encourage complete use of hazardous materials (MP).	Verify that a reuse facility of some type is established. (7)(8)(11)
Solid Waste	
6-49. Installations must institute pollution preven-	Verify that cost-effective waste reduction and recycling programs have been inte- grated into the Municipal Solid Waste Management program. (1)(9)
tion procedures as part of their solid waste manage- ment (AFI 32-7080, para 3.4.1 and para 3.4.1.1).	Verify that the installation either operates a composting program for yard wastes or participates in a regional composting program.
	(NOTE: This requirement does not apply if the program can be shown to be cost prohibitive.)
	Verify that the installation establishes a single QRP that serves all AF and tenant organizations occupying space on the installation, including leased space.
	Verify that the installation has a QRP manager.
	Verify that the Services Squadron, Army/Air Force Exchange Services (AAFES), and the Commissary coordinate their recycling activities with the QRP manager.

	OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-49. (continued)	Verify that recycling includes the following materials: (8)
	 high quality copier paper plastic metals glass used oil lead acid batteries cardboard newspaper tires. Verify that contracts awarded after 20 October 1993 for government-owned, contrator-operated (GOCO) facilities include provisions that obligate the contractor to paticipate with a DOD installation or establish their own qualified recycling program Verify that, when economically feasible and to the extent required by law, existing contracts covering GOCO facilities are modified to incorporate these recycling provisions. Verify that the installation conducts an annual opportunity assessment of the sol waste stream to identify source reduction potential and additional recyclable materials.
6-50. Installations must establish recycling pro- grams and procedures, if cost-effective (DODI 4715.4, para F2(c)(3)).	 Verify that, if cost-effective, the installation has a recycling program and procedure in place that: (1) ensure the installation has or participates in a QRP ensure installation recycling programs are available to serve all host and tena organizations that occupy space on the installation, including leased space ensure QRP procedures address recyclable materials, excluded materials, ar other qualified recycling program materials divert recyclable materials from the non-hazardous solid waste stream if economically feasible establish controls to ensure excluded materials are not sold through a QRP authorize ICs, as appropriate, to sell directly recyclable and other QRP materials or to consign them to Defense Reutilization and Marketing Service (DRM: for sale ensure that distribution of recycling proceeds is consistent with 10 U.S. Coor (USC) 2577.

(12) Contracting (13) Natural & Cultural Resources Managers (or Environmental Coordinator) (14) Base Safety Officer (12) Contracting (13) Natural & Cultural Resources Managers (or Environmental Coordinator) (14) Base Safety Officer (14) Base Safety Officer (15) Contracting (13) Natural & Cultural Resources Managers (or Environmental Coordinator) (14) Base Safety Officer (14) Contracting (15) Natural & Cultural Resources Managers (or Environmental Coordinator) (14) Base Safety Officer (14) Contracting (15) Natural & Cultural Resources Managers (15) Contracting (16) Natural & Cultural Resources Managers (17) Natural & Cul

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-51. Installations must issue a municipal solid waste and recycling report quarterly (AFI 32-7080, para 3.4.2).	Verify that the municipal solid waste and recycling report (RCS, HAF-CEV(Q)9424 is released quarterly to the Air Staff within 45 days after the end of each quarter. (8) (NOTE: This report can be discontinued during emergency conditions.)
6-52. Installations must implement affirmative procurement programs for materials with recycled content (AFI 32-7080, para 3.5).	 Verify that each activity reviews and revises specifications for the following designated items to allow procurement of products containing recycled materials: (1)(7)(8)(11)(12) paper retread tires building insulation cement/concrete containing fly ash re-refined oils. Verify that all of the following elements are included in the installation's affirmative procurement program: a preference program a promotion plan procedures requiring vendors and contractors to estimate and certify the content of recovered materials in the above designated items that they sell to the installation annual review of the effectiveness of the program.
6-53. Installations must issue an affirmative pro- curement purchases report quarterly (AFI 32- 7080, para 3.5.4).	Verify that the affirmative procurement report (RCS, HAF-CEV(Q)9424 is released quarterly to the Air Staff within 45 days after the end of each quarter. (8) (NOTE: This report can be discontinued during emergency conditions.)

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COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
PROGRAM MANAGEMENT	
All Installations	
6-54. Copies of all relevant DOD directives/ instructions, USAF direc- tives, and guidance docu- ments should be main- tained at the installation (MP).	 Verify that the Base Staff Judge Advocate has available the host-nation FGS and reevant USAF documents. (3) (NOTE: Among the relevant documents are the following: AFI 13-212, Volume 1, Weapons Ranges, 28 July 1994 AFI 32-7001, Environmental Budgeting, 9 May 1994 AFI 32-7002, Environmental Management System, 31 May 1994
(MP).	 - AFI 32-7005, Environmental Protection Committees, 25 February 1994 - AFI 32-7006, Environmental Program in Foreign Countries, 29 April 1994.)
6-55. Installations must meet regulatory requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether new regulations concerning the following program manageme topics have been issued since the finalization of the manual: (1)(3) - weapons ranges - A-106 - reporting requirements - the EPC - WIMS-ES - deployments. Verify that the installation is in compliance with newly issued regulations.
Weapons Ranges	(NOTE: These requirements apply to air-to-surface weapons ranges only.)
6-56. Weapons ranges must be addressed in plans required by environmental regulations (AFI 13-212, Volume 1, para 1.10.2.2).	 Determine whether the installation has air-to-surface weapons ranges. (13) Verify that each weapons range is addressed in the plans required by environment regulations. (NOTE: Examples of such plans are: the hazardous materials management plan the hazardous waste management plan the spill plan.)

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-57. Installations must	Verify that the installation has a comprehensive weapons range plan. (13)
develop a comprehensive weapons range plan that meets specific require- ments (AFI 13-212, Vol- ume 1, para 1.10.1.1).	Verify that the plan addresses: - land space - airspace
	- range facilities
	 targets instrumentation (including scoring devices) environmental items
	 local community and government use of adjacent land (regional development agreements) legal liability base facilities
	 range budget any proposed expansion, construction, rehabilitation, or other action that may have an impact on the range.
	(NOTE: For overseas ranges, MAJCOMs may alter the requirements of this plan as necessary to comply with host nation requirements.)
	Verify that a brief narrative is included in the plan for only those items that are impacted.
	Verify that the plan contains a statement that all of the following areas have been considered:
	- Range:
	- equipment
	- targets
	- structures
	- land requirements (waivers and exemptions)
	 airspace requirements maintenance and decontamination
	- Environmental:
	- fauna and flora
	- endangered species
	- emissions
	- ambient air quality
	- noise
	- water resources - wetlands
	- wetlands - coastal zones
	- mineral resources
	- soil conservation
	- timber resources
	- grazing and croplands

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
6-57. (continued)	 Environmental (continued): hunting and fishing outdoor recreation hazardous wastes historical sites archaeological sites range land use wilderness flood plains Community and Government: off-range land use regional development zoning intergovernmental agreement(s) encroachment(s) Legal: liabilities environmental laws ingrants and outgrants other agreements Base Facilities Range Budget: past present future. Verify that, for new weapons ranges, a plan is developed no later than 1 yr after the range has become operational.
 A-106 Pollution Abatement 6-58. Installations must submit a 5 yr pollution abatement plan (the A-106 report) that details the actions they plan to take to get into or maintain compliance (AFI 32- 	(NOTE: See Table 6-6 for additional guidance on determining A-106 compliance.) Verify that the installation submits a 5-yr pollution abatement plan (the A-106 report that details the actions they plan to take to get into or maintain compliance. (1)

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP				
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997			
6-59. The installation's A-106 Plan should meet specific requirements with regard to content	Verify that the installation A-106 Pollution Abatement Plan reflects environmental requirements and properly prioritizes each as Operation and Services, Level 1, Level 2, or Level 3. (1)			
(MP).	Verify that the A-106 Plan includes all projects involving costs that are necessary to comply with environmental standards.			
	Verify that projects resulting from previous Environmental Compliance Assessment and Management Program (ECAMP) evaluations or regulatory inspections are included in the A-106 Plan.			
	(NOTE: Management action plans from ECAMP will give projects required to get installation back in compliance.)			
	Verify that the A-106 Plan includes funds required for studies, management, and monitoring associated with the definition and development of corrective measures and necessary equipment to assure compliance with standards.			
	Verify that the installation budgets for the environmental requirements are recorded in the installation A-106 Plan.			
	(NOTE: Assessors compare listings in the A-106 with the Project by Contract Man- agement System (PCMS) and PDC listings in Civil Engineering and compare official financial records with obligation/expenditure data reflected in the A-106 system.)			
	Verify that funds have been requested for Level 1 projects in the current fiscal year.			
	Verify that design funds have been requested for those projects that will be Level 1 projects in the subsequent fiscal year.			
Environmental Protection Committee (EPC)				
6-60. Installations must have an EPC that fulfills	Verify that the installation has an EPC. (1)			
specific functions (AFI	Verify that it meets at least quarterly or at the direction of the chairperson.			
32-7005, para 4.3).	Verify that the EPC reviews and approves environmental impact analysis on pro- posed actions and forwards to the decision maker.			
	Verify that the EPC reviews environmental policy, resources, and performance and makes recommendations on required changes.			
	Verify that the EPC ensures that appropriate training and manpower exist to meet environmental responsibilities.			

(1) BCE (Environmental Planning) (2) BES (Bioenvironmental Engineering Services) (3) SJA (Staff Judge Advocate) (4) PAO (Public Affairs Officer) (5) Deputy for Operations (Airspace Manager) (6) Range Operating Agency (7) Supply Officer (8) Environmental Manager (9) Generat-ing Activities (Including Accumulation Point Managers/Operators) (10) Water and Waste Shop (11) EPC (Environmental Protection Committee) (12) Contracting (13) Natural & Cultural Resources Managers (or Environmental Coordinator) (14) Base Safety Officer 6 - 38

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP				
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997			
6-61. The EPC must consist of certain members (AFI 32-7005, para	Verify that the membership of the EPC mirrors the membership of the USAF EPC (1)(11)			
3.3).	 (NOTE: The membership of the USAF EPC includes: the Assistant Secretary of the Air Force for Manpower, Reserve Affairs, Insta lations, and Environment (SAF/MII) and the Assistant Vice Chief of Staff (He USAF/CVA) cochair the EPC 			
	 Assistant Secretary for Acquisition (SAF/AQ) Assistant Secretary for Budget (SAF/FM) The General Counsel (SAF/IG) The Inspector General (SAF/IG) 			
	 Office of Legislative Liaison (SAF/LL) Office of Public Affairs (SAF/PA) the Civil Engineer (HQ USAF/CE) is the EPC Executive Secretary Deputy Chief of Staff (DCS) Logistics (HQ USAF/LG) Director, Programs and Evaluations (HQ USAF/PE) DCS Plans and Operations (HQ USAF/XO) 			
	 Chief of Safety (HQ USAF/SE) The Judge Advocate General (HQ USAF/JA) DCS Personnel (HQ USAF/DP) Services (HW USAF/MW) DCS Command, Control, Communications and Computers (HQ USAF/SC) Surgeon General (HQ USAF/SG) 			
	 Chief of Air Force Reserves (HQ USAF/RE) Director, Air National Guard (NGB/CF) Director, Air Force Base Conversion Agency (AFBC/DR).) 			
	Verify that the membership of the EPC also includes representatives from tena organizations, including Defense Reutilization and Marketing Office (DRMO) at the AAFES.			
6-62. The EPC has par- ticular responsibilities with regard to record-	Verify that a record of the EPC meetings is prepared within 30 days of the meeting (1)(11)			
keeping (AFI 32-7005, para 5).	Verify that the minutes of EPC meetings and related documents are kept for at leas 10 yr.			

(1) BCE (Environmental Planning) (2) BES (Bioenvironmental Engineering Services) (3) SJA (Staff Judge Advocate) (4) PAO (Public Affairs Officer) (5) Deputy for Operations (Airspace Manager) (6) Range Operating Agency (7) Supply Officer (8) Environmental Manager (9) Generating Activities (Including Accumulation Point Managers/Operators) (10) Water and Waste Shop (11) EPC (Environmental Protection Committee) (12) Contracting (13) Natural & Cultural Resources Managers (or Environmental Coordinator) (14) Base Safety Officer

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP				
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997			
WIMS-ES Management				
6-63. Installations must meet specific requirements with regard to the tracking and reporting of certain data (AFI 32-7006, para 6.1).	 Verify that the installation tracks and reports data from the following areas using WIMS-ES, if the MAJCOM requires that the module be used: (1) cleanup compliance with FGS ECAMP EIAP comprehensive planning pollution prevention data on host nation regulatory findings. 			
6-64. Program management reporting should be done in WIMS-ES (AFI 32-7002, paras 3.1, 4.1, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1, 13.1, 14.1, and 15.1).	 Verify that quarterly reports are being added and released. (1) Verify that programming records are being added for projects and Operations and Services expenses. Verify that the following modules are in use: A-106 Module, for reporting planned environmental expenditures and budgeting for the following programs: restoration compliance conservation pollution prevention Release Reporting Module, for tracking and reporting releases ECAMP Module, for tracking and reporting ECAMP findings and action plans Underground storage tank (UST) Module, for tracking and monitoring USTs Polychlorinated biphenyls (PCB) Module, for inventorying all PCB-containing equipment (excluding sealed PCB items and capacitors containing less than 3 lb [≈1 kg] of dielectric fluid) Inspection and Enforcement Module, for tracking host nation regulatory findings Hazardous Waste Module, for tracking and monitoring air pollution sources and permits Water and Wastewater Module, for tracking water- and wastewater-related data Cleanup Module, for tracking and reporting information concerning cleanup of contaminated sites 			

(1) BCE (Environmental Planning) (2) BES (Bioenvironmental Engineering Services) (3) SJA (Staff Judge Advocate) (4) PAO (Public Affairs Officer) (5) Deputy for Operations (Airspace Manager) (6) Range Operating Agency (7) Supply Officer (8) Environmental Manager (9) Generat-ing Activities (Including Accumulation Point Managers/Operators) (10) Water and Waste Shop (11) EPC (Environmental Protection Committee) (12) Contracting (13) Natural & Cultural Resources Managers (or Environmental Coordinator) (14) Base Safety Officer 6 - 40

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES Republic of Turkey ECAMP				
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997			
6-64. (continued)	 Pollution Prevention Module, for reporting data related to the pollution prevention program, including the following: solid waste disposal hazardous material purchases affirmative procurement of recycled products justification information for funding requirements Conservation Module, for tracking and reporting of the following: Base Comprehensive Plan status Installation compatible use zone (ICUZ) status EIAP actions Natural and Cultural Resource data. 			
	(NOTE: The Training Tracking Module may be used to track environmental training received by personnel at all levels.)			
Deployments				
6-65. Installations must comply with specific instructions for deployments (AFI 32-7006, para 7.1).	Verify that the installation complies with the provisions of AFI 32-7061 (EIAP) for deployments. (1) (NOTE: See checklist items 6-4 and 6-5).			
6-66. Installations must develop and comply with	Verify that the installation develops and complies with an exercise- or contingency specific environmental plan. (1)			
an exercise- or contin- gency-specific environ- mental plan (AFI 32- 7006, para 7.1 and 7.3.2).	Verify that the plan meets the requirements of Joint Chiefs of Staff (JCS) Publicatio 4-04.			
, , , , , , , , , , , , , , , , , , ,	Verify the plan specifies environmental responsibilities and policies.			
	 Verify that the plan addresses at least the following concerns: certification of local water sources by medical field units solid and liquid waste management hazardous materials management protection of flora and fauna archaeological and historical preservation spill response. 			
	(2) BES (Bioenvironmental Engineering Services) (3) SJA (Staff Judge Advocate) (4) PAO (Public Af			

(1) BCE (Environmental Planning) (2) BES (Bioenvironmental Engineering Services) (3) SJA (Staff Judge Advocate) (4) PAO (Public Affairs Officer) (5) Deputy for Operations (Airspace Manager) (6) Range Operating Agency (7) Supply Officer (8) Environmental Manager (9) Generating Activities (Including Accumulation Point Managers/Operators) (10) Water and Waste Shop (11) EPC (Environmental Protection Committee) (12) Contracting (13) Natural & Cultural Resources Managers (or Environmental Coordinator) (14) Base Safety Officer 6 - 41

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Table 6-1

USEPA 17 Industrial Toxic Chemicals (AFI 32-7080, A2.2)

1. Benzene 2. Cadmium and its compounds 3. Carbon Tetrachloride 4. Chloroform 5. Chromium and its compounds 6. Cyanide and its compounds 7. Lead and compounds 8. Mercury and compounds 9. Methylene Chloride 10. Methyl Ethyl Ketone 11. Methyl Isobutyl Ketone 12. Nickel and its compounds 13. Tetrachloroethylene 14. Toluene 15. 1,1,1 - Trichloroethane 16. Trichloroethylene 17. Xylenes

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Table 6-2

Environmental Effects Abroad

(FGS-Turkey, Table 17-1)

	Analyses Of Overseas Actions	
	Action	Analyses Required
a.	Major DOD actions significantly affecting the environment of the geographic areas outside the jurisdiction of any nation (i.e., outside any economic zone, fishery zone, territorial sea, or other claim established consistent with customary international law). Antarctica is considered outside the jurisdiction of any nation.	Environmental Impact State- ment
b.	Major DOD actions significantly affecting the environment of a foreign nation that is not participating with the United States and not otherwise involved in the action.	Environmental Review or Environmental Study
c.	Major DOD actions significantly affecting the environment of a foreign nation in which the actions provide, to that nation, a product or physical project producing a principal product or an emission or effluent that is prohibited or strictly regulated by Federal law in the United States because its toxic effects on the environment create a serious public health risk.	Environmental Review or Environmental Study
d.	Major DOD actions significantly affecting the environment of a foreign nation in which the actions provide, to that nation, a physical project that is prohibited or strictly regulated by Federal law in the United States to protect against radioactive substances.	Environmental Review or Environmental Study
e.	Major DOD actions that significantly affect natural or ecological resources of global importance designated for protection by the President or, in the case of such a resource protected by interna- tional agreement binding on the United States, by the Secretary of State. Recommendations to the President in such cases will be accompanied by the views of the Council on Environmental Quality and the Secretary of State.	Environmental Impact State- ment, Environmental Review, or Environmental Study
f.	Major DOD actions affecting only the environment of a partici- pating or otherwise involved foreign nation and that do not involve emissions, effluents that are prohibited or strictly regu- lated by Federal law in the United States, or resources of global importance that have been designated for protection.	No formal document required.

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Table 6-3

Minimum Building Sound Level Requirements and Acceptable Land Uses

Facility	Outdoor Noise Environment (L _{dn} /L _{eq} in dB(A))				
	85-89	80-84	75-79	70-74	65-69
Family housing	No	No	No	NLR30 ⁽⁴⁾	NLR25 ⁽⁴⁾
Bachelor housing	No	No	NLR35 ⁽⁴⁾	NLR30 ⁽⁴⁾	NLR25 ⁽⁴⁾
Transient Lodging - Hotel, Motel, etc.	No	No	NLR35 ⁽⁴⁾	NLR30 ⁽⁴⁾	NLR25 ⁽⁴⁾
*Classrooms, Libraries, Churches	No	No	No	NLR30	NLR25
*Offices and Administration Buildings - Military	NLR40	NLR35	NLR30	NLR25	Yes
*Offices - Business and Professional	No	No	NLR30	NLR25	Yes
Hospitals, Medical Facilities, Nursing Homes (24-h occupancy)	No	No	No	NLR30	NLR25
*Dental Clinic, Medical Dispensaries	NLR40	NLR35	NLR30	NLR25	Yes
*Outdoor Music Shells	No	No	No	No	No
*Commercial and Retail Stores, Exchanges, Movie Theaters, Restaurants and Cafeterias, Banks, Credit Unions, Enlisted Member (EM)/ Officer Clubs	No	No	NLR30	NLR25	Yes
*Flight Line Operations, Maintenance and Training	NLR35 ⁽⁵⁾	NLR30 ⁽⁵⁾	Yes	Yes	Yes
*Industrial, Manufacturing and Laboratories	No	NLR35 ⁽⁵⁾	NLR30 ⁽⁵⁾	NLR25 ⁽⁵⁾	
*Outdoor Sports Arenas, Outdoor Spectator Sports	No	No	No	Yes ⁽¹⁾	Yes ⁽¹⁾
*Playgrounds, Active Sport Recreational Areas	No	No	No	Yes	Yes
*Neighborhood Parks	No	No	No	Yes	Yes
*Gymnasiums, Indoor Pools	No	NLR30	NLR25	Yes	Yes
*Outdoor - Frequent Speech Communication	No ^(2,3)	No	(2,3)	No .	No
*Outdoor - Infrequent Speech Communication	No	(2,3)	No	(2,3)	Yes
Livestock Farming, Animal Breeding	No	No	No	Yes	Yes
*Agricultural (except livestock)	Yes ⁽³⁾	Yes ⁽³⁾	Yes	Yes	Yes

(FGS-Turkey, Table 10-1)

*For detailed design, the L_{eq} for the appropriate period of usage is the preferred measure of the noise environment.

Yes - Land use compatible with noise environment. No special noise control restriction. Normal construction appropriate.

Table 6-3 (continued)

- NLR Appropriate noise level reduction where indoor activities predominate.
- No Land use not compatible with noise environment, even if special building noise insulation provided.

KEY:

- (1) Land use is acceptable, provided special sound reinforcement systems are installed.
- (2) Land use may be acceptable, provided special speech communication systems are used.
- (3) Land use may be acceptable provided hearing protection devices are worn by personnel. Check applicable hearing damage regulations.
- (4) Although it is recognized that local conditions may require residential uses in these areas, this use is strongly discouraged in L_{dn} 70-74 and L_{dn} 75-79 and discouraged in L_{dn} 65-69. The absence of viable development options should be determined. NLR criteria will not eliminate outdoor environment noise problems, and, as a result, site planning and design should include measures to minimize this impact, particularly where the noise is from ground level sources.
- (5) The NLR must only be incorporated into the design and construction of portions of these buildings where the public is received, where office areas and noise sensitive work areas exist, or where the normal noise level is low.

Table 6-4

ODCs Subject to AF Policy Letter, 7 January 1993

(AF Policy Letter, 7 January 1993)

HALONS

Halon 1211, Halon 1301, Halon 1202, and Halon 1011 are used primarily as firefighting agents.

CFCs

CFCs -11, -12, -13, -111, -112, -113, -114, -115, -211, -213, -214, -215, -216, and -217 are used primarily as refrigerants and cleaning solvents.

OTHER CONTROLLED SUBSTANCES

Carbon tetrachloride and methyl chloroform are used primarily as cleaning solvents. Methyl bromide is used as pesticide and fumigant.

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Table 6-5

Ozone Depleting Chemicals to which AFI 32-7080 Applies (AFI 32-7080, A2.1)

Halocarbon Number	Molecular Formula	Name
Se	ction A: Class I Ozone Depleti	ing Chemicals
CFC-11	CCl ₃ F	Trichlorofluoromethane
CFC-12	CCl ₂ F ₂	Dichlorodifluoromethane
CFC-113	C ₂ Cl ₃ F ₃	Trichlorotrifluoroethane
CFC-114	C ₂ Cl ₂ F ₄	Dichlorotetrafluoroethane
CFC-115	C ₂ ClF ₅	Chloropentafluoroethane
Halon 1211	CF ₂ ClBr	Bromochlorodifluoromethane
Halon 1301	CF ₃ Br	Bromotrifluoromethane
Halon 2402	C ₂ F ₄ Br ₂	Dibromotetrafluoroethane
CFC-13	CCIF ₃	Chlorotrifluoromethane
CFC-111	C ₂ Cl ₅ F	Pentachlorofluoroethane
CFC-112	C ₂ Cl ₄ F ₂	Tetrachlorodifluoroethane
CFC-211	C ₃ Cl ₇ F ₃	Heptachlorofluoropropane
CFC-212	C ₃ Cl ₆ F ₂	Hexachlorodifluoropropane
CFC-213	C ₃ Cl ₅ F ₃	Pentachlorotrifluoropropane
CFC-214	C ₃ Cl ₄ F ₄	Tetrachlorotetrafluoropropane
CFC-215	C ₃ Cl ₃ F ₅	Trichloropentafluoropane
CFC-216	C ₃ Cl ₂ F ₆	Dichlorohexafluoropropane
CFC-217	C ₃ ClF ₇	Chloroheptafluoropropane
Carbon Tetrachloride	CCl ₄	Tetrachloroethane
Methyl Chloroform	CHCl ₃	Trichloroethane (all isomers)
Methyl Bromide		
Sec	tion B: Class II Ozone Depleti	ng Chemicals
HCFC-12	CHCl ₂ F	Dichloromethane
HCFC-22	CHCIF ₂	Chlorodifluoromethane
CHFC-121	C ₂ HCl ₄ F	Tetrachlorofluoroethane
CHFC-122	C ₂ HCl ₃ F ₂	Trichlorodifluoroethane
CHFC-123	C ₂ HCl ₂ F ₃	Dichlorotrifluoroethane
HCFC-124	C ₂ HClF ₄	Chlorotetrafluoroethane
HCFC-131	C ₂ H ₂ Cl ₃ F	Trichlorofluoroethane
HCFC-132	C ₂ H ₂ Cl ₂ F ₂	Dichlorodifluoroethane

(continued)

Table 6-5 (continued)

Halocarbon Number	Molecular Formula	Name
HCFC-133	C ₂ H ₂ ClF ₃	Chlorotrifluoroethane
HCFC-141	C ₂ H ₃ Cl ₂ F	Dichlorofluoroethane
HCFC-142	C ₂ H ₃ ClF ₂	Chlorodifluoroethane

Table 6-6

Guidance for A-106 Compliance

Use the following list of questions to aid in determining whether the A-106 package has been completed correctly.

- 1. Is MAJCOM field correct?
- 2. Is the BASE field filled in?
- 3. Is the **PROJECT** number correct in accordance with CEV A-106 guidance letter?
- 4. Does the **MODULE IND** read PREV?
- 5. Is the TITLE one of the standard titles included in the call letter?
- 6. Is the **Nature of the PROJECT** I, E, or O? If it is E., is it fully justified? If it is O, is it an O&S project?
- 7. Is a BASE POC and a PHONE listed?
- 8. Is there an N on screen two?
- 9. Is the **Pgm FY** correct?
- 10. Does the PA amount match the PPPN?
- 11. Is the CWE entered in? For an initial entry is, it the same as the PA amount?
- 12. Is the **fund type** entered?
- 13. Is there an N in Multiple INST?
- 14. **PGM Element** for 3400, 3010, or 3020 money should be 78054. For 3600 money, it should be 65854.
- 15. Is Assessment left blank?
- 16. Is the progress code only one of the following: (for an initial entry it should be either 1 or 9)
 - 1 = project validated and funded
 - 2 = funds have been obligated
 - 6 = project canceled
 - 9 = all O&S
- 17. Is ownership type and statutory auth filled in?
- 18. Does design/plan have a year and month that the project will be RTA? Does it make sense (i.e., too late in the FY or already past)?

(continued)

Table 6-6 (continued)

- 19. Is pollutant category entered only for O&S projects?
- 20. **COMPL level** is left blank for O&S. For all other purposes, ensure the validated level is entered as follows:

Level 1 - ESDP Level 2 = ESDF Level 3 = ESDL

21. Narrative Screen, does the narrative match the PPPN and is it complete?

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INSTA	ALLA	TION:	COMPLIANCE CATEGORY:	DATE:	REVIEWER(S):
			OTHER ENVIRONMENTAL ISSUES Turkey ECAMP		
S	TATU	JS		NITC.	
NA		RMA	REVIEWER COMME	N15:	
			•		

SECTION 7

PESTICIDE MANAGEMENT

Turkey ECAMP

SECTION 7

PESTICIDE MANAGEMENT

A. Applicability of this Section

This section applies to any U.S. Air Force (USAF) installation that uses, stores, or handles pesticides. This section integrates the requirements of Department of Defense Directives (DODDs), DOD Instructions (DODIs), and Air Force Instructions (AFIs) into a single document that normally will apply to any installation that handles pesticides.

Much of the guidance for pest management involves operations and maintenance (O&M) procedures. This section combines O&M guidance and compliance matters. It is used to determine the compliance status of operations, facilities, and equipment used to store and apply pest control chemicals. The section addresses the adequacy of facilities and operating procedures, and personnel qualifications.

The regulatory requirements in this section are based on DODIs, DODDs, and AFIs that apply at overseas installations. Management Practices (MPs) are derived from U.S. Environmental Protection Agency (USEPA) regulations that are not mandatory overseas but are important to follow to preserve the health and safety of AF employees and protect the environment.

B. DOD Directives/Instructions

- Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), January 1994, Chapter 11, contains criteria regulating the use, storage, and handling of pesticides, herbicides, and defoliants at DOD installations. It does not address the use of these items by individuals acting in an unofficial capacity in a residence or garden.
- DODI 4150.7, Department of Defense Pest Management Program, 22 April 1996, sets forth the policy, responsibilities, and procedures for pest management programs. This instruction establishes the DOD policy of maintaining safe, efficient, and environmentally sound integrated pest management programs to prevent or control pests that may adversely affect health, readiness, or military operations, or damage structures, materiel, or property. The DOD Plan for the Certification of Pesticide Applicators of Restricted-Use Pesticides establishes the requirement that USAF military and civilian pest management consultant review of each installation's pest management program at least every 36 months. An Environmental Compliance Assessment and Management Program (ECAMP) assessment does not preclude such a visit. DODI 4150.7 applies outside the continental United States consistent with applicable international agreements, Status of Forces Agreements, and the FGS issued for the host nation.
- Technical Information Memoranda (TIM) supplement DODI 4150.7. They provide specific criteria and procedures for the operation of a pest management program, but they contain guidance only and are not regulatory in nature. The following TIM are appropriate to have on hand:

TIM 13 - Ultra Low Volume Dispersal of Insecticides by Ground Equipment (March 1985)

- TIM 14 Personal Protective Equipment for Pest Management Personnel (March 1992)
- TIM 15 Pesticide Spill Prevention and Management (June 1992)
- TIM 16 Pesticide Fires: Prevention, Control, and Cleanup (June 1981)

- TIM 18 Installation Pest Management Program Guide (February 1987)
 TIM 20 Pest Management Operations in Medical Treatment Facilities (October 1989)
 TIM 21 Pesticide Disposal Guide for Pest Control Shops (October 1986)
 TIM 24 Contingency Pest Management Pocket Guide (September 1991)
 TIM 25 Devices for Electrocution of Flying Insects (August 1988)
 TIM 26 Lyme Disease Vector Surveillance and Control (March 1990)
 TIM 27 Stored Products Pest Monitoring Techniques (June 1992)
 TIM 29 Integrated Pest Management In and Around Buildings (July 1994).
- Military Handbook 1028-8A, *Design of Pest Management Facilities*, 1 November 1991, includes basic criteria for planning and designing military pest control facilities.
- DOD 4145.19-R-1, *Storage and Materials Handling*, September 1979. Chapter 5, Section 4 of this regulation provides overall guidance for storage and handling of various hazardous commodities at AF installations.

C. U.S. Air Force Documents

• AFI 32-1053, *Pest Management Program*, 18 May 1994, provides guidance for pest management at AF installations. It updates, clarifies, and streamlines previous guidance on the subject and more fully emphasizes environmental impact.

D. Responsibility For Compliance

- Base Civil Engineering (BCE): assures that pest management facilities comply with all applicable USAF and DOD regulations and standards; submits annual reports; and assumes responsibility for the completion of daily records, inspections, requests for additional support, biennial physical examinations, notifications to Public Health (PH), protection of the health and safety of pest management personnel, and required training and certification/recertification of pesticide applicators. The Installation Pest Control Supervisor (i.e., pest management coordinator) within BCE is the principal individual charged with proper pesticide management at AF installations.
- Public Health (PH): determines the type, source, and prevalence of vectors and medical nuisance pests that affect the health and efficiency of personnel; recommends preventive and control measures and monitors the effectiveness of BCE pest management efforts; schedules occupational physical examinations for all BCE and golf course personnel who apply pesticides; provides Hazard Communication training to pest management personnel.
- Bioenvironmental Engineering Services (BES): sets local standards for obtaining and using personal protective equipment (PPE) for pest management personnel and trains all pest management personnel in testing the fit of respiratory protection equipment.

E. Definitions

• *Certified Pesticide Applicators* - personnel who apply or supervise the use of pesticides, and who have been authorized to do so by successfully completing a training program approved by the USEPA, followed by formal certification (FGS-Turkey 20).

- *Chemical Waste Landfill* a landfill at which a high level of protection against risk of injury to human health or the environment from migration of deposited polychlorinated biphenyls to land, water, or the atmosphere is provided by incorporating special methods for locating, engineering, and operating the landfill (FGS-Turkey 20).
- *Direct Supervision* supervision that includes being at the specific location where pest management work is conducted; providing instruction and control; and maintaining a line-of-sight view of the work performed. Certain circumstances may temporarily remove the line-of-sight view of the application of pesticide from the supervisor such as topographic constraints, vegetation constraints, or building structural constraints. Under these temporary circumstances, the supervisor shall be responsible for the actions of the pesticide applicators (DODI 4150.7, Enclosure 2).
- Disease Vector any animal capable of transmitting the causative agent of a human disease; serving as an intermediate or reservoir host of a pathogenic organism; or producing human discomfort or injury, including (but not limited to) mosquitoes, flies, other insects, ticks, mites, snails, and rodents. It is recognized that certain disease vectors are predominately economic pests that as conditions change may require management or control as a disease vector (DODI 4150.7, Enclosure 2).
- DOD-Certified Pesticide Applicator DOD military or civilian personnel certified in accordance with the DOD Plan for the Certification of Pesticide Applicators of Restricted-Use Pesticides (DODI 4150.7, Enclosure 2).
- *Hazardous Waste Profile Sheet* a document that identifies and characterizes the waste by providing user's knowledge of the waste, and/or lab analysis, and details the physical, chemical, and other descriptive properties or processes that created the hazardous waste (FGS-Turkey 20).
- *Installation Pesticide Applicator* DOD employees or contract personnel whose job responsibilities involve the application of pesticides on DOD installations and property (DODI 4150.7, Enclosure 2).
- Integrated Pest Management (IPM) the use of all appropriate technology and management techniques to bring about pest prevention and suppression in a cost-effective and environmentally sound manner (FGS-Turkey 20).

For the purposes of DODI 4150.7, a planned program, incorporating continuous monitoring, education, record-keeping, and communication to prevent pests and disease vectors from causing unacceptable damage to operations, people, property, materiel, or the environment. IPM uses targeted, sustainable (effective, economical, environmentally sound methods), including education, habitat modification, biological control, genetic control, cultural control, mechanical control, physical control, regulatory control, and where necessary, the judicious use of least-hazardous pesticides (DODI 4150.7, Enclosure 2).

- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- On-Site Supervision supervision that includes being physically located on the installation, but not necessarily at the specific worksite, during the work performance and being able to be contacted and at the worksite within 30 min (DODI 4150.7, Enclosure 2).

- *Personal Relief* pest management control efforts made by DOD personnel or their family members at their own expense for control of pests consistent with DOD and component pest management policy (DODI 4150.7, Enclosure 2).
- *Pest* arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds, undesirable vegetation, and other organisms (except for microorganisms that cause human or animal disease) that adversely affect the well being of humans or animals, attack real property, supplies, equipment or vegetation, or are otherwise undesirable (FGS-Turkey 20).

(NOTE: The term 'pest' is defined by AFI 32-1053, para 1.2.2, as a plant or animal out of place.)

• *Pest Management* - the effective, economical, and environmentally sound prevention or control of animal pests and vectors, undesirable terrestrial and aquatic plants, and plant diseases. It includes such methods as education; inspection (surveys); sanitation and proper waste management (such as use of pressure washing and self-closing compactors); proper storage of food and other pest-susceptible items; exclusion, trapping, and other mechanical or physical means of containing pests (such as using portable vacuum cleaners); pest-preventive building construction and maintenance (caulking); biological control; minimal use of pesticidal chemicals in a manner (such as containerized baits and crack and crevice application) that causes the least harm to the environment (AFI 32-1053, para 1.2.1).

For DODI 4150.7, the prevention and control of disease vectors and pests that may adversely affect the DOD mission or military operations; the health and well-being of people; or structures, materiel, or property (DODI 4150.7, Enclosure 2).

- Pest Management Consultant professional DOD pest management personnel located at component Headquarters, field operating agencies, major commands, facilities engineering filed divisions or activities, or area support activities who provide technical and management guidance for the conduct of installation pest management operations. Some pest management consultants may be designated by their component as certifying officials (DODI 4150.7, Enclosure 2).
- *Pest Management Coordinator* the individual officially designated by the Installation Commander (IC) to coordinate and oversee the installation pest management program and installation pest management plan. Pest management coordinators shall be certified as pesticide applicators if their job responsibilities require them to apply or supervise the use of pesticides (DODI 4150.7, Enclosure 2).

(NOTE: This term is understood to be synonymous with 'installation pest control supervisor,' a term which is used in AFI 32-1053 but not defined there.)

• *Pest Management Personnel* - personnel involved with activities that monitor or mitigate pest problems, including personnel that manage a pest management program, carry out pest control work (which includes selecting, mixing or applying pesticides), monitor pest populations, coordinate various activities that prevent or mitigate pest problems. This includes active duty, civilian (United States and local nationals) and contract workers directly involved with the program; it does not include persons whose contact with pesticides is limited to transporting, loading and unloading closed containers (FGS-Turkey 20).

- *Pest Management Plan* a long-range, comprehensive installation planning and operational document that establishes the strategy and methods for conducting a safe, effective and environmentally sound IPM program. Written pest management plans are required as a means of establishing and implementing an installation pest management program (DODI 4150.7, Enclosure 2).
- *Pesticide* any substance or mixture of substances used to destroy pests, control their activity, or prevent them from causing damage (FGS-Turkey 20).
- Pesticide Applicator any individual who applies pesticides or supervises the use of pesticides by others (DODI 4150.7, Enclosure 2). See also Certified Pesticide Applicator, DOD-Certified Pesticide Applicator, Installation Pesticide Applicator, and Uncertified Installation Pesticide Applicator.
- *Pesticide Handling* operations involving contact or potential contact with pesticides, including loading, unloading, transferring, mixing and applying pesticides, filling or cleaning pest management equipment, preparing pesticide waste for disposal, and pesticide spill response (FGS-Turkey 20).
- *Pesticide Waste* materials that are subject to pesticide disposal restrictions and should be treated as excess pesticides for purposes of disposal (FGS-Turkey 20):
 - 1. any pesticide that has been suspended, that does not meet specifications, or that is contaminated, improperly mixed, or otherwise unusable, whether concentrated or diluted
 - 2. used spill cleanup material
 - 3. any containers, equipment, or material that are contaminated with pesticides; empty pesticide containers that have been triple rinsed are not considered hazardous waste but are normal solid waste.
- Professional Pest Management Personnel DOD military officers commissioned in the Medical Service or Biomedical Sciences Corps or DOD civilian personnel with college degrees in biological or agricultural sciences who are in a current assignment that includes pest management responsibilities exercised regularly. DOD civilian employees also shall meet Office of Personnel Management qualification standards. Based on assignment, some professional pest management personnel are pest management consultants (DODI 4150.7, Enclosure 2).
- *Registered Pesticide* a pesticide that has been registered and approved for sale or use within the United States or the host nation (FGS-Turkey 20).
- *Restricted-Use Pesticide* (also *Restricted Pesticide*) a pesticide that has been determined to merit additional restrictions by either the United States or the host nation because it would cause unreasonable adverse effects on health or the environment (FGS-Turkey 20).
- Specially Designated Landfill a landfill at which complete long-term protection is provided for the quality of surface and subsurface waters from pesticides, pesticide containers, and pesticide-related wastes, and against hazards to public health and the environment, including a chemical waste landfill (q.v.) (FGS-Turkey 20).
- Uncertified Pesticide Applicator DOD employees who are not certified under the DOD plan during an apprenticeship period not exceeding two years and who must apply pesticides under the supervision of a DOD-certified applicator (DODI 4150.7, Enclosure 2).

• *Vector* - an arthropod or other organism that transmits a disease agent to another organism (AFI 32-1053, para 1.2.3).

PESTICIDE MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations	7-1 through 7-13	(1)(2)(3)(4)(5)(7)
Pesticide Application	7-14 through 7-35	(1)(2)(3)(4)(5)
Documentation and Notifica- tion	7-36 through 7-39	(3)(4)(5)(6)
Pest Management Facilities	7-40 through 7-56	(1)(4)(5)
Storing, Mixing, and Prepara- tion of Pesticides	7-57 through 7-68	(1)(2)(4)(5)
Highly and Moderately Toxic Pesticides	7-69 through 7-74	(1)(3)(4)(5)(6)
Disposal	7-75 through 7-78	(1)(2)(4)(5)

(a) CONTACT/LOCATION CODE:

- (1) BCE (Base Civil Engineering)
- (2) BES (Bioenvironmental Engineering Services)
- (3) BMS (Base Medical Service)/EHO (Environmental Health Office)
- (4) Pest Management Shop
- (5) Golf Course Maintenance
- (6) Base Fire Department
- (7) Base Contracting Officer

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PESTICIDE MANAGEMENT

Records To Review

- Records of pesticides purchased by the facility (purchase orders, inventory)
- · Pesticide application records
- Description of the facility's pest control program
- · Certificates of applicators of restricted-use pesticides
- · Facility applicator certification and training program
- Pesticide disposal manifests
- Installation spill plan
- Inventory of stored pesticides
- Copy of notification letter to local emergency officials of pesticides stored onsite
- Pest Management Plan

Physical Features To Inspect

- Pesticide application equipment
- · Pesticide storage areas, including storage containers
- Golf course maintenance areas

People To Interview

- BCE (Base Civil Engineering)
- BES (Bioenvironmental Engineering Services)
- BMS (Base Medical Service)/EHO (Environmental Health Office)
- Pest Management Shop
- Golf Course Maintenance
- Base Fire Department
- Base Contracting Officer

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COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Republic of Turkey ECAMP				
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997			
ALL INSTALLATIONS				
7-1. Copies of all relevant DOD directives/ instructions, USAF direc- tives, and guidance docu- ments should be maintained at the installa- tion (MP).	 Verify that the Base Staff Judge Advocate has available the host-nation FGS and relevant USAF documents. (1) (NOTE: Among the relevant documents are the following: DODI 4150.7, DOD Pest Management Program, 22 April 1996 AFI 32-1053, Pest Management Program, 18 May 1994.) 			
7-2. Pest Management personnel should have certain documents readily available (MP).	 Verify that the following are readily available to Pest Management personnel: (4)(5 TIM 13 - Ultra Low Volume Dispersal of Insecticides by Ground Equipmer (March 1985) TIM 14 - Personal Protective Equipment for Pest Management Personne (March 1992) TIM 15 - Pesticide Spill Prevention and Management (June 1992) TIM 16 - Pesticide Fires: Prevention, Control, and Cleanup (June 1981) TIM 18 - Installation Pest Management Program Guide (February 1987) TIM 20 - Pest Management Operations in Medical Treatment Facilities (October 1989) TIM 21 - Pesticide Disposal Guide for Pest Control Shops (October 1986) TIM 25 - Devices for Electrocution of Flying Insects (August 1988) TIM 26 - Lyme Disease - Vector Surveillance and Control (March 1990) TIM 27 - Stored Products Pest Management In and Around Buildings (July 1994) Military Handbook (MIL-HDBK) 1028-8A, Design of Pest Management Facilities (1 November 1991). 			
7-3. Installations must meet regulatory requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether any new regulations concerning pesticides have been issue since the finalization of the manual. (1)(2)(8) Verify that the installation is in compliance with newly issued regulations.			

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Republic of Turkey ECAMP				
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997			
7-4. Each installation must have a comprehensive pest management plan (FGS-Turkey 11-1 and DODI 4150.7, E.3.v(1)).	Verify that the installation implements and maintains a current written pest management plan. (1)(2)(4)			
7-5. Installation pest management plans must meet specific content requirements (FGS-Tur- key 11-1 and DODI 4150.7, Encl. 4, para 4b).	 Verify that the plan is a comprehensive, long-range, narrative document that: (1)(2)(4) describes all installation and satellite installation pest management requirements and programs, including those for contracts, natural resources, golf courses, and out leases, and identifies minimum pest management staffing requirements describes all IPM procedures required to monitor and control pests on the installation describes all IPM procedures for surveillance and control of disease vectors identifies all resources, such as work years, facilities, and equipment, required to support the installation pest management program identifies all pesticides (including USEPA registration numbers) approved by the component pest management consultant for use in the installation pest management 			
	 agement program describes all health and safety measures that will be taken to protect both pest management personnel and the general public from pesticide exposure and risk describes pest management functions that can be done more economically through commercial contracts and provides, or references, cost comparison analysis describes any pest management operation with special environmental consider- ations such as those that: use a restricted-use pesticide use any pesticide application that may contaminate surface or ground 			
	 water include 259 or more contiguous hectares (640 acres) in one pesticide operation may adversely affect endangered or other protected species and their habitat involve aerial application of pesticides involve permits for the use of experimental-use pesticides identifies animal control efforts for feral cats, feral dogs, or wildlife identifies active or potential vector-borne diseases and describe medical department collaboration with host nation agencies for vector surveillance and control matters identifies golf course pest management operations. 			

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COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
7-6. Installations must meet additional require- ments with regard to pest management plans (DODI 4150.7, Encl. 4, paras 2, 8d, and 8h, and AFI 32-1053, para 2.4).	Verify that the plan is reviewed and updated annually by qualified personne $(1)(2)(3)(4)$	
	Verify that the pest management coordinator formally coordinates appropriate por tions of the plan with the senior medical officer, environmental coordinator, an senior engineering officer and that these individual sign the cover sheet of the plan.	
	Verify that appropriate portions of the plan are reviewed by the Natural Resource Program Manager for consistency with the National Resources Management Plan.	
	Verify that the plan was forwarded to the cognizant component pest management consultant for review, technical approval, and signature on the cover sheet.	
	Verify that the plan has been signed and approved by the IC.	
	Verify that the plan lists all program objectives, arranged in order of priority, according to potential or actual impact on health, morale, structures, materiel, or property.	
	Verify that the plan specifically addresses the surveillance and control of insects an other arthropods in child care and food service facilities.	
	Verify that the plan clearly delineates the responsibilities for surveillance and control of medically important insects and other arthropods.	
	(NOTE: A suggested format for the plan appears in Enclosure 8 of DODI 4150.7.)	
7-7. The installation's pest management coordinator must meet specific requirements (DODI 4150.7, Encl. 4, paras 5a and 2a(3)).	Verify that the installation's pest management coordinator has an appropriate postion and educational background and has the management skills necessary to implement the installation's pest management plan. (4)(5)	
	Verify that the pest management coordinator is DOD-certified.	

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
7-8. Installations must meet specified measures of merit in the pest management program (DODI 4150.7, Encl. 3).	 Verify that the installation meets the following measures of merit: (1)(4)(5)(7) Measure of Merit 1: by the end of fiscal year (FY) 97 the installation has a pest management plan that is prepared, reviewed, and updated annually by pest management professionals Measure of Merit 2: by the end of FY 2000, the amount of pesticides applied annually on DOD installations is reduced by 50 percent from the FY 93 baseline in pounds of active ingredients (NOTE: The goal for this measure of merit must not be obtained by substituting more toxic pesticides that have lower application rates than the pesticide in use.) Measure of Merit 3: by the end of FY 98, 100 percent of installation pesticide applicators are properly certified. (NOTE: Direct hire employees have a maximum of 2 yr to become certified after initial employment; contract employees need appropriate certification when the contract is let.) 	
7-9. Installations must notify component pest management consultants whenever host nation regulators ask to inspect pest management operations (DODI 4150.7, Encl. 4, para 4c(2)).	Verify that the installation notifies the component pest management consultant when- ever host nation regulators ask to inspect pest management operations. (1)(4)(5)	
7-10. Installations must not construct buildings that have heating, ventila- tion, or air-conditioning (HVAC) ducts located below the floor (DODI 4150.7, Encl. 4, para 4c(2)).	 Verify that buildings are not constructed with HVAC ducts located in and below the floor. (1) (NOTE: This prohibition is intended to prevent accidental contamination of the ducts with termiticides.) (NOTE: Postconstruction treatment of structures with HVAC ducts is prohibited without a waiver from the component pest management consultant.) 	
7-11. Self-help programs must be managed in accordance with specific standards (DODI 4150.7, para. E.3.v.(3) and Encl. 4, para 8i(3)).	Verify that self-help programs are established for military housing when cost effec- tive and when IPM monitoring indicates the need for a self-help program. (1)(4) Verify that liquid pesticides are not issued. (NOTE: Self-help pest management materials issued may include cockroach and ant baits and/or traps, mouse traps, glue boards, and general use pesticide aerosols with crack and crevice devices as recommended by the component pest management con- sultant.)	

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
7-11. (continued)	Verify that self-help personnel provide written instructions and appropriate precau- tions beyond those on pesticide labels to military quarters' and housing occupants.	
	Verify that, if a pesticide is issued to an occupant, records are maintained.	
7-12. Pest management and disease vector con- trol during military con- tingency operations, readiness training exer- cises, and deployments must meet specific stan- dards (DODI 4150.7, Encl. 4, para 9).	Verify that pesticides are applied consistent with the policies and procedure described in DODI 4150.7 during military contingency operations, readiness training exercises, and deployments. (1)(4)	
	Verify that individuals who apply pesticides in these situations are certified in accordance with the DOD Plan for the Certification of Pesticide Applicators of Restricted Use Pesticides or are under the direct or on-site supervision of a certified individual	
	(NOTE: Shipboard independent duty technicians and other military personnel whe have received special training for limited site application of preselected pesticide during military operations or deployments are exempt from the certification require ment, but they must be fully trained.)	
7-13. Pest management consultants must provide the guidance needed to protect all closing or closed facilities from pests from the beginning of deactivation until property disposal (DODI 4150.7, Encl. 4, para 8j).	Verify that pest management consultants provide the guidance needed to protect al closing or closed facilities from pests from the beginning of deactivation until property disposal. (1)(4)	
PESTICIDE APPLICATION		
7-14. Installations must use approved pesticides only (FGS-Turkey 11- 4.A and 11-4.B; DODI 4150.7, para E.3.v(6) and Encl. 4, para 6a(2)).	Verify that pesticides that are used at the installation are approved for stocking by th Armed Forces Pest Management Board (AFPMB) or other cognizant DOD pes management authority. (4)(5)	

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
7-15. Certain information must be included on ordering documents in order to make sure that no one buys or issues nonapproved pesticides (AFI 32-1053, para 3.5.3.).	Verify that advice code 2B is used on ordering documents to tell Supply that it may not substitute another product for the requested item. (4)(5)	
7-16. Installations must follow specific restrictions when ordering pesticides and application equipment (AFI 32-1053, para 3.5.2.).	Verify that standard pesticide application equipment is ordered from Federal supply catalogues. (4)(5)	
	Verify that only pesticides from the Federal listings approved by the AFPMB and the preapproved Work Information Management System (WIMS) Air Force (AF) master inventory are used.	
	Verify that the installation has sought and received Major Command (MAJCOM) approval before ordering or using nonstandard, locally purchased pesticides or application equipment.	
7-17. Installations must use the least toxic but effective product in their pest management efforts (FGS-Turkey 11-1).	Verify that, where the use of pesticides is warranted, the installation uses the least toxic but effective product. (4)(5)	
7-18. Paint containing insecticides is prohibited from use on DOD property (DODI 4150.7, Encl. 4, para 6f).	Verify that neither interior nor exterior paint that contains pesticides is used on the installation. $(1)(4)(5)$	
	(NOTE: This prohibition also applies to insecticides formulated and labelled for use as paint additives.)	
	(NOTE: Paints containing fungicides as mildew inhibitors may be used when the application directions specify no special restrictions due to the fungicide. Approved marine anti-fouling compounds or coatings may be applied to protect the surfaces of watercraft.)	
7-19. The use of regularly scheduled, periodic pesticide applications and of preventative pesticide treatments is prohibited (DODI 4150.7, Encl. 4, para 6g).	Verify that the installation does not perform regularly scheduled, periodic pesticide applications. (4)(5)	
	(NOTE: This prohibition does not apply in situations where the installation pest management plan clearly documents that no other technology or approach is avail- able to protect personnel or property of high value.)	

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
7-19. (continued)	Verify that preventative pesticide treatments are not used unless the component pe management consultant has given approval based on current surveillance informa- tion or records documenting past disease vectors or pest problems that require th approach.	
7-20. Installations must use recyclable and refillable pesticide containers and closed pesticide mixing and transfer systems as much as possible (AFI 32-1053, para 2.4.11.).	Verify that the installation uses recyclable and refillable pesticide containers an closed pesticide mixing and transfer systems as much as possible. (4)(5)	
7-21. Pest management personnel must use all pesticides according to label directions and use equipment according to the manufacturer's instructions (AFI 32-1053, para 3.5.4.).	Verify that pest management personnel use all pesticides according to label dire tions and use equipment according to the manufacturer's instructions. (4)(5)	
7-22. Pesticide applicators must meet certification requirements (FGS-Turkey 11-2; DODI 4150.7, para E.3.v(4) and Encl. 4, para 5b; and AFI 32-1053, para 2.4.3).	Verify that pesticide applicators are certified in accordance with DODI 4150.7, DO Pest Management Program and the DOD Plan for the Certification of Pesticid Applicators of Restricted-Use Pesticides. (4)(5) Verify that personnel who are undergoing apprenticeship training, but are not yet ce tified, apply pesticides only under the direct supervision of a certified pesticide appli- cator.	
	(NOTE: Uncertified but trained pest management personnel may apply general-u pesticides under the supervision of certified personnel.)	
	 (NOTE: After receiving training from pest management personnel, nonpest-management personnel may apply pesticides in the following situations: adult military housing occupants and facility building managers may appaproved self-help pesticides military personnel may apply approved arthropod repellents (aerosol, cremilotion, stick) military personnel may apply approved aerosol insecticide for quarantine insection on aircraft.) 	
	Verify that neither prisoners nor volunteer workers are assigned to apply pesticides	

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
7-22. (continued)	Verify that contractor personnel are certified prior to beginning the job.
7-23. DOD-certified pes- ticide applicators must be recertified every 3 yr (DODI 4150.7, Encl. 4, para 5b(3).	Verify that DOD-certified pesticide applicators are recertified every 3 yr. (1)(4)(5)
7-24. Restricted-use pes- ticides may be applied only by or under the	Verify that restricted-use pesticides are applied only by or under the direct supervi- sion of certified pesticide applicators. (4)(5)
direct supervision of cer- tified pesticide applicators (FGS-Turkey 11-4.C and AFI 32-1053, para 2.4.3.)	(NOTE: See Table 7-1 for a list of restricted-use pesticides.)
7-25. Medical treatment facilities personnel may neither store nor use pesticides (AFI 32-1053, para 2.6.).	Verify that medical treatment facilities personnel neither store nor use pesticides. (2) (NOTE: This prohibition does not apply to disinfectants or germicides.)
7-26. All pesticide applicators must participate in	Verify that all pesticide applicators are included in a medical surveillance program. (3)(4)(5)
a medical surveillance program (FGS-Turkey 11- 3; AFI 32-1053, para	Verify that all BCE personnel who apply pesticides receive a baseline physical exam- ination and an interview with Public Health within 30 days after they arrive.
2.4.9.).	Verify that the program for pesticide applicators includes:
	 baseline physical examination with a cholinesterase test annual physical at a minimum, quarterly physical and cholinesterase test for personnel who work with organophosphates or carbamate pesticides.
	Verify that all pest management personnel are provided with PPE that is appropriate for the work they perform and the types of pesticides to which they may be exposed. (4)
provided with PPE (FGS- Turkey 11-7).	

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
7-28. Specific operational practices should be	Verify that health and safety procedures emphasizing good work habits, reduction or elimination of hazards, and use of PPE are followed. (4)(5)	
observed in dealing with pesticides (MP).	Verify that protective clothing and equipment are stored away from chemical areas.	
	Verify that respirator cartridges/canisters are changed at appropriate intervals.	
	Verify that periodic fit testing of respirators is conducted.	
7-29. Pest management	Verify that overalls are kept clean at all times. (4)(5)	
personnel who mix and apply pesticides must meet specific require- ments with regard to PPE and clothing (AFI 32- 1053, para 3.4).	Verify that shop washing machines and dryers are used or that any clothing sent to base laundry services is clearly identified as being contaminated with pesticides.	
7-30. Individuals who handle pesticides must wear an approved respiratory device (DOD 4145.19-R-1, para 3-415a(6) and 3-415a(7)).	Verify that all personnel who handle pesticides wear an approved respiratory device that is appropriate for protection against the pesticides they use. (4)(5) Verify that all respirators, gas masks, cartridges, and canisters are Occupational Safety and Health Administration/Mine Safety and Health Administration (OSHA/ MSHA) approved for the specific pesticide being handled.	
	(NOTE: Paint respirators do not provide protection from pesticide vapors.)	
7-31. Installations must	Verify that only pest management personnel use pest control vehicles. (4)(5)	
meet specific require- ments with regard to their pest control vehicles (AFI 32-1053, para 3.6).	Verify that pest management vehicles are painted with a chemical-resistant coating (similar to fire department vehicles) and equipped with plastic bed liners.	
(A1152-1055, para 5.0).	Verify that vehicles are equipped with locking compartments for safe handling, stor- age, and transport of pesticides.	
	(NOTE: A telephone maintenance truck will suit the purpose.)	
	Verify that the truck carries emergency phone numbers and a spill cleanup kit.	
	Verify that placards are attached to trailer-mounted sprayers that identify the pesti- cide that is being applied.	
	Verify that all pesticide dispersal equipment is kept in the BCE pest management section.	
	(NOTE: Equipment at base golf courses that have certified pesticide applicators is exempt from this requirement.)	

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
7-31. (continued)	Verify that vehicles (prime movers) used for fogging, misting, dusting, or ultra-low volume (ULV) application are equipped with air conditioning.
7-32. Equipment used for pesticide applications should be dedicated to the pest management operation (MP).	Verify that such vehicles and dispersal equipment are used solely in support of pest management activities. (4)(5)
7-33. Insecticides and termiticides must not be injected into the soil to control subterranean termites in any military buildings with subslab or in-slab heating, ventilation, or air conditioning ducts (AFI 32-1053, para 2.4.11.).	Determine whether pesticide applications are undertaken to control subterranean ter- mites. (1)(4)
	Verify that no subterranean termite control is undertaken for the types of buildings listed.
	(NOTE: This prohibition does not apply if such systems are made inoperable and duct registers are blocked to prevent air flow.)
7-34. Installations must ensure the prevention of damage to wild-life from pesticide applications (DOD 4145.19-R-1, para 3-417).	Verify that basic precautions are observed that prevent drift of pesticides to the following: $(1)(2)(4)(5)$
	 wooded areas occupied by wildlife land area not intended for treatment fish-bearing waters.
	Verify that the installation guards against runoff or washoff by rain from treated areas to fish-bearing waters.
7-35. Public safety should be ensured when applying or using pesticides (MP).	Verify that hazardous exposure to the general public has been eliminated by: (4)(5)
	 posting appropriate signs for treatment area scheduling low-use periods or restricted usage for a number of days following water-use restrictions and reentry times according to the pesticide labels.

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DOCUMENTATION AND NOTIFICATION	
7-36. Copies of material safety data sheets (MSDSs) for all pesticides must be available at the storage and holding facility (FGS-Turkey 11-6.D).	Verify that MSDSs are available at the storage and holding facility for all pesticide used at the installation. (4)(5)
7-37. Records must be maintained and summary	Verify that WIMS pesticide software is used to track pesticide inventories and pest cide applicator certifications. (4)(5)
reports written for pest management activities	Verify that daily pesticide use is recorded on the WIMS pesticide software.
(AFI 32-1053, para 2.4.13 and DODI 4150.7, para E.3.h.).	(NOTE: DD Forms 1532 and 1532-1 may be used if WIMS is not on-line.)
	Verify that historical data are kept on pesticide application in accordance with A Force Manual (AFM) 37-139, <i>Record DispositionStandards</i> (formerly Air Force Regulation (AFR) 4-20, volume 2).
	Verify that Quarterly Reports are sent no later than 15 days after the close of quarta to the MAJCOM.
	Verify that the Quarterly Reports include the following:
	 pesticide inventory data pesticide applicator certification data pesticide application data (equivalent of Report Control Symbol (RCS) DL P&L[A&AR]1080) for all pest management operations on AF real property: pest management shop self-help pest control roads and grounds golf course contractors forestry lessee and land permit holders.

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7-38. Installations must meet additional record keeping requirements (DODI 4150.7, para E.3.v(7) and Encl. 4, para 10).	Verify that records of all pest management operations performed on the installation are properly maintained and reported to the component pest management consultant. (4)(5) Verify that the records:
10).	 account for all shop operations and provide a historical record of pest management operations and pesticide applications for each building, structures, or outdoor site include information on kinds, amounts, uses, dates, places of application, and applicators' names and certification numbers include all pesticide application performed on the installation, including work done on golf courses by nonappropriated fund activities, by contract services, and as a part of leases and land management and forestry programs as well as the work performed by the installation pest management shop.
	Verify that applications performed during military operations, excluding arthropod skin and clothing repellant, are recorded.
	Verify that DD Form 1532, Pest Management Report, or an equivalent computer product, is produced monthly using the DD Form 1532-1 information.
	Verify that these records are archived after 2 yr for permanent retention.
	(NOTE: Pesticides applied by installation personnel for their own relief are excluded from the recordkeeping requirements.)
7-39. Notification must be made and/or approval received for certain application activities (AFI 32-1053, para 2.4.10 and 2.4.12.).	Verify that PH is notified prior to any pesticide applications in food preparation or consumption facilities, medical facilities, or child development centers. (3)(4)(6) Verify that PH and the fire department are notified prior to any fumigation activities.
	Verify that PPI and the me department are notified prior to any fullingation activities. Verify that the Installation Pest Control Supervisor (i.e., pest management coordina- tor) coordinates all fumigations with installation medical, fire, security police, and safety personnel.
	Verify that no internal combustion or electrical power-driven spraying machines for aerosol or mist sprays are used inside buildings without approval from BES and the installation Fire Chief.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
PEST MANAGEMENT FACILITIES	
7-40. Pesticide management facilities and service vehicles must be provided with spill kits (MIL-HDBK 1028-A, para 3.5.2.2, implementing FGS-Turkey 11-6.A and 11-6.B).	Verify that pesticide management facilities and service vehicles are provided wit spill kits. (4)(5)
7-41. Installations must include certain features in pest management facilities (MIL-HDBK 1028-A, paras 3.1.3, 3.1.4.3, and 3.4.8, implementing FGS-Turkey 11-6.A).	 Verify that pest management facilities include at least the following: (1)(4) clean areas (office, vestibule and airlock (where appropriate, given weather conditions), and mechanical and electrical spaces) pesticide handling areas (storage and mixing rooms) transitional areas (dressing area, shower and locker rooms, toilet, laundry, an cleaning gear room) an outdoor hardstand and parking apron for vehicles and equipment.
7-42. Pest management facilities must have security fencing and gates (MIL-HDBK 1028-A, para 3.4.6, implementing FGS-Turkey 11-6.A).	 Verify that a climb-resistant chain link fence prevents unauthorized entry. (1)(4) (NOTE: The fence may be omitted if other security measures, such as bars or heavy gauge wire mesh over the windows, are taken.) Verify that the fence is at least 7 ft (2.13 m) high, without top rail. Verify that the fence fabric is twisted and barbed at the top and bottom. Verify that security gates to the fence are kept locked.
7-43. Holding tanks are prohibited in new construction (MIL-HDBK 1028-A, para 3.5.2.3, implementing FGS-Turkey 11-6.A).	Verify that the facility has no drainage to holding tanks. (4)

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7-44. Pest management facilities must be located in accordance with spe- cific criteria (MIL- HDBK 1028-A, para 3.4.1 and 3.4.2, imple- menting FGS-Turkey 11- 6.A).	 Verify that pest management facilities are located away from congested areas. (1)(4) Verify that new construction results in isolated, single-purpose structures. Verify that pest management facilities are located a minimum of 200 ft (61 m) from surface water, existing wells and cisterns, and 100-yr flood plains. Verify that the facility is located downhill from the above sensitive areas. (NOTE: Diking must be provided if space is limited.) Verify that the facility is not located uphill from potable water sources or continuously occupied structures. (NOTE: Facilities should not be located over aquifers (subsurface potable water 	
7-45. Pest management facilities must meet specific standards with regard to accessibility, grading, and parking (MIL-HDBK 1028-A, para 3.4.3 through 3.4.5, implementing FGS-Turkey 11-6.A).	 supplies), unless the aquifer is adequately protected through containment measures.) Verify that the facility is located at least 100 ft (30.4 m) from other structures. Verify that vehicles carrying supplies or pulling trailer-mounted dispersal equipment have access to the facility. (1)(4) Verify that the facility is accessible to vehicles and pedestrians on at least two sides. Verify that runoff from fire-fighting is prevented from reaching ponds, lakes, streams, or rivers. (NOTE: Diking, if provided, is recommended for large pest management facilities only.) Verify that there is adequate space to park all pesticide dispersal equipment inside the pest management area, under cover. Verify that the part of the compound used for travel and vehicle parking is covered with gravel or paved. Verify that employee parking, if provided, is located outside the security fence or perimeter. 	

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7-46. The arrangement of spaces in pest manage- ment facilities must meet specific requirements (MIL-HDBK 1028-A, para 3.1.3 and 3.1.4.3, implementing FGS-Tur- key 11-6.A).	Verify that arrangement of spaces allows workers to arrive in a clean area, dress for hazardous exposure in the change area, leave through a pesticide area doorway, an retrace that path at the end of the workday. $(1)(4)$
	Verify that there is no direct access between the office and the pesticide storage an mixing areas.
	Verify that doorways are arranged so that no pesticide need be carried through clea areas.
	Verify that the mixing room is located adjacent to the storage area and the equipment storage area (if indoors).
	Verify that the mixing room is accessible through the corridor to the shower an locker rooms and the exterior.
7-47. Installations must meet specific requirements with regard to the foundations, floor slabs, and floor finishes in pest management facilities (MIL-HDBK 1028-A,	Verify that there are no floor drains in the interior pesticide areas. (1)(4)
	Verify that, in areas where pesticides are handled or stored, floors slope (3/100) fro sills to the center.
	Verify that, if the floor does not slope, a 4-in. (102-mm) concrete curb is provided the pesticide areas.
para 3.1.5.1, implement- ing FGS-Turkey 11-6.A).	Verify that exterior slabs slope to a sump with a closeable drain located not mothan 6 ft (1.829 m) from the outer margin of the washstand.
	Verify that exterior ramps slope downward from exterior flat (flushed) door sills.
	(NOTE: The intent of these provisions is to provide containment for at lea 110 percent of the capacity of the largest bulk liquid pesticide container anticipate for the facility.)
	Verify that no utility, heating, or ventilation ducting is located in or below slabs.
	Verify that pesticide concentrates and finished (formulated) materials are prevented from entering the sanitary or storm sewer systems.
	Verify that concrete floors are finished with a nonabsorbent nonskid finish.
	(NOTE: Change rooms and office floors may be tiled.)
	Verify that the floors in both the storage and mixing areas are covered with nonsk epoxy sealant or are otherwise made impermeable.

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meet specific require- ments with regard to the exterior walls of pesti- cide management facili- ties (MIL-HDBK 1028-A, para 3.1.5.2, implement- ing FGS-Turkey 11-6.A). 7-49. Installations must meet specific require- ments with regard to the doors and windows in	REVIEWER CHECKS: August 1997 Verify that exterior walls are constructed of metal, concrete, or masonry. (1)(4) Verify that the interior surfaces of exterior walls are constructed of metal, coated concrete, or masonry. Verify that no porous surface finishes are used. Verify that exterior doors are self-locking and self-closing with weather stripping.
meet specific require- ments with regard to the exterior walls of pesti- cide management facili- ties (MIL-HDBK 1028-A, para 3.1.5.2, implement- ing FGS-Turkey 11-6.A). 7-49. Installations must meet specific require- ments with regard to the doors and windows in	Verify that the interior surfaces of exterior walls are constructed of metal, coated concrete, or masonry. Verify that no porous surface finishes are used. Verify that exterior doors are self-locking and self-closing with weather stripping.
meet specific require- ments with regard to the doors and windows in	
1028-A, para 3.1.5.3, implementing FGS-Tur- key 11-6.A).	 (1)(4) Verify that doors have locks that prevent unauthorized entry. Verify that flat (flush) sills are provided for all doors between the mixing and storage areas. Verify that the facility has a 9 x 9 ft (2.74 x 2.74 m) overhead garage door with weather stripping. (NOTE: Higher doors may be necessary to accommodate high-mast equipment.) Verify that, if the garage is separate from the pesticide mixing and storage areas, a flat (flush) sill is provided for the garage doorway. Verify that, if the garage is not separate from the pesticide mixing and storage areas, a ramp to a 4 in. (104 mm) high sill is provided. Verify that there is a slope away from the exterior of the door to prevent rain water from entering the facility. Verify that the pest management facility has nonporous framed windows that are double glazed, where appropriate, with a thermal barrier feature. Verify that, if the facility is not surrounded by a climb-resistant chain link fence and security gates, it has interior security mesh windows. (NOTE: It is permissible to have no windows as an alternative.) Verify that drop ceilings are not used in pesticide areas.

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7-50. A fire extinguisher must be provided by the door between the storage and mixing areas (MIL-HDBK 1028-A, para 3.7.1, implementing FGS-Turkey 11-6.A).	Verify that a fire extinguisher is located by the door between the storage and mixing areas. (4)
7-51. Drains from pesticide mixing areas must not be connected to septic systems, sanitary sewers, or stormwater systems (MIL-HDBK 1028-A, para 3.5.2.5, implementing FGS-Turkey 11-6.A).	Verify that no pesticide mixing area is connected to septic systems, sanitary sewers or stormwater systems. (1)(4)
7-52. Pesticide management areas must have backflow prevention devices (MIL-HDBK 1028-A, para 3.5.2.10 and 3.5.2.11, implementing FGS-Turkey 11-6.A).	 Verify that reduced pressure backflow prevention devices are installed on plumbing that provides a source of water for filling pesticide dispersal equipment tanks. (1)(4) Verify that permanent hose bibs (overhead filling pipes) have a discharge hose and an approved backflow prevention device. (NOTE: The hose bib requirement applies to outdoor washdown areas of medium and large facilities.)
7-53. Mixing and storage areas must have a ventilation system separate from that in the rest of the facility (MIL-HDBK 1028-A, para 3.5.4.2, implementing FGS-Turkey 11-6.A).	 Verify that mixing and storage areas have a ventilation system separate from that is the rest of the facility. (1)(4) Verify that the system is provided with a roof-mounted, centrifugal fan system selected for a minimum of six air changes per hour. Verify that fans discharge vertically. Verify that replacement air is heated to 55 °F (13 °C). Verify that the ventilation system has a control switch with a light to indicate ON a the entrance to the pesticide handling areas.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
7-53. (continued)	Verify that the control switch has a sign that reads as follows:
	VENTILATION SYSTEM SHOULD OPERATE CONTINUOUSLY DO NOT ENTER UNLESS VENTILATION SYSTEM HAS OPERATED FOR AT LEAST 10 MINUTES.
7-54. Mixing sinks must have slotted hood, local exhaust systems (MIL- HDBK 1028-A, para 3.5.4.2, implementing FGS-Turkey 11-6.A).	Verify that the mixing sink has a slotted hood, local exhaust system. (4)
7-55. Outdoor hard- stands and parking aprons for vehicles must meet specific standards (MIL-HDBK 1028-A, para 3.4.8, implementing FGS-Turkey 11-6.A).	Verify that the outdoor hardstand and parking apron consists of a concrete pad sufficiently large to park a truck and trailer (at least 15×25 ft (4.57 x 7.62 m)). (1)(4)
	Verify that the hardstand pad slopes (3/100) to a sump fitted with a removable grate cover suitable for the anticipated vehicular traffic load.
	Verify that the sump is sufficiently large to contain a minimum of 110 percent of the capacity of the largest bulk liquid pesticide container anticipated to be used at the facility.
	Verify that there is a curb at least 4-in. (102-mm) high at the low edge of the pad to direct liquid into the sump.
	Verify that, if an industrial sewer is available, a 3-in. (75-mm) sump drain is pro- vided.
	Verify that, if a connection to an industrial sewer exists, the sump has a ball value in the sump drain to control discharge.
	Verify that the value is located adjacent to the sump in a pit with a grate cover.
	Verify that the ball valve is normally closed and manually opened.
	Verify that, if no industrial sewer is available, a small section of removable grate is provided to accommodate a hose for recovering sump contents.
	Verify that the hardstand area has an elevated hose bib (fill pipe) of 1.5 to 2 in. (38 to 51 mm) diameter.
	(NOTE: This requirement applies if application equipment with tanks 50 gal (189.9 L) or larger will be used at the facility.)

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7-55. (continued)	Verify that the hardstand area has an emergency eyewash and a deluge shower wit manually operated, delayed-closing valves located adjacent to the mixing site.
	(NOTE: This requirement does not apply if devices inside the facility are accessible within 10 s from the outdoor mixing site.)
	(NOTE: The hardstand area may be provided with a canopy roof to protect parke vehicles and equipment and to minimize the accumulation of water.)
7-56. Pesticide management facilities must meet	Verify that identification signs are provided in appropriate rooms and buildings an on fences. $(1)(4)(5)$
specific requirements with regard to signs (MIL-HDBK 1028-A,	(NOTE: Signs such as DANGER, POISON, PESTICIDE STORAGE AREA as suggested.)
para 3.8, implementing FGS-Turkey 11-6.A and	Verify that a NO SMOKING sign is located in pesticide areas.
11-6.B).	Verify that warning signs are provided on the exterior of the building at eac entrance.
	Verify that building identification information is visible from 100 ft (30.48 m).
	Verify that a sign is installed over the sink that reads as follows:
	DO NOT DISCHARGE PESTICIDES INTO THE SINK.
	Verify that a sign is posted at the entrance(s) to toilets that reads:
	WASH HANDS BEFORE USING TOILET.
	Verify that the hardstand has a sign that reads as follows:
	CLOSE DRAIN WHILE HANDLING PESTICIDES ON HARDSTAND.
	Verify that a sign is provided near the hardstand's pit valve stating:
	RECOVER PESTICIDE SPILLS USE VALVE TO DRAIN WASHWATER AND RAIN.
	Verify that, if a flammable liquid storage cabinet is present, a sign is provided the reads as follows:
	FLAMMABLE PESTICIDES.

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7-56. (continued)	Verify that a list of the types of materials stored is posted on the outside of the stor- age area.				
	(NOTE: Copies of this list should be given to the installation on-scene hazardous waste coordinator and to the fire department.)				
	Verify that the list includes chemical names and formulations rather than brand names.				
	Verify that a sign is posted at the mixing area that requires the use of protective gloves, aprons and boots, protective eyewear or face shields, coveralls, and an approved pesticide respirator.				
STORAGE, MIXING, AND PREPARATION OF PESTICIDES					
7-57. Pesticides must be addressed in the installation spill plan (FGS-Turkey 11-5).	Verify that the installation spill plan addresses procedures and techniques used to contain and cleanup pesticide spills. (1)(2)				
7-58. Labels on pesticides must bear the appro-	Verify that labels bear the appropriate use instructions and precautionary message based on the toxicity category of the pesticide. $(4)(5)$				
priate use instructions and precautionary messages (FGS-Turkey 11-8).	(NOTE: Examples of precautionary messages include DANGER, WARNING, or CAUTION.)				
	Verify that, if foreign nationals will be using the pesticide, the precautionary mes- sages are in English and Turkish.				
7-59. Pesticide storage areas must be regularly inspected and secured to prevent unauthorized access (FGS-Turkey 11- 6.C and MIL-HDBK 1028-A, para 3.1.4.1.1, implementing FGS-Tur- key 11-6.A and 11-6.B).	Verify that storage areas are inspected regularly and secured to prevent unauthorized access. (4)(5)				

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997				
7-60. Pesticide storage areas must have a readily visible, current inventory of all items in storage (FGS-Turkey 11-6.C).	Verify that the pesticide storage area contains a readily visible, current inventory call items in storage, including items awaiting disposal. $(1)(2)(4)(5)$				
7-61. Indoor storage areas for pesticides must	Verify that pesticides are stored in an area sealed or separated from clean areas, wit direct access to the exterior. $(1)(4)(5)$				
meet specific require- ments (MIL-HDBK 1028-A, para 3.1.4.1.2,	Verify that pesticides are stored in such a way that:				
implementing FGS-Tur- key 11-6.B).	 they are off the floor, with all labels visible they are stored no more than 8-ft (2.44-m) high. 				
	Verify that lanes are present to provide effective access and inspection.				
	Verify that pesticides are stored in a dry building in which a temperature is main tained that is above 50 °F (12 °C) and below 100° F (38° C).				
	Verify that pesticides are stored separated from the following areas:				
	 mixing areas shower and locker room offices any area where personnel work for prolonged periods. 				
	Verify that no pesticide concentrates are stored in a room containing a floor drain any type.				
	Verify that storage and mixing areas have containment provided either by curbing sloped floors.				
7-62. Certain chemicals must be stored outside of occupied buildings (MIL-	Verify that all liquid fumigants are stored outside of occupied buildings in hazardou chemical lockers. (4)				
HDBK 1028-A, para 3.1.4.1.4, implementing FGS-Turkey 11-6.B).	Verify that toxic or flammable pesticides are stored on the ground floor of unoccipied buildings.				

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7-63. Outdoor storage areas for pesticides must meet specific requirements (MIL-HDBK 1028-A, para 3.1.4.1.4, implementing FGS-Turkey 11-6.A and 11-6.B).	 Verify that outdoor storage areas for pesticides are: (4) - secured and under cover - protected from radiant heating, freezing temperatures, and moisture. 			
7-64. Motor vehicles may not be stored in the same areas as pesticides (MIL-HDBK 1028-A, para 3.1.4.1.3, imple-	Verify that no motor vehicles are stored in the same area as pesticides. (4)(5) (NOTE: Wherever possible, vehicles are to be located outside or in a separate build- ing from the pesticide storage or handling area.)			
menting FGS-Turkey 11- 6.B).	Verify that, when motor vehicles are located under the same roof as the pesticide area, they are separated from the pesticide area by a minimum of 2-h fire rated construction.			
7-65. Mixing rooms must meet specific requirements (MIL- HDBK 1028-A, para 3.1.4.2, implementing	Verify that mixing rooms have electricity and hot and cold water. (4) Verify that mixing rooms have metal or plastic shelves to hold pesticides off the floor.			
FGS-Turkey 11-6.A).	(NOTE: Plastic is preferred for the pallets, and steel stands are recommended for keeping drums off the floor.) Verify that no wooden pallets are in use.			
	Verify that the work area contains a pesticide-resistant sink equipped with the fol- lowing:			
	 a closeable drain a contiguous self-draining, drip-proof counter top at least 5-ft (1.524-m) long sideboards splash panel on back an adjacent shelf for holding measuring devices and concentrates. 			
7-66. Installations should store pesticides, pesticide containers, and pesticide residues in accordance with specific restrictions (MP).	 Verify that pesticides, pesticide containers, and/or pesticide residues are stored such that: (4)(5) labeling is consistent there is no open dumping of pesticides or pesticide containers there is no open burning, except when allowed by regulation there is no water dumping or ocean dumping. 			

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Verify that the installation stores contingency pesticides under the same controlled temperature, security, and other conditions as daily use pesticides. (1)(4)			
Verify that the installation rotates contingency pesticide stocks back to pest manage ment shop inventories and replaces them with fresh chemicals annually. (1)(4)			
Verify that the installation has considered providing monitoring systems when appropriate. $(1)(4)(5)$			
(NOTE: Monitoring systems are particularly appropriate when there is no spill man agement system and when the facility handles large quantities of pesticides and i located near a sensitive area.)			
Verify that the site location, where possible, is in an area where flooding is unlikel and where hydrogeologic conditions prevent contamination of any water system b runoff or percolation. $(1)(4)(5)$			
 (NOTE: The following may be considered: proximity to surface water and to sanitary wastewater or stormwater systems location relative to floodplains, depth of groundwater, and general soil type and typical permeabilities.) 			
Verify that storage is in a dry, separate room, building, or covered area where fir protection is provided.			

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ately toxic and labeled DANGER, POISON, WARNING, or with the skull and crossbones sym- bol, should follow spe- cific practices and procedures to ensure safety (MP).	 people handling pesticides keep hands away from mouths and eyes and wear rubber gloves during all pesticide handling people handling pesticides wash hands immediately upon completion of working with pesticides and always prior to eating, smoking, or using toilet facilities inspections are made once a month to determine if any pesticide containers are leaking pesticide containers are inspected for leakage prior to handling. 				
7-72. Installations must post signs and safety pro- redures in pesticide stor- age facilities and equipment that contain or use pesticides classed as highly toxic or moder- ttely toxic and labeled DANGER, POISON, WARNING, or with the kull and crossbones sym- bol (MP).	 Verify that signs reading DANGER, POISON, and PESTICIDE STORAGE are posted on or near entries to storage facilities. (4)(5) Verify that safety precautions and accident prevention measures are posted. Verify that an inventory of pesticides is displayed outside of the storage facility, identifying all chemicals in storage. Verify that mobile equipment used for pesticide applications is labeled: CONTAMINATED WITH PESTICIDES. 				

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997				
7-73. Installations must notify the local fire department, hospitals, public health officials, and police department in writing that pesticides are being stored (MP).	 Verify that notification has been submitted and includes a statement of the hazard that pesticides may present during a fire. (3)(6) Verify that a floor plan of the storage facility, indicating the location of the difference pesticide classifications, has been submitted to the fire department. Verify that the fire chief has the home telephone numbers of the person(s) response ble for the pesticide storage facility. (NOTE: These requirements apply where large quantities of pesticides classed a highly toxic or moderately toxic and labeled DANGER, POISON, WARNING, owith the skull and crossbones symbol are being stored, or where other condition warrant.) 				
7-74. Certain precautions should be taken in the event of a fire at a pesticide storage area where pesticides are classed as highly toxic or moderately toxic and labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol (MP).	 Verify, by interviewing the fire chief, that the following precautions are taken: (6) fire-fighting personnel wear supplied air suits and rubberized clothing personnel avoid breathing or otherwise contacting toxic smoke and fumes personnel wash completely as soon as possible after encountering smoke ar fumes water used in fire fighting is contained within the storage site drainage system individuals who might be threatened by the fumes/smoke are evacuated firemen take cholinesterase tests after fighting fires involving organophospha or N-alkyl carbamate pesticides. 				
DISPOSAL 7-75. Installation pest management programs must be conducted so as to ensure that pesticides do not become hazardous wastes (DODI 4150.7, Encl. 4, para 6c and FGS- Turkey 11-9.A).	 Verify that the installation's pest management program is conducted so as to ensurt that pesticides do not become hazardous wastes. (1)(4)(5) Verify that excess USEPA registered pesticides are either: returned to the Defense Logistics Agency (DLA) Materials Return Program transferred to a DOD installation able to use the materials transferred to the servicing Defense Reutilization and Marketing Office (DRMO). (NOTE: The component pest management consultant can, if requested, provide assistance in identifying installations where usable pesticides could be used.) 				
	(NOTE: When the USEPA publishes a proposed pesticide regulatory action involving pesticide label suspension or cancellation that affects DOD, installations are required to comply with administrative procedures developed between the DLA an AFPMB.)				

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Republic of Turkey ECAMP					
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997				
7-76. If waste pesticides are generated, the installation must dispose of them in accordance with specific standards (FGS-Turkey 11-9 and AFI 32-1053, para 3.5.5).	 Verify that pesticide wastes are tested to determine if they are hazardous wastes. (1)(2)(4)(5) Verify that, if the pesticide waste is not a hazardous waste, it is disposed of in accordance with the label instructions, through DRMO, or in a specially designated land-fill under Section 9, <i>Solid Waste Management</i>. Verify that, if the pesticide is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste, it is disposed of in accordance with the pesticide is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste, it is disposed of in accordance with the pesticide is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste, it is disposed of in accordance with the pesticide is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste is a hazardous waste, it is disposed of in accordance with the label is a hazardous waste is a hazardous waste. 				
	the provisions of Section 4, <i>Hazardous Waste Management</i> . Verify that pesticide transferred to a Turkey transporter or facility is accompanied by a Hazardous Waste Profile Sheet.				
7-77. Installations must properly dispose of any clothing that is heavily contaminated with pesticides (AFI 32-1053, para 3.4.2.).	Verify that the installation properly disposes of any clothing that is heavily contami- nated with pesticides. (4)(5)				
7-78. No concentrated pesticides may be discarded to the sanitary sewer or storm drain (MIL-HDBK 1028-A, para 3.5.2.1, implementing FGS-Turkey 11-6.A and 11-6.B).	Verify that no concentrated pesticides are discarded to the sanitary sewer or storm drain. (1)(4)(5)				

Table 7-1

Restricted-Use Pesticides

(40 Code of Federal Regulations (CFR) 152.175)

The following uses of pesticide products containing the active ingredients specified below have been classified for restricted use and are limited to use by or under the direct supervision of a certified applicator.

Active Ingredient	Formulation	Use Pattern	Classification ¹	Criteria Influencing Restriction
Acrolein	As sole active ingredient. No mixtures registered.	All uses	Restricted	Inhalation hazard to humans. Residue effects on avian species and aquatic organisms.
Aldicarb	As sole active ingredient. No mixtures registered.	Ornamental uses (indoor and out- door). Agricultural crop	*do Under further	Other hazards- accident history.
		uses.	evaluation.	
Aluminum phosphide	As sole active ingredient. No mixtures registered.	do	do	Inhalation hazard to humans.
Azinphos methyl	All liquids with a concen- tration greater than 13.5 percent.	do	do	do
	All other formulations.	do	Under further evaluation.	
Carbofuran	All concrete suspensions and wettable powders 40 percent and greater.	do	do	Acute inhalation toxicity.
	All granular formulations.	Rice	Under evaluation.	
	All granular and fertilizer formulations.	All uses except rice.	do	
Chloropicrin	All formulations greater than 2 percent.	All uses.	Restricted	Acute inhalation toxicity.
	All formulations.	Rodent control.	Restricted	Hazard to nontarget organisms.
	All formulations 2 per- cent and less.	Outdoor uses (other than rodent control).	Unclassified	

Active Ingredient	Formulation	Use Pattern	Classification ¹	Criteria Influencing Restriction
Clonitralid	All wettable powders 70 percent and greater.	All uses. Molluscide uses.	do	Acute inhalation toxicity.
	All granulars and wetta- ble powders.	II	do	Effects on aquatic organisms.
	Pressurized sprays 0.55 percent and less.	Hospital antiseptics.	Unclassified	
Dicrotophos	All liquid formulations 8 percent and greater.	All uses.	Restricted	Acute dermal toxicity; residue effects on avian species (except for tree injections).
Disulfoton	All emulsifiable concen- trates 65 percent and greater, all emulsifiable concen- trates and concentrate solutions 21 percent and greater with fensulfothion 43 percent and greater, all emulsifiable concen- trates 32 percent and greater in combination with 32 percent fensul- fothion and greater.	do	Restricted	do Acute inhalation toxic- ity.
	Nonaqueous solution 95 percent and greater.	Commercial seed treatment.	Restricted	Acute dermal toxicity.
	Granular formulations 10 percent and greater.	Indoor uses (greenhouse).	do	Acute inhalation toxicity.
Ethoprop	Emulsifiable concen- trates 40 percent and greater.	do	do	Acute dermal toxicity.
	All granular and fertilizer formulations.	do	Under evaluation.	
Ethyl par- athion	All granular and dust for- mulations greater than 2 percent fertilizer formula- tions, wettable powders, emulsifiable concen- trates, concentrated sus- pensions, concentrated solutions.	do	Restricted	Inhalation hazard to humans. Acute dermal toxicity. Residue effects or mammalian, aquatic, avian species.

Table 7-1 (continued)

 Table 7-1 (continued)

Active Ingredient	Formulation	Use Pattern	Classification ¹	Criteria Influencing Restriction
Ethyl par- athion (continued)	Smoke fumigants.	do	do	Inhalation hazard to humans.
()	Dust and granular formu- lations 2 percent and below.	do	do	Other hazards- accident history.
Fenamiphos	Emulsifiable concen- trates 35 percent and greater.	do	do	Acute dermal toxicity.
Fonofos	Emulsifiable concen- trates 44 percent and greater.	All uses.	do	Acute dermal toxicity.
	Emulsifiable concen- trates 12.6 percent and less with pebulate 50.3 percent and less.	Tobacco	Unclassified	
Methami- dophos	Liquid formulations 40 percent and greater.	All uses.	Restricted	Acute dermal toxicity; residue effects on avian species.
	Dust formulations 2.5 percent and greater.	All uses.	Restricted	Residual effects on avian species.
Methidathion	All formulations.	All uses except stock safflower and sunflower.	Restricted	Residue effects on avian species.
	All formulations.	Nursery stock, safflower, and sunflower.	Unclassified	Residue effects on avian species.

Active Ingredient	Formulation	Use Pattern	Classification ¹	Criteria Influencing Restriction
Methomyl	As sole active ingredient in 1 percent to 2.5 baits (except 1 percent fly bait).	Nondomestic out- door agricultural crops, ornamen- tal and turf. All other registered uses.	Restricted	Residue effects on mammalian species.
	All concentrated solution formulations.	do	do	Other hazards accident history.
	90 percent wettable pow- der formulations (not in water soluble bags).	do	do	do
	90 percent wettable pow- der formulation in water soluble bags.	do	Unclassified	
	All granular formulations.	do	do	
	25 percent wettable powder formulations.	do	do	
Methomyl	In 1.24 percent to 2.5 per- cent dusts as sole active ingredient and in mixtures with fungicides and chlo- rinated hydrocarbon, inor- ganic phosphate and biological insecticides.	do	do	
Methyl bro- mide	All formulations in con- tainers greater than 1.5 lb.	All uses.	Restricted	Other hazards accident history.
	Containers with not more than 1.5 lb of methyl bromide with 0.25 percent to chloropicrin as an indi- cator.	Single applica- tions (nondomes- tic use) for soil treatment in closed systems.	Unclassified	
	Containers with not more than 1.5 lb having no indi- cator.	All uses.	Restricted	do

Table 7-1 (continued)

Active Ingredient	Formulation	Use Pattern	Classification ¹	Criteria Influencing Restriction
Methyl parathion	All dust and granular for- mulations less than 5 per- cent.	do	do	Other hazards-acci- dent history. All foliar applications restricted based on residue effects on mammalian and avian species.
	Microencapsulated. All dust and granular formu- lations 5 percent and greater and all wettable powders and liquids.	do	do	Residue effects on avian species. Hazard to bees. Acute dermal toxicity. Residue effects on mammalian and avian species.
Nicotine (alkaloid)	Liquid and dry formula- tions 14 percent and above.	Indoor (green- house).	Restricted	Acute inhalation toxic- ity.
	All formulations.	Applications to cranberries.	Restricted	Effects on aquatic organisms.
	Liquid and dry formula- tions 1.5 percent and less.	All uses (domes- tic and nondomes- tic).	Unclassified	
Paraquat (dichloride) and paraquat	All formulations and con- centrations except those listed below.	All uses.	Restricted	Other hazards. Use and accident history, human toxicological data.
bis(methyl- sulfate)	Pressurized spray formu- lations containing 0.44 percent Paraquat bis(methylsulfate) and 15 percent petroleum distil- lates as active ingredients.	Spot weed and grass control.	do	
	Liquid fertilizers contain- ing concentrations of 0.025 percent paraquat dichloride and 0.03 per- cent atrazine; 0.03 percent paraquat dichloride and 0.37 percent atrazine, 0.04 percent paraquat dichloride and 0.49 per- cent atrazine.	All uses.	Unclassified	

Table 7-1 (continued)

Table 7-1	(continu	ed)
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Active Ingredient	Formulation	Use Pattern	Classification ¹	Criteria Influencing Restriction
Phorate	Liquid formulations 65 percent and greater.	do	Restricted	Acute dermal toxicity. Residue effects on avian species (applies to foliar applications only). Residue effects on mammalian species (applies to foliar appli- cation only).
	All granular formulations.	Rice	Restricted	Effects on aquatic organisms.
Phosphami- don	Liquid formulations 75 percent and greater.	do	do	Acute dermal toxicity. Residue effects on mammalian species. Residue effects on avian species.
	Dust formulations 1.5 percent and greater.	do	do	Residue effects on mammalian species.
Picloram	All formulations and con- centrations except tordon 101R.	do	do	Hazard to nontarget organisms (specifi- cally nontarget plants both crop and non- crop).
	Tordon 101 R forestry herbicide containing 5.4 percent picloram and 20.9 percent 2, 4-D.	Control of unwanted trees by cut surface treatment.	Unclassified	
Sodium cyanide ³	All capsules and ball for- mulations.	All uses.	Restricted	Inhalation hazard to humans.
Sodium fluo- roacetate	All solutions and dry baits.	do	do	Acute oral toxicity. Hazard to nontarget organisms. Use and accident history.

*do means same as above (previous row).

(continued)

Active Ingredient	Formulation	Use Pattern	Classification ¹	Criteria Influencing Restriction
Strychnine	All dry baits pellets and powder formulations greater than 0.5 percent.	do	do	Acute oral toxicity. Hazard to nontarget avian species. Use and accident history.
	All dry baits pellets and powder formulations.	All uses calling for burrow build- ers.	do	Hazard to nontarget organisms.
	All dry baits, and pellets, and powder formulations 0.5 percent and below.	All uses except subsoil.	do	do
	do	All subsoil uses.	Unclassified	do
Sulfotepp	Sprays and smoke genera- tors.	All uses.	Restricted	Inhalation hazard to humans.
Zinc Phosphide	All formulations 2 per- cent and less.	All domestic uses and nondomestic uses in and around buildings.	Unclassified	
	All dry formulations 60 percent and greater.	All uses.	Restricted	Acute inhalation toxic- ity.
	All bait formulations.	Nondomestic out- door uses (other than around build- ings).	Restricted	Hazard to nontarget organisms.
	All dry formulations 10 percent and greater.	Domestic uses.	Restricted	Acute oral toxicity.

*do means same as above (previous row).

NOTES:

- ¹ Under evaluation means no classification decision has been made and the use/formulation in question is still under active review within the USEPA.
- ² Percentages given are the total of dioxathion plus related compounds.
- ³ NOTE: M-44 sodium cyanide capsules may only be used by certified applicators who have also taken the required additional training.

The provisions in this amended table were effective as of 8 August 1995.

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INSTALLATION:			PESTIC	CIDE MANA	AGEMENT			
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SECTION 8

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

Turkey ECAMP

SECTION 8

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

A. Applicability of this Section

This section applies to U.S. Air Force (USAF) installations that store, transport, dispose of, or use petroleum, oil, and lubricant (POL), including petroleum-based fuels. The section presents review action items that respond to regulations, procedures, and organizational mechanisms designed to prevent or limit the accidental release of POL materials to surface water, groundwater, or soils. Procedures to control volatile organic compounds (VOCs) from POL sources are addressed in Section 1, *Air Emissions Management*.

This section covers management of pipeline delivery systems, truck fill stands, immediate operating storage areas, and fueling/defueling flightline operations. POL materials addressed include jet fuel (JP-4, fuel oil, JP-8), aviation gasoline (AVGAS), motor gasoline (MOGAS), diesel fuel, and lubricating oils. Spill prevention and response requirements are also included here. Waste petroleum-based solvents (including PD-680) are addressed in Section 4, *Hazardous Waste Management*.

The regulatory requirements in this section are based on Department of Defense (DOD) regulations, Air Force Regulations (AFRs), and Air Force Instructions (AFIs) that apply at overseas installations. Management Practices (MPs) are derived from U.S. Environmental Protection Agency (USEPA) regulations that are not mandatory overseas but are important to follow to preserve the health and safety of Air Force (AF) employees and protect the environment.

B. DOD Directives/Instructions

• Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 9, outlines the criteria for the control and abatement of pollution from the storage, transfer, and distribution of petroleum products. Chapter 18 contains criteria for the installation spill plan and spill response.

C. U.S. Air Force Documents

- AFI 13-212, Volume 1, *Weapons Ranges*, 28 July 1994, includes a number of provisions relevant to the handling of used POL generated at air-to-surface weapons ranges.
- AFI 23-201, *Fuels Management*, 1 October 1996, provides managers at all AF activities with policy and procedures for fuels operations.
- AFI 23-502, *Recoverable and Unusable Liquid Petroleum Products*, 6 April 1994, sets goals, assigns responsibilities, and provides guidance for recovering usable and disposing of unusable liquid petroleum products. The Instruction applies to lubricating oils, aviation fuel, distillates, and gasoline.
- Air Force Manual (AFM) 85-16, *Maintenance of Petroleum Systems*, governs the maintenance of permanently installed storage and dispensing systems for petroleum and unconventional fuels.

• Air Force Technical Order (AFTO) 42B-1-23, *Management of Recoverable and Waste Liquid Petroleum Products*, provides guidelines for collecting, segregating, and processing reclaimed, recoverable, and waste petroleum products.

D. Responsibility for Compliance

- The Base Environmental Protection Committee (EPC) is usually responsible for drafting and reviewing the installation spill plan prior to its promulgation by the Base Commander and for the review and update of the plan. Often, the EPC delegates the specific preparation of the plan to the Base Civil Engineer (BCE) for implementation by the Base Environmental Coordinator (BEC).
- The Installation Response Team (IRT) responds to spills, when requested by an Installation On-Scene Commander (IOSC), and performs spill containment, recovery, cleanup, disposal, and restoration activities as directed by the IOSC. The IRT is a multidisciplinary team often including the following: BCE, BEC, Bioenvironmental Engineering Services (BES), Fire Chief, Security Police Chief, Public Affairs Officer, Base Fuels Officer, Safety Chief, and Staff Judge Advocate.
- The Base Fire Department provides support in emergency response, spill events, exercises, and fire protection activities. In addition, the department will be responsible for making periodic fire safety inspections of flammable/combustible storage and handling areas, hazardous waste storage areas, and accumulation points on the installation.
- The Safety Manager is responsible for conducting workplace safety evaluations and inspections of the handling and storage of hazardous materials and waste. The Safety Manager will provide the appropriate manager with a report of his or her findings and recommended corrective actions. The Safety Manager is also responsible for ensuring the prompt and accurate investigation of any hazardous material mishaps that result in injury or property damage.
- The Base Fuels Management Officer (BFMO) is responsible for the safe and efficient receipt, storage, handling, issuing, and accounting of all petroleum products and for all general operations and inspections.
- The BCE is responsible for the maintenance of all installed petroleum storage and dispensing systems. This responsibility often is discharged by the Liquid Fuels Maintenance (LFM) shop. The BCE also is responsible for the calibration of permanently installed meters.
- The BEC monitors all POL activities that may affect the environment and usually is responsible for the coordination of the EPC review and updates of the spill plan. The BEC often coordinates the notification of reportable spills on behalf of the IOSC.
- The BES takes samples to determine the chemical nature, pollutant concentration, and extent of each reportable-quantity spill as required for response actions and documentation.

E. Definitions

• Generating Activity - a base agency (host, tenant, or contractor) that generates recoverable or unusable petroleum products (AFI 23-502, Attachment 1, Section B).

- *Hazardous Substance* any substance having the potential to do serious harm to human health or the environment if spilled or released in a reportable quantity (RQ). A listing of these substances and corresponding RQ is contained in Table 3-1, Chart A.4. The term does not include (FGS-Turkey 20):
 - 1. petroleum, including crude POL or any fraction thereof, that is not otherwise specifically listed or designated as a hazardous substance above
 - 2. natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).
- *Hazardous Waste Fuel* a waste petroleum product mixed with a hazardous waste or exhibiting a characteristic of hazardous waste, in which there is an intent to discard (AFI 23-502, Attachment 1, Section B).
- Installation On-Scene Coordinator (IOSC) the official who coordinates and directs DOD control and cleanup efforts at the scene of a POL or hazardous substance or hazardous waste spills due to DOD activities on or near the installation. This official is designated by the Installation Commander (IC) (FGS-Turkey 20).
- Installation Response Team (IRT) a team performing emergency functions as defined and directed by the IOSC (FGS-Turkey 20).
- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- Off-Specification Product product which has one or more off-specification characteristics (e.g., color, vapor pressure, flashpoint, etc.). Off-specification products can be blended as regraded products. Off-specification products are not identified as hazardous waste fuel (AFI 23-502, Attachment 1, Section B).
- *Oil* POL of any kind or in any form, including, but not limited to, petroleum, fuel POL, sludge, POL refuse, and POL mixed with wastes other than dredged spoil (FGS-Turkey 20).
- On-Specification Product product of suitable quality for return to the base inventory. AFTO 42B-1-23, Table 3-1, Management of Recoverable and Waste Liquid Petroleum Products, sets the criteria for a suitable quality. Do not consider as off-specification if solids and water that can be removed by rotation through on-hand separators are present (AFI 23-502, Attachment 1, Section B).
- *Pipeline Facility* includes new and existing pipes, pipeline rights of way, auxiliary equipment (e.g., valves, manifolds, etc.), and buildings or other facilities used in the transportation of POL (FGS-Turkey 20).
- *POL* includes, but is not limited to, petroleum and petroleum-based substances comprised of complex blends of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, residual fuel oils, lubricants, petroleum solvents, and used oils (FGS-Turkey 20).
- *POL Facility* an installation with any individual aboveground tank of 2500 L (660 gal) or greater, aggregate aboveground storage of 5000 L (1320 gal) or greater, underground storage tank (UST) storage of greater than 15,900 L (4200 gal) or a pipeline facility as identified in the definition of a UST (FGS-Turkey 20).

- Recoverable Products products that still have useful physical or chemical properties; see Off-Specification Product and On-Specification Product (AFI 23-502, Attachment 1, Section B).
- *Recyclable Products* products determined to be surplus to AF needs that are burned for energy recovery (e.g., JP-4 contaminated with hydraulic fuel and used lubricating oil are recyclable products when burned for energy recovery as a fuel) (AFI 23-502, Attachment 1, Section B).
- Reportable Quantity (RQ) a released quantity of POL or quantities of hazardous substances that exceeds those identified in this section of the manual or in the RQ column, Table 3-1, Chart A.4 (FGS-Turkey 20).
- *Significant Spill* an uncontained release to the land or water in excess of any of the following quantities (FGS-Turkey 20):
 - 1. for hazardous waste or hazardous substance identified as a result of inclusion in Table 3-1, Chart A.4, any quantity in excess of the RQ listed therein
 - 2. for POL or liquid or semi-liquid hazardous material, hazardous waste, or hazardous substance, in excess of 416 L (110 gal)
 - 3. for other solid hazardous material, in excess of 225 kg (500 lb).
- Spill a spill can occur and must be rectified for any amount. Only significant spills need be reported. (See Significant Spill.) (FGS-Turkey 20).
- Unusable Petroleum Product product that is no longer suitable for any use on an installation due to excessive contamination or quality degradation (AFI 23-502, Attachment 1, Section B).
- Used Oil any oil or other waste POL product that has been refined from crude oil, or is a synthetic oil, has been used, and as a result of such use, is contaminated by physical or chemical impurities. Used oil exhibiting the characteristics of reactivity, ignitability, and corrosivity is still considered used oil, unless it has been mixed with other hazardous waste. However, used oil that exhibits the characteristic of toxicity is a hazardous waste and will be managed as such. In addition, used oil mixed with hazardous waste is a hazardous waste and will be managed as such (FGS-Turkey 20).
- Used Oil Burned for Energy Recovery used oil that is burned for energy recovery is termed used oil fuel. It includes any fuel processed from used oil by processing, blending, or other treatment (FGS-Turkey 20).

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations	8-1 through 8-6	(1)(2)(3)(4)(11)
POL Management	8-7 through 8-12	(1)(2)(3)(4)(5)(6)
Pipelines	8-13 through 8-18	(1)(3)(4)(7)
Discharges/Spills	8-19 through 8-21	(1)(2)(3)(4)(5)(6)
Used POL/Waste POL	8-22 through 8-26	(1)(2)(5)(8)(10)

(a) CONTACT/LOCATION CODE:

- (1) BEC (Base Environmental Coordinator)
- (2) BCE (Base Civil Engineer)
- (3) BFMO (Base Fuels Management Office)
- (4) LFM (Liquid Fuels Maintenance)
- (5) BES (Bioenvironmental Engineering Services)
- (6) Base Fire Department
- (7) Power Production
- (8) AAFES (Army/Air Force Exchange Service) Service Station Manager
- (9) Generating Activities
- (10) Vehicle Maintenance Shop
- (11) Base Staff Judge Advocate

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

Records To Review

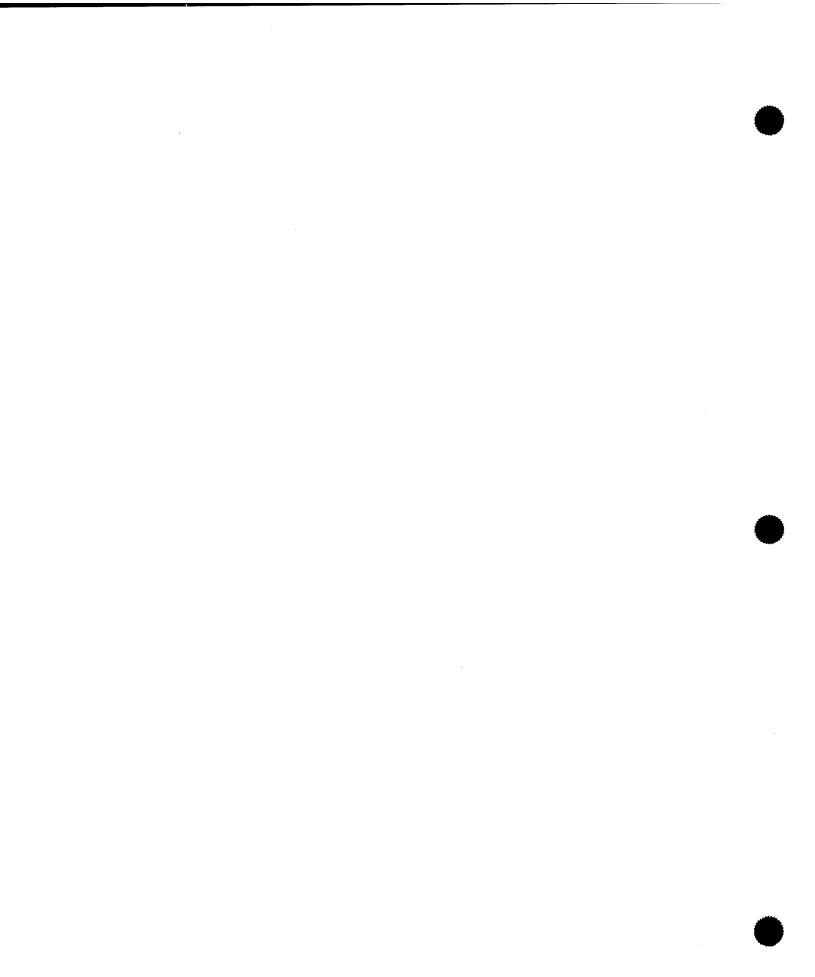
- Records of all spills, leaks, and associated site assessment/cleanup activities (for 3 yr)
- Installation spill plan
- Records of spill response training

Physical Features To Inspect

- Refueling facilities, including:
- Washrack areas
- Vehicle maintenance areas
- Oil separators
- Oil and hazardous substance sites

People To Interview

- BEC (Base Environmental Coordinator)
- BCE (Base Civil Engineer)
- BFMO (Base Fuels Management Office)
- LFM (Liquid Fuels Maintenance)
- BES (Bioenvironmental Engineering Services)
- Base Fire Department
- Power Production
- AAFES (Army/Air Force Exchange Service) Service Station Manager
- Generating Activities
- Vehicle Maintenance Shop
- Base Staff Judge Advocate



REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
ALL INSTALLATIONS	
8-1. Copies of all relevant DOD directives/ instructions, USAF direc- tives, and guidance docu- ments should be maintained at the installa- tion (MP).	 Verify that the Base Staff Judge Advocate has available the host-nation FGS and reevant USAF documents. (1)(11) (NOTE: Among the relevant documents are the following: AFI 13-212, Volume I, Weapons Ranges, 28 July 1994 AFI 23-201, Fuels Management, 1 October 1996 AFI 23-502, Recoverable and Unusable Liquid Petroleum Products, 6 Apr 1994 AFM 85-16, Maintenance of Petroleum Systems.)
8-2. Installations must meet regulatory require- ments issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	• Determine whether any new regulations concerning POL management have be issued since the finalization of the manual. (1)(2)(11) Verify that the installation is in compliance with newly issued regulations.
8-3. Installations must have in place a program for the management of recoverable and unusable liquid petroleum prod- ucts (AFI 23-502, para 6.2 through 8.7).	(NOTE: This requirement applies to lubricating oils, aviation fuel, distillates, ar gasoline.) Verify that the installation has a comprehensive program to manage the segregation and collection, reuse, or recycling of recoverable petroleum products and the dispo- tion of unusable petroleum products. (1)(3)(4) (NOTE: Documentation may be in the form of a plan or a base operating instruction

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
8-3. (continued)	Verify that the program includes:
	 specific responsibilities and criteria for the collection, storing, returning to inventory, reusing, recycling, and disposing of all unusable petroleum products and hazardous waste fuels generated at the base identification of generating activities by organization a list of all recoverable and unusable products and hazardous waste fuels generated by an organization, including source, approximate quantity, and condition specific responsibilities of base organizations the methods and facilities available to the base to collect, store, return to inventory, reuse, recycle, and dispose of products accounting procedures for recoverable and unusable petroleum products and procedures to credit organizational unusable petroleum products and procedures to credit organizational procedures for the entry, exit, and control of unusable petroleum product vehicles stress on sound conservation and property management of unusable products where feasible, specification of positive product control by designating pick-up locations, verifying pick up quantities, and whenever possible, using a single entry and exit. (NOTE: The priorities for disposition of products are: return off-specification fuel to the base inventory and blend into the original or different grade making a regraded product recycle products on base by reusing in secondary applications such as a heating fuel categorize any remaining products as surplus, send them as recyclable products to Defense Reutilization and Marketing Office (DRMO), credit DRMO sales to the base resource, recovery, and recycling (RRR) account contract with a service company to remove nonrecyclable waste from the base.) Verify that the BCE has developed procedures at the base level for the disposal of petroleum products. Verify that the generating activity decides to discard the fuel rather than reuse, recover, or recycle it, the fuel is to be manage

COMPLIANCE CATEGORY

⁽¹⁾ BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BFMO (Base Fuels Management Office) (4) LFM (Liquid Fuels Maintenance) (5) BES (Bioenvironmental Engineering Services) (6) Base Fire Department (7) Power Production (8) AAFES (Army/Air Force Exchange Service) Service Station Manager (9) Generating Activities (10) Vehicle Maintenance Shop (11) Base Staff Judge Advocate

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
8-4. BFMO must appoint a Fuels Environmental Coordinator (AFI 23- 201, para 1.5).	 Verify that BFMO has appointed a Fuels Environmental Coordinator. (3) Verify that the Fuels Environmental Coordinator carries out the following functions: follows the guidance in FGS-Turkey and the policies contained in Air Force Policy Directives (AFPDs) and AFIs consults with agencies (such as the EPC, Base Environmental Manager, BCE, BES, and Staff Judge Advocate (SJA)).
8-5. Certain equipment must be located in or near the fuels management area (AFI 23-201, para 1.14.1).	 Verify that the following are located in or near the fuels management area: (3) - a vehicle washrack equipped with an oil-water separator and located within or near the refueling unit parking area - a liquid degreasing machine capable of cleaning engines on mobile fueling equipment. Verify that the discharge from the degreaser drains into an oil-water separator.
8-6. The Fuels Management Flight Commander (FMFC) must take specific actions to ensure appropriate environmental management of fuel (AFI 23-201, A10.1)	Verify that the FMFC develops local operating procedures for collection, segrega- tion, storage, and disposition of waste and reusable bulk petroleum products in accordance with AFI 23-502, <i>Recoverable and Unusable Liquid Petroleum Products.</i> (3) Verify that the FMFC ensures that adequate spill prevention and cleanup materials are readily available.

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
POL MANAGEMENT	
8-7. All DOD installations must prepare, maintain, and implement a plan that provides for the	Verify that the installation has, maintains, and implements a plan that provides for the prevention, control, and reporting of all spills of POL, hazardous substances, and hazardous waste. $(1)(2)(5)(6)$
prevention, control, and reporting of all spills of	Verify that the prevention portion of the spill plan includes, at a minimum:
POL, hazardous sub- stances, and hazardous	- name, title, responsibilities, duties, and telephone number of the designated IOSC
waste (FGS-Turkey 9-1 and 18-1 through 18-5).	 general information on the installation, including: name
	- type or function
	 location and address charts of drainage patterns
	- designated water protection areas
	- maps showing locations of facilities
	- critical water resources
	- land uses
	- possible migration pathways
	- inventory of all storage, handling, and transfer facilities that could produce a significant spill of POL or hazardous substances; for each listing include:
	 prediction of direction and rate of flow total quantity of POL or hazardous substance that could be spilled as a
	result of major failure - inventory of all POL and hazardous substances at storage, handling, and trans-
	fer facilities - detailed description of countermeasures, including structures and equipment for
	diversion and containment of spills for each facility listed in the inventory - description of deficiencies in spill prevention and control measures at each
	listed site, including corrective measures required, procedures to be followed to correct listed deficiencies, and any interim control measures in place
	 written procedures for: operations to preclude spills of POL or hazardous substances
	 inspections recordkeeping requirements.

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
8-7. (continued)	Verify that the control section of the plan (which may be considered a contingence plan) contains, as a minimum:
	- specification of the responsibilities, duties, procedures, and resources to be use to contain and cleanup spills
	 description of immediate response actions responsibilities, composition, and training requirements of the IRT
	 procedures for IRT alert and response, to include: access to a reliable communications system for timely notification of POL or hazardous substance spill public affairs involvement
	- current roster of persons and alternates who must be notified of a spill, incluing:
	- name - organization mailing address
	 work and home telephone number without compromising security, provisions for the notification of the emergency coordinator (EC) after normal working hours procedure for notifying the IC and appropriate local authorities in the event hazard to human health and the environment
	 assignment of responsibilities for making notifications to emergency servic providers surveillance procedures for early detection of spills
	 prioritized list of critical water resources to be protected other resources available through prearranged agreements to cleanup a lar spill
	- cleanup methods, including procedures and techniques used to identify, co tain, disperse, reclaim, and remove POL, hazardous substances, or hazardo wastes
	 disposal procedures for contaminated POL, absorbent, or product procedures to be accomplished prior to resumption of operations description of general safety and fire prevention precautions for spill clean actions public affairs section.

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
8-7. (continued)	Verify that, if the installation stores hazardous waste in addition to POL, the contingency plan addresses the following:
	 names and office telephone numbers of all individuals qualified to act as an EC arrangements with local hospitals, police and fire departments, contractors, an emergency response teams means to contact emergency services (i.e, phone numbers) on a 24 -h basis list of all emergency equipment at the facility and list and location of decontamination equipment, including the location and a physical description of eacitem on the list and a brief outline of its capabilities evacuation plan for personnel (where there is a possibility that evacuation would be necessary) that includes: a description of the signal(s) used to begin evacuation evacuation routes alternate evacuation routes (where the primary route could be blocked by releases of hazardous waste or fires) a designated meeting place.
	Verify that, if the installation stores hazardous waste in addition to POL, the contingency plan is updated at least annually or when there are significant changes to oper ations.
	Verify that the contingency plan addresses each POL storage and distribution facility specifically.
	Verify that the reporting section of the plan addresses the following:
	 recordkeeping when emergency procedures are implemented immediate reporting to the IOSC of any spill of POL, hazardous substance, o hazardous waste that exceed the RQ a written report from the IOSC to the appropriate military department and/o Defense Agency and the Executive Agent in any of the following circum stances:
	 stances: when the spill cannot be contained within any required berm or secondary containment when the spill exceeds 416 L (110 gal) of POL when a water resource has been polluted when the IOSC has determined that the spill is significant notification of appropriate authorities (See checklist item 8-19).
	Verify that the plan is certified by a competent authority.
	Verify that the spill plan is updated at least every 5 yr.

COMPLIANCE CATECODY.

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
8-8. All fuels elements must be evaluated at least once every 6 mo (AFI 23-	Verify that the Quality Control and Inspection (QC&I) Supervisor evaluates each fuels element at least once every 6 mo (not to exceed 180 days). (3)
201, para 8.7).	(NOTE: The QC&I function does not evaluate itself.)
	Verify that a fuels element is revisited after 30 days (but within 45 days) to check any negative indicators found during the semiannual assessment.
	Verify that at least 10 no-notice spot checks are performed each week.
	Verify that all shifts are spot checked.
	Verify that spot checks are conducted during exercises and contingencies.
	(NOTE: At bases with fewer than 20 full-time fuels personnel, at least two no-notic spot checks are performed per week.)
8-9. Installations must provide necessary training to ensure the effectiveness of personnel and equipment (FGS-Turkey 18-6).	Verify that the installation provides necessary training to ensure the effectiveness of personnel and equipment. (3)(4)(5)(6)
8-10. Installations must meet specific require-	Determine whether the installation spill plan lists more than one individual as emer gency coordinator. $(1)(2)$
ments with regard to emergency coordinators	Verify that one person is named primary coordinator.
(FGS-Turkey 18-4.A).	Verify that others are listed in the order in which they would assume responsibility.
	Verify that the designated emergency coordinator is thoroughly familiar with the fol lowing:
	 all aspects of the contingency plan all operations and activities involving hazardous waste the location and characteristics of waste handled the location of all relevant records the storage layout.
	Verify that the emergency coordinator has the authority to commit the resource needed to carry out the contingency plan.

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
8-11. Facilities and equipment for storing, handling, or using oils should be designed to pre- vent or minimize spills to the environment and should be periodically tested and inspected (MP).	 Verify that one of the following preventive systems, or an equivalent, is used: (1)(4)(5) absorbent material sand bags/temporary curbing devices dikes, berms, or retaining walls sufficiently impervious to contain spilled oil culverting gutters or other drainage system weirs, booms, or other barriers spill diversion ponds retention ponds. Verify that each oil storage area: has adequate supplies of appropriate materials that are readily accessible has equipment that is in good condition.
8-12. Secondary con- tainment must be pro- vided for all loading and unloading facilities and must be managed prop- erly (AFI 23-201, para A10.1).	Verify that all loading and unloading facilities have secondary containment that is impermeable to petroleum products. (3) Verify that no drainage water is discharged from the secondary containment if the water contains residual petroleum products or hazardous chemicals.
PIPELINES 8-13. Air Force oper- ated off-site pipelines should be inspected at least once per week by air patrol, and once a year by line walker or vehicle patrol (MP).	Verify that records confirm that inspections were performed. (1)(3)(4) Verify that any detected leaks were reported and leaking pipes repaired or replaced. (NOTE: This MP is based on guidance found in AFM 85-16, Chapter 8.)

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
8-14. All Air Force oper- ated above and under- ground fuel piping systems at transfer opera-	Verify that pressure tests have been conducted once a year. (3)(4)(7) (NOTE: Check under remarks Section of AF Form 172 if the testing pressure was maintained during the 2-h period.)
tions, pumping and in- plant processing opera- tions should be managed according to specific	Verify that confirmed leaks have been reported and leaking pipes repaired or replaced.
parameters (MP).	Verify that pipelines are walked at least twice a year and that any suspicious circums stances lead to immediate investigation (to include pressure testing of the line and excavation if soil conditions permit).
	(NOTE: This MP is based on guidance outlined in AFM 85-16, Chapter 8.)
8-15. All underground aviation fuel transfer pipelines should be sub-	Verify that hydrostatic pressure tests were conducted as required by reviewing attachments to AF Form 172 and interviewing LFM personnel. (4)
ject to a hydrostatic pres- sure test on a 5-yr	Verify that detected leaks were corrected through repair or replacement by inspecting test results.
recurring basis (MP).	Verify that 150 percent of normal pressure was maintained during the 4-h test period by reviewing the Remarks section of AF Form 172.
	(NOTE: This MP is based on guidance outlined in AFM 85-16, Chapter 8.)
8-16. Buried fuel piping	Verify that buried fuel piping is properly protected from corrosion. (3)(4)(7)
should have a protective wrapping and coating and should be cathodi- cally protected if soil con- ditions warrant (MP).	Verify that the voltage is greater than -0.85 V, but not more than -3.0 V (monthly) for impressed current systems.
	Verify that the voltage is greater than -0.85 V, but not more than -3.0 V (biannually) for sacrificial anode systems.
	Verify that leak detection and failure are reported.
8-17. All pipeline facilities with a construction start date after 1 October 1994 must be designed and constructed to meet recognized U.S. industry standards (FGS-Turkey 9-5).	Verify that all pipeline facilities with a construction start date after 1 October 1994 are designed and constructed to meet recognized U.S. industry standards. (3)(4)(7)

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
8-18. All pipeline facili- ties carrying POL must be tested and maintained in accordance with recog- nized U.S. industry stan- dards (FGS-Turkey 9-4).	Verify that each pipeline operator handling POL prepares and follows a procedural manual for operations, maintenance, and emergencies. (3)(4)(7) Verify that each new pipeline system and each system in which pipe has been replaced or relocated is hydrostatically tested, in accordance with recognized U.S. industry standards, and is without leakage.
DISCHARGES/SPILLS	
8-19. Installations must take specific actions in the event of POL spills (FGS-	Verify that, in the event of a spill, the installation follows the guidance in the spill plan. (1)
Turkey 9-6).	Verify that, when there is a spill, the immediate response involves:
	 stopping the leak at the source controlling the migration of the spill calling for help.
	Verify that follow-up steps include:
	 preventing the migration of released POL into soils and nearby surface waters continuing the monitoring and mitigation of any fire and safety hazards posed by vapors or free product determining soil and water cleanup action beginning free product removal as soon as possible.
8-20. Installations must make specific notifica-	Verify that spills of RQs of POL, hazardous substances, or hazardous waste are reported to the IOSC immediately. $(1)(2)(3)(4)(5)(6)$
tions in the event of a spill of POL, hazardous sub- stances, or hazardous	Verify that immediate action is taken to eliminate the source and contain the spill.
stances, or hazardous waste (FGS-Turkey 18- 5.B through 18-5.E)	Verify that, when a spill of POL, hazardous substance, or hazardous waste occurs inside the installation and cannot be contained within its boundaries, the following are notified immediately:
	 the appropriate Military Department and/or Defense Agency the Executive Agent
	 the appropriate host nation authorities. Verify that, when a spill of POL, hazardous substances, or hazardous waste threatens a local host nation drinking water resource, the following are notified immediately:
	 the appropriate Military Department and/or Defense Agency the Executive Agent the appropriate host nation authorities.

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
8-20. (continued)	Verify that, if a spill in excess of the RQ occurs outside of the installation, the person in charge at the scene immediately notifies host nation authorities and local fur departments and obtains necessary assistance.
	Verify that the IOSC immediately notifies the appropriate Military Department and or defense agency and the Executive Agent and submits a follow-up report whenever any of the following occurs:
	 a spill occurs inside a DOD installation and cannot be contained with any required berm or secondary containment a spill exceeds 416 L (110 gal) of POL a water resource has been polluted IOSC has determined that the spill is significant.
8-21. BFMO must report fuel-related mishaps in accordance with specific requirements (AFI 23-201, para 1.8).	Verify that BFMO reports fuel-related mishaps in accordance with AFI 91-20 Investigating and Reporting Mishaps, and to Major Command (MAJCOM) ar Defense Fuel Office/Defense Fuel Region (DFO/DFR) as soon as possible by tel phone. (3) Verify that BFMO sends a follow-up message within 24 h to the MAJCOM with a
	info copy to HQ USAF/LGSP, DFSC-FQ, and the applicable DFO/DFR.
	Verify that BFMO sends an advisory message within 30 days to MAJCOM with a info copy to USAF/LGSP on the outcome of the investigation and lessons learned.
	Verify that BFMO coordinates with the base environmental manager on follow-u messages for reportable fuels spills.

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
USED POL / WASTE POL	
8-22. The FMFC has specific responsibilities with regard to the man- agement of waste fuel (AFI 23-201, para A10.2).	 Verify that the FMFC: (3) designates interim storage and final disposition locations and procedures for off-specification bulk products and product-water mixtures under fuels management control does not use installed hydrants, storage sumps, or slop tanks to collect or store waste fuels obtains written MAJCOM approval to use stock listed vehicles and trailers for the collection and transport of waste fuels or oils clearly marks and completely isolates the tanks and equipment used for waste products from active product storage and equipment to prevent contamination ensures that there is direct supervision when waste materials are delivered to waste product tankage in the fuels area by the generating activity properly trains fuels personnel who handle hazardous waste.
8-23. Installations that burn used oil may do so in certain devices only (FGS-Turkey 6-9.A).	 Verify that used oil fuel is burned in the following devices only: (1)(2)(5) industrial furnaces industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes utility boilers used to produce electric power, steam, heated or cooled air, or other gases or fluids used-oil-fired space heaters if: the heat burns only used oil that the installation generates the heater is designed to have a maximum capacity of not more than 0.5 MBtu/h [0.147 MW] the combustion gases from the heater are properly vented to the ambient air.
8-24. Neither used oil nor used oil contami- nated with any hazardous waste may be used for dust suppression or road treatment (FGS-Turkey 6- 9.B).	Verify that the installation does not use used oil for dust suppression or road treat- ment. (1)

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
8-25. Accumulation points must be set up for used petroleum products generated as part of the operation and maintenance of air-to-surface	Determine whether the installation operates air-to-surface weapons ranges that get erate used petroleum products. (1)(3)(5) Verify that accumulation points have been set up for such weapons ranges. Verify that arrangements have been made for periodic transport of such products to	
weapons ranges (AFI 13- 212, para 1.10.2.1).	storage facility.	
8-26. Installations that generate used oil and market it directly to a burner should meet specific standards (MP).	 Verify that the installation prepares and sends the receiving facility an invoice detailing the following for off-specification used oil: (1)(2)(5)(8)(10) an invoice number the names and addresses of the shipping and receiving facilities the quantity of off-specification oil to be delivered the dates of shipment or delivery. 	
	Verify that copies of the invoices are kept for 3 yr.	
	Verify that, for used oil that is not off-specification, copies of the waste analyses a kept for 3 yr.	
	Verify that the installation has a signed notice from the burner that the oil will burned only in approved furnaces and/or boilers.	

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		PETROLEUM, OIL, AND LUBRICANT MANAGEMENT Turkey ECAMP		
STATUS				
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SECTION 9

SOLID WASTE MANAGEMENT

Turkey ECAMP

SECTION 9

SOLID WASTE MANAGEMENT

A. Applicability of this Section

This section addresses the collection, storage, and disposal of solid waste on Air Force (AF) installations. Solid waste is considered to be nonhazardous trash, rubbish, garbage, bulky wastes, liquids, or sludges generated by any AF installation operations and activities. This section also addresses the management of medical/pathological waste. The handling and disposal of asbestos waste materials are addressed in Section 11, *Toxic Substances Management*.

Recycling and resource recovery activities are also included in this section because this form of solid waste management is required by Department of Defense (DOD) and U.S. Air Force (USAF) directives.

The regulatory requirements in this section are based on DOD regulations and Air Force Policy that apply at overseas installations. Management Practices (MPs) are nonregulatory but are important to follow to preserve the health and safety of AF employees and protect the environment.

B. DOD Directives/Instructions

• Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 7, includes criteria concerning the identification, classification, collection, transportation, storage, treatment, and safe disposal of solid waste. Chapter 8 addresses the management of medical waste.

C. U.S. Air Force Documents

• No additional documents.

D. Responsibility for Compliance

- Base Civil Engineering (BCE) is responsible for site location, licensing, construction, and operation of onbase landfills and for the storage and transportation of solid wastes to either onbase or offbase disposal activities.
- Bioenvironmental Engineering Services (BES) is responsible for reviewing and coordinating asbestos disposal plans and operations.

E. Definitions

• *Bulky Waste* - large items of solid waste such as household appliances, furniture, large auto parts, trees, branches, stumps, and other oversized wastes whose large size precludes or complicates their handling by normal solid wastes collection, processing, or disposal methods (FGS-Turkey 20).

• *Carry-out Collection* - collection of solid waste from a storage area proximate to the dwelling unit(s) or establishment where generated (FGS-Turkey 20).

Contaminant	Allowable Average Concentration, mg/kg
Polychlorinated biphenyls (PCBs)	1
Cadmium	10
Chromium	1000
Copper	500
Lead	500
Mercury	5
Nickel	100
Zinc	1000

• Class A Compost - compost that contains average contaminant levels no greater than the following levels (FGS-Turkey 7-16.A):

- Class B Compost compost that fails to meet the standards for Class A Compost (FGS-Turkey 7-16.B).
- *Collection* the act of consolidating solid wastes (or materials that have been separated for the purpose of recycling) from various locations (FGS-Turkey 20).
- Collection Frequency the number of times collection is provided in a given period of time (FGS-Turkey 20).
- Commercial Solid Waste all types of solid wastes generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes (FGS-Turkey 20).
- Compactor Collection Vehicle a vehicle with an enclosed body, containing mechanical devices, that conveys solid waste into the main compartment of the body and compresses it into a smaller volume of greater density (FGS-Turkey 20).
- *Construction and Demolition Waste* the waste building materials, packaging, and rubble resulting from construction, remodeling, repair, and demolition operations on pavement, houses, commercial buildings, and other structures (FGS-Turkey 20).
- *Cover Material* material that is used to cover compacted solid wastes in a land disposal site (FGS-Turkey 20).
- Curb Collection collection of solid waste placed adjacent to a street (FGS-Turkey 20).

- *Daily Cover* soil that is spread and compacted or synthetic material that is placed on the top and side slopes of compacted solid waste at least at the end of each operating day in order to control vectors, fire, moisture, and erosion and to assure an aesthetic appearance (FGS-Turkey 20).)
- *Final Cover* cover material that serves the same functions as daily cover but, in addition, may be permanently exposed on the surface (FGS-Turkey 20).
- Food Waste the organic residues generated by the handling, storage, sale, preparation, cooking, and serving of foods, commonly called garbage (FGS-Turkey 20).
- Generation the act or process of producing solid waste (FGS-Turkey 20).
- *Industrial Solid Waste* solid waste generated by industrial processes and manufacturing (FGS-Turkey 20).
- Infectious Agent any organism (such as a virus or bacterium) that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans (FGS-Turkey 20).
- Infectious Medical Waste solid waste, produced by medical and dental treatment facilities that is specially managed because it has the potential for causing disease in humans and may pose a risk to both individuals and community health if not managed properly. The term includes microbiology waste, pathology waste, human blood and blood products, potentially infectious materials, sharps, and infection wastes from isolation rooms (including only those items that are contaminated, with infectious agents or pathogens, and excretion exudates and discarded material contaminated with blood) (FGS-Turkey 20).
- *Institutional Solid Waste* solid waste generated by educational, health care, correctional, and other institutional facilities (FGS-Turkey 20).
- Land Application Unit an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment or disposal (FGS-Turkey 20).
- Land Disposal placement in or on the land, including, but not limited to, land treatment, facilities, surface impoundments, underground injection wells, salt dome formations, salt bed formations, underground mines or caves (FGS-Turkey 20).
- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Municipal Solid Waste (MSW)* normally, residential and commercial solid waste generated within a community, not including yard waste (FGS-Turkey 20).
- *Municipal Solid Waste Landfill (MSWLF) Unit* a discrete area of land or an excavation, on or off the installation, that receives household waste and that is not a land application unit, surface impoundment, injection well, or waste pile. An MSWLF unit also may receive other types of wastes, such as commercial solid waste and industrial waste (FGS-Turkey 20).

• Noninfectious Medical Waste - solid waste created in medical and dental treatment facilities that does not require special management because it has been determined to be incapable of causing disease in humans or it has been treated to render it noninfectious (FGS-Turkey 20).

(NOTE: In the United States, most pharmaceuticals have a material safety data sheet (MSDS) or U.S. Environmental Protection Agency (USEPA) waste number. There is a specific disposal requirement for waste prescription drugs (Federal Supply Category 6505) regardless of whether it is listed in Table 3-1. There are six categories of waste prescription drugs: all are either controlled or non-controlled; they are then divided into nonhazardous, non-Resource Conservation and Recovery Act (RCRA) hazardous, and RCRA hazardous. The procedures for disposal of noncontrolled drugs through the Defense Reutilization and Marketing Office (DRMO) are similar to those for hazardous waste, although the handling and packaging is different. Disposal of all other categories is to be carried out in accordance with applicable service directives.)

- Open Burning burning of solid wastes in the open, such as in an open dump (FGS-Turkey 20).
- *Open Dump* a land disposal site at which solid wastes are disposed of in a manner that does not protect the environment, are susceptible to open burning, and are exposed to the elements, vectors, and scavengers (FGS-Turkey 20).
- *Residential Solid Waste* the wastes generated by the normal activities of households, including, but not limited to, food wastes, rubbish, ashes, and bulky wastes (FGS-Turkey 20).
- *Rubbish* a general term for solid waste, excluding food wastes and ashes, taken from residences, commercial establishments, and institutions (FGS-Turkey 20).
- Sanitary Landfill a land disposal site employing an engineered method of disposing of solid wastes on land in a manner that minimizes environmental hazards by spreading the solid wastes in thin layers, compacting the solid wastes to the smallest practical volume, and applying and compacting cover material at the end of each operating day (FGS-Turkey 20).
- Satellite Vehicle a small collection vehicle that transfers its load into a larger vehicle operating in conjunction with it (FGS-Turkey 20).
- *Scavenging* the uncontrolled and unauthorized removal of materials at any point in the solid waste management system (FGS-Turkey 20).
- Sludge the accumulated semiliquid suspension of settled solids deposited from wastewaters or other fluids in tanks or basins. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluent, dissolved materials in irrigation return flows, or other common water pollutants (FGS-Turkey 20).
- Solid Waste garbage, refuse, sludge, and other discarded materials, including solid, semisolid, liquid, and contained gaseous materials resulting from industrial and commercial operations and from community activities. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluent, dissolved materials in irrigation return flows or other common water pollutants (FGS-Turkey 20).

- Solid Waste Storage Container a receptacle used for the temporary storage of solid waste while awaiting collection (FGS-Turkey 20).
- Stationary Compactor a powered machine that is designed to compact solid waste or recyclable materials, and which remains stationary when in operation (FGS-Turkey 20).
- *Storage* the interim containment of solid waste after generation and prior to collection for ultimate recovery or disposal (FGS-Turkey 20).
- *Street Wastes* material picked up by manual or mechanical sweepings of alleys, streets, and sidewalks, wastes from public waste receptacles, and material removed from catch basins, runways, and taxiways (FGS-Turkey 20).
- *Transfer Station* a site at which solid wastes are concentrated for transport to a processing facility or land disposal site. A transfer station may be fixed or mobile (FGS-Turkey 20).
- *Treatment* any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any waste so as to neutralize such waste, or so as to recover energy or materials resources from the waste, or so as to render such waste nonhazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume. It also includes any method, technique, or process designed to render infectious medical waste noninfectious (FGS-Turkey 20).
- *Vector* a carrier, usually an arthropod, that is capable of transmitting a pathogen from one organism to another (FGS-Turkey 20).
- Yard Waste grass and shrubbery clippings, tree limbs, leaves, and similar organic materials commonly generated in residential yard maintenance (also known as green waste) (FGS-Turkey 20).

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SOLID WASTE MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations	9-1 through 9-6	(1)(2)(4)
Recycling	9-7 and 9-8	(1)(3)
Solid Waste Storage and Collection	9-9 through 9-14	(1)(2)(3)
Land Disposal Sites Specific Wastes Operations Closure and Postclosure New Landfills	9-15 9-16 through 9-27 9-28 through 9-31 9-32 and 9-33	(1)(3)(1)(2)(3)(1)(2)(3)(1)(2)(3)
Composting Facilities	9-34 and 9-35	(1)(2)(3)
Medical Waste General Infectious Medical Waste Disposal	9-36 9-37 through 9-47 9-48 through 9-53	(1)(3) (1)(3) (1)(3)

(a) CONTACT/LOCATION CODE:

(1) BEC (Base Environmental Coordinator)

- (2) BCE (Base Civil Engineer)
- (3) BES (Bioenvironmental Engineering Services)
- (4) Base Staff Judge Advocate

SOLID WASTE MANAGEMENT

Records To Review

- · Record of current nonhazardous solid waste management practices
- Documentation of locations (map) and descriptions of all nonhazardous waste treatment, storage, and disposal facilities (TSDFs)
- · Records of operational history of all active and inactive TSDFs
- Environmental monitoring procedures or plans
- · Records of resource recovery practices, including the sale of materials for the purpose of recycling
- Solid waste removal contracts and inspection records

Physical Features To Inspect

- Resource recovery facilities
- Incineration and land disposal facilities (active and inactive)
- Areas where hazardous and nonhazardous wastes are disposed of
- Construction debris areas
- Waste receptacles
- · Solid waste vehicle storage and washing areas

Sources To Interview

- BEC (Base Environmental Coordinator)
- BCE (Base Civil Engineer)
- BES (Bioenvironmental Engineering Services)
- Base Staff Judge Advocate

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COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
ALL INSTALLATIONS		
9-1. Copies of all relevant DOD directives/ instructions, USAF direc- tives, and guidance docu- ments should be maintained at the installa- tion (MP).	Verify that the Base Staff Judge Advocate has available the host-nation Final Governing Standards and relevant USAF documents. (1)(2)(4)	
9-2. Installations must meet regulatory require-	Determine whether any new regulations concerning solid waste management has been issued since the finalization of the manual. $(1)(2)(4)$	
ments issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as the basis of the finding).	Verify that the installation is in compliance with newly issued regulations.	
9-3. Installations must cooperate, to the extent possible, with local, regional, and national officials of the Republic of Turkey in the solid waste management planning process (FGS-Turkey 7-2).	Verify that the installation cooperates Turkish officials, to the extent possible, in the solid waste management planning process. (2)	
9-4. Installations must develop and implement a solid waste management	Verify that the installation has developed and implemented a strategy for reducir solid waste disposal. (1)(2)	
strategy (FGS-Turkey 7- 3).	(NOTE: This strategy could include recycling, composting, and waste minimization efforts.)	

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COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
9-5. Buildings and all other facilities that are constructed, modified, or leased after the effective date of the FGS-Turkey must provide for storage areas that can be easily cleaned and maintained and that allow for safe and efficient collection of solid waste (FGS-Turkey 7-6).	 Verify that provision is made in the design of all buildings and all other facilities that are constructed, modified, or leased after 1 March 1994 for storage areas that: (1)(2) will accommodate the volume of solid waste anticipated can be easily cleaned and maintained allow for safe and efficient collection of solid waste.
9-6. Open burning is not permitted on DOD installations (FGS-Turkey 7-14).	Verify that no open burning occurs on the installation. (1)(2)
RECYCLING	
9-7. AF installations must institute recycling programs, where cost effective (FGS-Turkey 7-9).	Verify that a solid waste reduction/resource recovery program exists. (1)(3)
9-8. Reusable and marketable materials should be collected at regular intervals (MP).	Verify that reusable or marketable materials are collected at regular intervals. (1)(3)
SOLID WASTE STORAGE AND COLLECTION	
9-9. Installations must treat, store, and dispose of DOD solid wastes in facilities that meet specific criteria (FGS-Turkey 7-1).	Verify that the installation treats, stores, and disposes of DOD solid wastes in facili- ties that meet the criteria of FGS-Turkey 7-12 (see checklist items 9-26 through 9-30 and 9-33 through 9-40) to the maximum extent possible before using facilities that do not. Verify that facilities are evaluated before use by U.S. installations or their contrac- tors.

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
9-10. Installations must use solid waste storage containers that meet spe-	Verify that storage containers are leakproof, waterproof, and vermin-proof, includin sides, seams, and bottoms. (2)(3)	
cific design standards (FGS-Turkey 7-7).	Verify that storage containers are durable enough to withstand anticipated usage without rusting, cracking, or deforming in a manner that would impair serviceabilit	
	Verify that storage containers have functional lids.	
9-11. Installations must store containers in accordance with specific	Verify that containers are stored on a firm, level, well-drained surface that is large enough to accommodate all of the containers. (2)(3)	
dance with specific requirements (FGS-Tur-key 7-8).	Verify that the storage area is clean and free of spills.	
9-12. Installations must store all solid wastes and materials separated for recycling according to	Verify that all solid wastes and materials separated for recycling are stored so as no to constitute a fire, health, or safety hazard or provide food or harborage for vector $(1)(2)(3)$	
specific guidelines (FGS- Turkey 7-4).	Verify that such materials are contained or bundled to prevent spillage.	
9-13. Installation personnel should be periodically informed about materials that may not be put in solid waste receptacles (MP).	Verify that a program exists at the installation to keep personnel informed abo proper waste disposal practices. (1)(2)(3)	
9-14. Installations must meet specific require- ments with regard to the management of bulky	Verify that bulky wastes are stored so as not to create an attractive nuisance and avoid the accumulation of solid waste and water in and around the bulky items be removing all doors from large household appliances and covering the item $(1)(2)(3)$	
wastes (FGS-Turkey 7-5).	Verify that bulky wastes are screened for the presence of hazardous constituents ar ozone depleting substances.	
	Verify that readily detachable or removable hazardous constituents are segregate and disposed of properly.	
	(NOTE: See Section 4, Hazardous Waste Management.)	

(1) BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BES (Bioenvironmental Engineering Services) (4) Base Staff Judge Advocate

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
LAND DISPOSAL SITES	(NOTE: The requirements of this section apply only to installations that operate an MSWLF.)	
Specific Wastes		
9-15. Installations must develop procedures for dealing with yard waste and construction debris (FGS-Turkey 7-12.F).	Verify that the installation has developed procedures for dealing with yard waste and construction debris that keep it out of MSWLF units to the maximum extent possible. (1)(3)	
Operations		
9-16. Installations must investigate options for composting MSW (FGS-Turkey 7-12.D).	Verify that the installation has investigated options for composting MSW as an alter- native to landfilling or treatment prior to landfilling. (1)(2)	
9-17. Installations must implement programs to detect and prevent the disposal of certain wastes in their MSWLFs (FGS-Turkey 7-12.C and 7-12.M).	Verify that the installation has a program that effectively prevents the disposal in the MSWLF of hazardous waste, infectious waste, PCB waste, and other waste determined to be unsuitable for the specific landfill. (1)(2)(3) Verify that the installation prohibits the disposal of bulk or noncontainerized liquids in the MSWLF, if possible.	
9-18. Installations must establish criteria for unac- ceptable wastes based on site-specific factors (FGS- Turkey 7-12.B).	 Verify that the installation has established criteria for unacceptable wastes based on site-specific factors. (1)(2) (NOTE: Examples of site-specific factors are: hydrology chemical and biological characteristics of the waste available alternative disposal methods environmental and health effects safety of personnel.) 	
9-19. Installations must use certain standard sani- tary landfill techniques as part of their operations (FGS-Turkey 7-12.A).	Verify that standard techniques of spreading and compacting solid wastes are used. (1)(2)(3) Verify that daily cover is placed over disposed solid waste at the end of each operating day.	

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
9-20. Installations must operate land disposal sites in such a way as to protect aquifers (FGS-Turkey 7-12.K).	Verify that the land disposal site is operated in such a way as to protect aquifers. (1)(2)	
9-21. Installations must operate land disposal sites	Verify that there is no open burning of MSW. $(1)(2)(3)$	
in such a way as to protect air quality (FGS-Turkey 7-12.E).	(NOTE: Infrequent burning of agricultural wastes, silvicultural wastes, land-clear- ing debris, diseased trees, or debris from emergency cleanup operations is allowed.)	
9-22. Installations must ensure that methane gen- erated by the MSWLF unit does not exceed 25 percent of the lower explosive limit for meth- ane in facility structures (FGS-Turkey 7-12.I).	Verify that methane generated by the MSWLF unit does not exceed 25 percent of the lower explosive limit for methane in facility structures. (1)(2)(3) (NOTE: The lower explosive limit for methane is 5 percent by volume.)	
9-23. Installations must control vectors at land disposal sites (FGS-Turkey 7-12.H).	Verify that conditions at the land disposal site are unfavorable for the harboring, feeding, and breeding of disease vectors. $(1)(2)(3)$	
9-24. Land disposal sites must be operated in an aesthetically acceptable manner (FGS-Turkey 7-12.J).	Verify that the land disposal site is operated in an aesthetically acceptable manner. (1)(2)(3)	
9-25. Installations must control public access to landfill facilities (FGS-Turkey 7-12.L).	Verify that public access to landfill facilities is controlled. (1)(2)(3)	

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
9-26. Land disposal sites must be operated in such a way as to protect the health and safety of personnel (FGS-Turkey 7-12.G).	Verify that the land disposal site is operated in such a way as to protect the health and safety of personnel. (1)(2)(3)	
9-27. Operators of land disposal sites must maintain records of their operations (FGS-Turkey 7-12.N).	Verify that records on the operations of the landfill are maintained. $(1)(2)(3)$	
Closure and Postclosure		
9-28. Installations should survey for and be aware of old disposal sites (MP).	Verify that the installation has conducted a survey for old disposal sites. (1)(2)	
9-29. Installations must take specific actions in the course of closure and	Verify that a final cover is installed that is designed to minimize infiltration and erosion. $(1)(2)(3)$	
postclosure operations (FGS-Turkey 7-13.A through 7-13.C).	Verify that the infiltration layer is made up of a minimum of 46 cm (18 in.) of earthen material, geotextiles, or combination thereof, that have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present or a permeability no greater than 0.00005 cm/s, whichever is less.	
	Verify that the erosion layer is a minimum of 21 cm (8 in.) of earth that can sustain native plant growth.	
9-30. Installations must	Verify that the installation has a written closure plan. $(1)(2)(3)$	
prepare a written closure plan that meets specific	Verify that the closure plan is kept as part of the installation's permanent records.	
requirements (FGS-Tur- key 7-13.D).	Verify that the closure plan includes the following, at a minimum:	
	 a description of the monitoring and maintenance activities required to ensure the integrity of the final cover a survey plot showing the exact site location a description of planned uses during the postclosure period 	
	- the duration of the postclosure period, to be a minimum of 5 yr.	

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9-31. Installations should, upon closure of a site, record a detailed description with the area's land recording authority (MP).	Verify that, upon closure of a site, a detailed description is recorded with the area land recording authority. (1)(2)(3)	
New Landfills		
9-32. Installations must not initiate new or expand existing waste landfill	Determine whether the installation is planning to start a new landfill or expand a existing one. $(1)(2)(3)$	
units without approval of the component and only after showing that unique circumstances necessitate a new unit (FGS-Turkey 7-10).	Verify that appropriate component approval has been received.	
9-33. The design and operation of new MSWLF units must incorporate certain broad factors (FGS-Turkey 7-11).	 Verify that the following broad factors are taken into account in the design and operation of the new MSWLF: (1)(2)(3) location restrictions in regard to airport safety (i.e., bird hazards), floodplain wetlands, aquifers, seismic zones, and unstable areas procedures for excluding hazardous waste cover material criteria (e.g., daily cover) disease vector control explosive gas control air quality standards (e.g., no open burning) access requirements liquids restrictions recordkeeping requirements inspection program. 	

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COMPOSTING FACILITIES		
9-34. Composting facilities that process 5000 tons [≈4540 metric tons] of	Verify that a record is maintained for the characteristics of the waste, sewage sludge, and other materials (such as nutrient or bulking agents), including the source and volume or weight of the material. $(1)(2)(3)$	
sludge from a domestic wastewater treatment plant annually must meet	Verify that access to the facility is controlled.	
specific standards (FGS- Turkey 7-15).	Verify that all access points are secured when the facility is not in operation.	
Turkey 7-13).	Verify that by-products (including residual materials that can be recycled) are stored to prevent vector intrusion and aesthetic degradation.	
	Verify that materials that are not composted are removed periodically.	
	Verify that runoff water that has come in contact with composted waste, materials stored for composting, or residual waste is diverted to a leachate collection and treatment system.	
	Verify that the temperature and retention time for material being composted is moni- tored and recorded.	
	Verify that the compost is analyzed periodically for the following:	
	 percentage of total solids volatile solids as a percentage of total solids pH ammonia nitrate nitrogen total phosphorus cadmium chromium copper lead nickel zinc mercury PCBs. 	

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9-34. (continued)	Verify that compost is produced by a process that further reduces pathogens.
	 (NOTE: Two acceptable methods of production are windrowing and the enclosed vessel method: windrowing consists of an unconfined composting process involving periodic aeration and mixing such that aerobic conditions are maintained during the composting process enclosed vessel method involves mechanically mixing compost under controlled environmental conditions: the retention time in the vessel must be at least 72 h with the temperature maintained at 55 °C [131 °F] a stabilization period of at least 7 days must follow the decomposition period.)
9-35. Compost produced at a facility that processes 5000 tons [≈4540 metric tons] of sludge from a domestic wastewater treatment plant annually must be distributed in accordance with the clas- sification of the compost (FGS-Turkey 7-16.A and 7-16.C).	 Verify that compost distributed or marketed as commercial fertilizer, speciality fertilizer, soil amendment, or plant amendment is registered with the Executive Agent. (1)(2)(3) Verify that Class A compost is: stabilized stored until it has matured (a 60 percent decomposition). Verify that Class B compost is distributed on a restricted basis only. (NOTE: Class A compost may be distributed for unrestricted use, including agricultural applications.) (NOTE: The Executive Agent determines appropriate distribution for Class B compost.)

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
MEDICAL WASTE	(NOTE: The requirements of this section of the Solid Waste Management Protocol do not apply to what would otherwise be household waste.)	
General		
9-36. Radioactive medical waste must be managed in accordance with service directives (FGS-Turkey 8-3).	Determine whether the installation disposes of radioactive medical waste. (1)(3) Verify that such waste is disposed of in accordance with AF guidance.	
Infectious Medical Waste		
9-37. All personnel who handle infectious medical waste must wear protective apparel or equipment (FGS-Turkey 8-9).	Verify that all personnel who handle infectious medical waste wear protective equip- ment such as gloves, coveralls, masks, and goggles, sufficient to prevent risk of exposure to infectious agents or pathogens. (1)(3)	
9-38. Infectious medical waste must be separated from noninfectious medical waste at the point of origin (FGS-Turkey 8-1).	Verify that infectious medical waste is separated from noninfectious medical waste at the point of origin. (1)(3)	
9-39. Mixtures of infec- tious medical waste and	Verify that mixtures of infectious medical waste and hazardous wastes are handled as infectious hazardous waste. (1)(3)	
other types of waste must be handled in accordance	(NOTE: Priority is given to the hazard that presents the greatest risk.)	
with specific criteria (FGS-Turkey 8-2.A and 8-2.B).	(NOTE: Mixtures of infectious medical wastes and hazardous wastes are the respon- sibility of the generating DOD component, not the DRMO.)	
	Verify that mixtures of solid waste and infectious medical waste are handled as infec- tious medical waste.	
9-40. Infectious medical waste must be handled in accordance with specific	Verify that infectious medical waste is not compacted unless it has been converted to noninfectious medical waste by treatment. (1)(3)	
requirements (FGS-Tur- key 8-4.A through 8-4.C, and 8-5).	Verify that infectious medical waste is transported and stored in such a way as to minimize human exposure to the extent possible.	
	Verify that infectious medical waste is not placed in chutes or dumbwaiters.	

⁽¹⁾ BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BES (Bioenvironmental Engineering Services) (4) Base Staff Judge Advocate

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
9-40. (continued)	Verify that infectious medical waste is segregated, transported, and stored in bags or receptacles that are a minimum of 3 mil thick, durable, puncture resistant, and have sufficient burst strength to prevent rupture or leaks during ordinary use.	
	Verify that all bags or receptacles used to segregate, transport, or store infectiou medical waste are clearly marked with the universal biohazard symbol and the leg end BIOHAZARD.	
	Verify that all bags or receptacles used to segregate, transport, or store infectiou medical waste include marking that identifies the generator, date of generation, and the contents.	
9-41. Infectious medical waste must be treated in accordance with specific standards (FGS-Turkey 8-10.A, 8-10.B, and 8-10.E).	Verify that medical waste is treated prior to disposal in accordance with Table 9-1 $(1)(3)$	
	Verify that, if sterilization is required, sterilizers are maintained at a temperature of 121 °C (250 °F) for at least 90 min.	
	Verify that, if sterilization is required, the effectiveness of sterilizers is checked a least weekly using <i>Bacillus stearo thermophilus</i> spore strips or an equivalent biological performance test.	
	Verify that, if chemical disinfection is required, such disinfection is conducted usin procedures and compounds approved by DOD medical personnel for use on an pathogen or infectious agent suspected to be present in the waste.	
9-42. Infectious medical waste that cannot be	Verify that infectious medical waste is maintained in a nonputrescent state, usin refrigeration as necessary. $(1)(3)$	
treated on-site must be managed during storage in accordance with spe-	Verify that storage sites:	
in accordance with spe- cific requirements (FGS- Turkey 8-4.D).	 are specifically designated are constructed to prevent the entry of insects, rodents, and other pests do not allow access by unauthorized personnel marked on the outside with the universal biohazard symbol and the word BIC HAZARD in English and Turkish. 	

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9-43. Bags and receptacles that contain infectious medical waste must be placed into rigid or semi-rigid leakproof containers before being transported offsite (FGS-Turkey 8-4.E).	Verify that bags and receptacles that contain infectious medical waste are placed into rigid or semi-rigid leakproof containers before being transported offsite. (1)(3)
9-44. Spills of infectious medical waste must be	Verify that spills of infectious medical waste are cleaned up as soon as possible. $(1)(3)$
cleaned up in accordance with specific require- ments (FGS-Turkey 8-	Verify that response personnel wear personal protective equipment (PPE) that is suf- ficient to prevent risk of exposure to infectious agents or pathogens.
12).	Verify that spills of blood or body fluids are removed with absorbent material.
	Verify that such absorbent material is then managed as infectious medical waste.
	Verify that surfaces contacted by infectious medical waste are washed with soap and water and chemically decontaminated using procedures and compounds approved by DOD medical personnel for use on any pathogen or infectious agent suspected to be present.
9-45. The handling of anatomical pathology waste is subject to specific requirements (FGS-Turkey 8-7).	Verify that all anatomical pathology waste is placed in containers lined with plastic bags that are a minimum of 3 mil thick, durable, puncture resistant, and have sufficient burst strength to prevent rupture or leaks during ordinary use. (1)(3)
9-46. Noninfectious medical waste that is classified as hazardous must be managed as hazardous waste (FGS-Turkey 8-2.C).	Verify that noninfectious medical waste that is classified as hazardous is managed as hazardous waste. (1)(3)
	(NOTE: See Section 4, Hazardous Waste Management.)
9-47. Sharps must be	Verify that sharps are discarded into rigid receptacles only. (1)(3)
managed in accordance with specific criteria (FGS-Turkey 8-4.C and	Verify that needles are not clipped, cut, bent, or recapped before treatment or disposal.
8-6).	Verify that containers holding sharps are not compacted.

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Disposal	
9-48. Installations must develop contingency plans for the treatment or disposal of infectious medical waste (FGS-Turkey 8-11).	Verify that the installation has a contingency plan for the treatment or disposal of infectious medical waste should the primary means become inoperable. (1)(3)
9-49. Anatomical pathology waste must either be incinerated or buried (FGS-Turkey 8-7).	Verify that pathological waste is disposed of by incineration or burial only. (1)(3)
9-50. Blood, blood products, and other liquid infectious wastes must be handled in accordance with specific criteria (FGS-Turkey 8-8).	Verify that suction canister waste from operating rooms is either decanted into a clinical sink or sealed into leak-proof containers and incinerated. (1)(3)
	Verify that bulk blood or blood products are only decanted into clinical sinks.
	Verify that emptied containers that previously held bulk blood or blood products as managed as infectious medical waste.
9-51. Incinerators used to dispose of medical waste must meet specific requirements (FGS-Turkey 8-10.C).	Verify that such incinerators are designed and operated to maintain a minimum ten perature and retention time sufficient to destroy all infectious agents and pathogen (1)(3)
	Verify that such incinerators meet applicable air emissions criteria in Chapter 2 (FGS-Turkey. (1)(3)
	(NOTE: See Section 1, Air Emissions Management.)
9-52. Ash or residue from the incineration of infectious medical waste must be assessed for hazardous characteristics (FGS-Turkey 8-10.D).	Verify that ash or residue from the incineration of infectious medical waste assessed for hazardous characteristics. (1)(3)
	Verify that ash that is determined to be hazardous waste is managed as hazardou waste.
	(NOTE: See Section 4, Hazardous Waste Management.)
	Verify that all other residue that is not determined to be hazardous is disposed of accordance with the requirements of FGS-Turkey Chapter 7.

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9-53. Installations must keep records concerning infectious medical waste (FGS-Turkey 8-13).	 Verify that records concerning infectious medical waste are kept for at least 3 yr after the date of disposal. (1)(3) Verify that such records include the following information: type of waste amount of waste (by volume or weight) treatment (if any), including date of treatment disposition, including date of disposition, and, if the waste is transferred to host nation facilities, receipts acknowledging the above three items. 	

Table 9-1

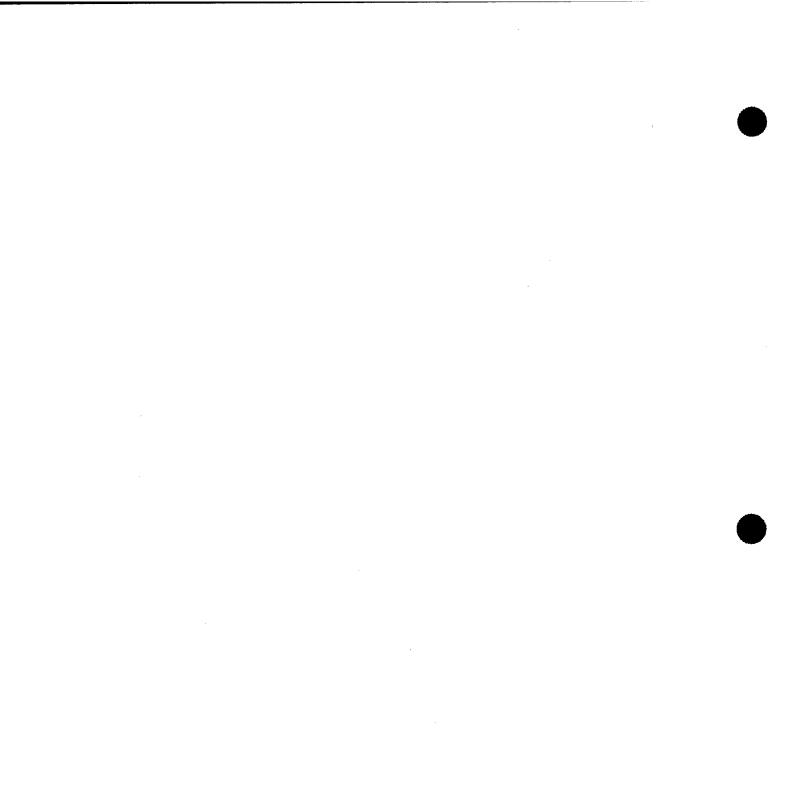
Treatment and Disposal Methods for Infectious Medical Waste (FGS-Turkey, Table 8-1)

Type of Medical Waste	Method of Treatment	Method of Disposal
Microbiological	Steam sterilization Chemical disinfection Incineration	MSWLF ¹
Pathological	Incineration ² Cremation	MSWLF Burial Cremation
Bulk blood	3	Domestic wastewater treatment plant
Suction canister waste	None	Domestic wastewater treatment plant Incineration
Sharps in sharps containers	Steam sterilization Incineration	MSWLF

¹ Consult the relevant requirements of this section for standards for solid waste landfills.

² Placentas may also be ground and discharged to a domestic wastewater treatment plant that complies with the standards of Section 12, *Wastewater Management*.

³ Bulk blood known to be infectious must be treated by incineration or steam sterilization before disposal.



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INSTALLATION:	COMPLIANCE CATEGORY:	DATE:	REVIEWER(S
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SECTION 10

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STORAGE TANK MANAGEMENT

Turkey ECAMP

SECTION 10

STORAGE TANK MANAGEMENT

A. Applicability of This Section

This section applies to U.S. Air Force (USAF) installations that have aboveground storage tanks (ASTs) and/or underground storage tanks (USTs), whether or not those tanks are organizational tanks and regardless of the nature of their contents; that is, it addresses the management of ASTs and USTs, whether they are used to store hazardous substances, hazardous waste, or petroleum, oil, and lubricant (POL).

The regulatory requirements in this section are based on Department of Defense (DOD) regulations and Air Force Instructions (AFIs) that apply at overseas installations. Management Practices (MPs) are derived from U.S. Environmental Protection Agency (USEPA) regulations that are not mandatory overseas but are important to follow to preserve the health and safety of Air Force (AF) employees and protect the environment.

B. DOD Directives/Instructions

• Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 9, outlines the criteria for the control and abatement of pollution from the storage, transfer, and distribution of petroleum products. Chapter 6 of that document addresses hazardous waste tank systems, and Chapter 19 details requirements for USTs in general.

C. U.S. Air Force Documents

- AFI 23-201, *Fuels Management*, 1 October 1996, provides managers at all AF activities with policy and procedures for fuels operations.
- AFI 23-204, *Organizational Fuel Tanks*, 27 April 1994, contains guidelines and procedures for establishing and operating organizational fuel tanks. In addition, it identifies responsibilities and streamlines the procedures for managing such tanks.
- Air Force Manual (AFM) 85-16, *Maintenance of Petroleum Systems*, governs the maintenance of permanently installed storage and dispensing systems for petroleum and unconventional fuels.

D. Responsibility for Compliance

• The Safety Manager is responsible for conducting workplace safety evaluations and inspections of the handling and storage of hazardous materials and waste. The Safety Manager will provide the appropriate manager with a report of his or her findings and recommended corrective actions. The Safety Manager is also responsible for ensuring the prompt and accurate investigation of any hazardous material mishaps that result in injury or property damage.

- The Base Fuels Management Officer (BFMO) is responsible for the safe and efficient receipt, storage, handling, issuing, and accounting of all petroleum products and for all general operations and inspections.
- The Base Civil Engineer (BCE) is responsible for the maintenance of all installed petroleum storage and dispensing systems. This responsibility often is discharged by the Liquid Fuels Maintenance (LFM) shop. The BCE also is responsible for the calibration of permanently installed meters.
- The Base Environmental Coordinator (BEC) monitors all POL activities that may affect the environment and usually is responsible for the coordination of the Environmental Protection Committee (EPC) review and updates of the spill plan. The BEC often coordinates notification of reportable spills on behalf of the Installation On-scene Commander (IOSC).
- The Bioenvironmental Engineering Services (BES) takes samples to determine the chemical nature, pollutant concentration, and extent of each reportable-quantity spill as required for response actions and documentation.

E. Definitions

- Bulk Petroleum Products liquid petroleum products transported by various means and stored in tanks or containers having an individual fill capacity greater than 250 L [≅66 gal] (AFI 23-201, Attachment 1).
- Bulk Storage Tanks field-erected tanks, usually having a capacity greater than 190,000 L (50,000 gal), and constructed aboveground or belowground (FGS-Turkey 20).
- *Field-Constructed Tank* a field-constructed tank is any tank assembled piece by piece in the field, such as welded steel or concrete tanks (FGS-Turkey 20).
- *Hazardous Substance* any substance having the potential to do serious harm to human health or the environment if spilled or released in a reportable quantity (RQ). A listing of these substances and corresponding RQ is contained in Table 4-1, Chart A.4. The term does not include (FGS-Turkey 20):
 - 1. petroleum, including crude POL or any fraction thereof, that is not otherwise specifically listed or designated as a hazardous substance above
 - 2. natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).
- *Hazardous Substance UST* a UST that contains a hazardous substance (but not including hazardous waste as defined in Section 4, *Hazardous Waste Management*) or any mixture of such substances and petroleum, and which is not a petroleum UST (FGS-Turkey 20).
- *Hazardous Waste* a discarded material that may be solid, semisolid, liquid, or contained gas and either exhibits a characteristic of a hazardous waste in Table 4-1, Section A-1 or is listed as a hazardous waste in Table 4-1, Chart A.4 (FGS-Turkey 20).
- *Hazardous Waste Storage Area (HWSA)* a location on a DOD installation where more than 206 L (55 gal) of hazardous waste or 1 L (1 qt) of acute hazardous waste from any one waste stream is stored prior to shipment for treatment or disposal (FGS-Turkey 20).

- *Hazardous Waste Storage Area Manager* a person or agency on the installation assigned the operational responsibility for receiving, storing, inspecting, and general management of the installation's HWSA or HWSA program (FGS-Turkey 20).
- Incompatible Wastes wastes are incompatible when their mixture causes reactions which: (FGS-Turkey 20):
 - 1. generate extreme heat or pressure, fire or explosions, or violent reactions
 - 2. produce uncontrolled toxic musts, fumes, dusts, or gasses in sufficient quantities to threaten human health or the environment
 - 3. produce uncontrolled flammable gasses in sufficient quantities to pose a risk of fire or explosion
 - 4. damage the structural integrity of the storage device or the environment.

(NOTE: See 40 Code of Federal Regulations (CFR) 264.17(b) and Appendix V for examples of potentially incompatible wastes.)

- *Issue Tank* a type of organizational fuel tank, namely one that is not permanently connected to any equipment or facility and that may be used to fuel vehicles (such as mobile trailers, ground-support or heavy equipment) or portable containers (AFI 23-204, para 2).
- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- New Underground Storage Tank any UST the installation or significant modification of which began on or after 1 October 1994 (FGS-Turkey 20).
- *Oil* POL of any kind or in any form, including, but not limited to, petroleum, fuel POL, sludge, POL refuse, and POL mixed with wastes other than dredged spoil (FGS-Turkey 20).
- Organizational Fuel Tank any tank not under exclusive fuels management control. They are fixed (permanently installed) or portable but do not include fuel tanks integral to vehicles or equipment, any type of hand carried safety cans, 55-gallon drums, or missile propellant conditioning systems. There are three categories of organizational fuel tanks: support, issue, and portable (q.v.) (AFI 23-201, Attachment 5, Section B and AFI 23-204, para 2).
- *Petroleum, Oil, and Lubricant (POL)* includes, but is not limited to, petroleum and petroleumbased substances comprised of complex blends of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, residual fuel oils, lubricants, petroleum solvents, and used oils (FGS-Turkey 20).
- *POL Facility* an installation with any individual aboveground tank of 2500 L (660 gal) or greater, aggregate aboveground storage of 5000 L (1320 gal) or greater, UST storage of greater than 15,900 L (4200 gal) or a pipeline facility as identified in the definition of a UST (FGS-Turkey 20).
- *Portable Tank* a type of organization fuel tank, namely a portable tank that may be used as either an issue or a support tank. Any mobile or portable tank (for example, A1B or vehicle-mounted POD tanks, Mobile Engine Test Stand Tank, etc.) that is used for mobility, maintenance, research and development, or a similar purpose, is a portable tank. A portable tank may be used as either an issue or a support tank (AFI 23-204, para 2).

- *Reportable Quantity (RQ)* a released quantity of POL or quantities of hazardous substances that exceeds those identified in this section of the manual or in the RQ column, Table 4-1, Chart A.4 (FGS-Turkey 20).
- *Significant Spill* an uncontained release to the land or water in excess of any of the following quantities (FGS-Turkey 20):
 - 1. for hazardous waste or hazardous substance identified as a result of inclusion in Table 4-1, Chart A.4, any quantity in excess of the RQ listed therein
 - 2. for POL or liquid or semi-liquid hazardous material, hazardous waste or hazardous substance, in excess of 416 L (110 gal)
 - 3. for other solid hazardous material, in excess of 225 kg (500 lb).
- Spill a spill can occur and must be rectified for any amount. Only significant spills need be reported (See Significant Spill.) (FGS-Turkey 20).
- Storage Tank a fixed container designed to store POL (FGS-Turkey 20).
- Support Tank a type of organizational fuel tank, namely one that is connected by fixed piping to a consuming facility or installed piece of equipment. Examples include day tanks for power plants and boilers, space heater tanks, aviation test cell tanks, and tanks for electrical generators (AFI 23-204, para 2).
- *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, recover energy or material resources from the waste, or render such waste nonhazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume (FGS-Turkey 20).
- Underground Storage Tank (UST) any tank, including underground piping connected thereto, larger than 416 L (110 gal) that is used to contain POL products or hazardous substances and the volume of which, including the volume of connected pipes, is 10 percent or more beneath the surface of the ground, but does not include (FGS-Turkey 20):
 - 1. tanks containing heating oil used for consumptive use on the premises where it is stored
 - 2. septic tanks
 - 3. stormwater or wastewater collection systems
 - 4. flow through process tanks
 - 5. surface impoundments, pits, ponds, or lagoons
 - 6. field constructed tanks
 - 7. hydrant fueling systems.

STORAGE TANK MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations	10-1 through 10-3	(1)(2)(3)(12)
ASTs	10-4 through 10-14	(1)(3)(4)(5)(7)
USTs General New USTs Existing USTs Leaking USTs Additional Requirements for Hazardous Substance USTs	10-15 through 10-20 10-21 through 10-23 10-24 through 10-26 10-27 through 10-29 10-30 through 10-32	(1)(2)(3)(4)(7)(13)(1)(3)(4)(7)(8)(13)(1)(3)(4)(7)(13)(1)(3)(4)(13)(2)(13)
Hazardous Waste Tank Sys- tems	10-33 through 10-41	(1)(2)(13)
Organizational Fuel Tanks	10-42 through	(1)(2)(3)(4)(7)(10)

(a) CONTACT/LOCATION CODE:

- (1) BEC (Base Environmental Coordinator)
- (2) BCE (Base Civil Engineer)
- (3) BFMO (Base Fuels Management Office)
- (4) LFM (Liquid Fuels Maintenance)
- (5) BES (Bioenvironmental Engineering Services)
- (6) Base Fire Department
- (7) Power Production
- (8) AAFES (Army/Air Force Exchange Service) Service Station Manager
- (9) Generating Activities
- (10) Vehicle Maintenance Shop
- (11) Safety Officer
- (12) Base Staff Judge Advocate
- (13) Hazardous Waste Storage Area Manager



STORAGE TANK MANAGEMENT

Records To Review

- UST inventory
- Records of all spills, leaks, and associated site assessment/cleanup activities

Physical Features To Inspect

- Aboveground storage tanks and dikes
- UST areas

People To Interview

- BEC (Base Environmental Coordinator)
- BCE (Base Civil Engineer)
- BFMO (Base Fuels Management Office)
- LFM (Liquid Fuels Maintenance)
- BES (Bioenvironmental Engineering Services)
- Base Fire Department
- Power Production
- AAFES (Army/Air Force Exchange Service) Service Station Manager
- Generating Activities
- Vehicle Maintenance Shop
- Safety Officer
- Base Staff Judge Advocate
- Hazardous Waste Storage Area Manager

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
ALL INSTALLATIONS	
10-1. Copies of all relevant DOD directives/ instructions, USAF directives, and guidance documents should be maintained at the installa- tion (MP).	 Verify that the Base Staff Judge Advocate has available the host-nation FGS and relevant USAF documents. (1)(12) (NOTE: Among the relevant documents are the following: AFI 23-201, <i>Fuels Management</i>, 1 October 1996 AFI 23-204, <i>Organizational Fuel Tanks</i>, 27 April 1994 AFM 85-16, <i>Maintenance of Petroleum Systems</i>.)
10-2. Installations must meet regulatory requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether any new regulations concerning storage tank management have been issued since the finalization of the manual. (1)(2)(12) Verify that the installation is in compliance with newly issued regulations.
10-3. All fuel tanks con- trolled by BFMO must be equipped with high-level alarms and/or automatic high-level shut-off valves (AFI 23-201, para A10.1).	Verify that all fuel tanks controlled by BFMO have high-level alarms and/or automatic high-level shut-off valves. (3)(NOTE: This requirement applies to both ASTs and USTs under the control of BFMO.)Verify that BFMO has established safe fill levels below the high-level alarm level.
ASTs 10-4. All ASTs must have secondary contain- ment that is impermeable to petroleum products (AFI 23-201, para A10.1).	Verify that all ASTs have secondary containment that is impermeable to petroleum products. (3)(4)
10-5. Secondary con- tainment for bulk POL ASTs must meet specific requirements (FGS-Tur- key 9-2.A and 9-2.B).	Verify that, for all bulk POL ASTs, the secondary means of containment has sufficient capacity for the entire contents plus sufficient free board to allow for precipitation and expansion of product. (1)(3)(4)(7) Verify that permeability of diked areas does not exceed 10^{-7} cm/s [~4 x 10^{-8} in./s].

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COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
10-6. Dikes around bulk ASTs should be inspected daily (MP).	Verify that dikes are inspected daily. (3) Verify that any deficiencies noted on Air Force Technical Form (AFTO) Form 39 have been corrected. (NOTE: This MP also applies to diking around tanks that are not under exclusive fuels management control.)	
10-7. Drainage of storm- water from diked areas around bulk POL ASTs must be controlled by a valve (FGS-Turkey 9- 2.C).	Verify that drainage of stormwater from diked areas around bulk POL ASTs is con- trolled by a valve. (3)(4) Verify that such valves are locked closed when not in active use.	
10-8. Certain good management practices should be followed when tending diked areas around bulk ASTs (MP).	Verify that drainage valves are attended when open. (3)(4)Verify that drainage water is tested to determine whether it represents a harmful discharge.Verify that water drained from diked areas does not cause a harmful discharge.Verify that personnel draining the diked areas know how to identify a discharge.	
10-9. Drainage water from diked areas around bulk POL ASTs that is determined to contain petroleum products in harmful quantities must be treated before dis- charge (FGS-Turkey 9- 2.D and AFI 23-201, para A10.1).	 Verify that, prior to draining stormwater from diked areas, the water is inspected for petroleum sheen. (3)(4) Verify that any sheen is collected with adsorbent material prior to drainage, or treated using an oil-water separator. Verify that the adsorbent material is disposed of according to any hazardous characteristics it exhibits. Verify that drainage water that contains residual petroleum products or hazardous chemicals is not discharged. 	

REVIEWER CHECKS: August 1997 Verify that an MOA has been prepared and signed or coordinated through the BES and the BEC. (1)(3)(4)(5) Verify that copies of the MOA are on file at BFMO, the Service Call Desk, LFM, BEC, BCE, and BES. (NOTE: This MP is based on guidelines found in AFM 85-16, Attachment 5.) Verify that tank cleaning wastes are tested for hazardous characteristics as defined in Table 4-1, Section A-2. (1)(3)(4) Verify that tank bottom waters that are periodically drained from bulk storage tanks are collected and tested for hazardous characteristics. Verify that wastes that test positive for hazardous characteristics are handled as haz- ardous waste.
and the BEC. (1)(3)(4)(5) Verify that copies of the MOA are on file at BFMO, the Service Call Desk, LFM, BEC, BCE, and BES. (NOTE: This MP is based on guidelines found in AFM 85-16, Attachment 5.) Verify that tank cleaning wastes are tested for hazardous characteristics as defined in Table 4-1, Section A-2. (1)(3)(4) Verify that tank bottom waters that are periodically drained from bulk storage tanks are collected and tested for hazardous characteristics. Verify that wastes that test positive for hazardous characteristics are handled as haz-
 BEC, BCE, and BES. (NOTE: This MP is based on guidelines found in AFM 85-16, Attachment 5.) Verify that tank cleaning wastes are tested for hazardous characteristics as defined in Table 4-1, Section A-2. (1)(3)(4) Verify that tank bottom waters that are periodically drained from bulk storage tanks are collected and tested for hazardous characteristics. Verify that wastes that test positive for hazardous characteristics are handled as hazardous characteristics.
Verify that tank cleaning wastes are tested for hazardous characteristics as defined in Table 4-1, Section A-2. (1)(3)(4) Verify that tank bottom waters that are periodically drained from bulk storage tanks are collected and tested for hazardous characteristics. Verify that wastes that test positive for hazardous characteristics are handled as haze
Table 4-1, Section A-2. (1)(3)(4) Verify that tank bottom waters that are periodically drained from bulk storage tanks are collected and tested for hazardous characteristics. Verify that wastes that test positive for hazardous characteristics are handled as haz-
are collected and tested for hazardous characteristics. Verify that wastes that test positive for hazardous characteristics are handled as haz-
Verify that wastes not testing positive for hazardous characteristics are disposed of ir accordance with Section 9, Solid Waste Management or Section 12, Wastewater Management.
Verify that periodic leak tests have been conducted. $(1)(3)(4)(7)$
(NOTE: A decrease in converted fuel volume equal to or greater than 0.65 cm [0.25 in.] constitutes a suspected leak).
 (NOTE: Such techniques as the following may be employed to test tank integrity: hydrostatic testing visual inspection a system of nondestructive shell thickness testing.)
Verify that the BCE, Environmental Coordinator, and Safety Officer have been noti- fied of all confirmed leaks.
Verify that leaking tanks have been repaired or replaced.
Verify that fuels personnel are present for all inoculations of leak detection chemicals in BFMO-controlled bulk ASTs. (3)
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COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
10-14. Installations	Verify that inspections have been conducted as required. $(1)(3)(4)(7)$	
should inspect motor gas (MOGAS), diesel, kero-	Verify that leaking or deteriorated tanks have been repaired or replaced.	
sene, and aviation fuel test cell storage tanks periodically (MP).	Verify that leaks were reported to the BCE, Environmental Coordinator, and Safety Officer.	
USTs		
General		
10-15. Installations must maintain a UST inventory (FGS-Turkey 19-1).	Verify that the installation has an inventory of USTs (including hazardous substance USTs). (1)(2)(13)	
10-16. Installations should use UST systems made of or lined with materials compatible with the substance stored (MP).	Verify that the substances stored in UST systems are compatible with the system. (1)(7)(13)	
10-17. The filling of a UST should include the	Verify that controls are in use that prevent overfilling and spilling. $(1)(3)(4)(13)$	
prevention of overfilling and spilling of the sub- stance (MP).	(NOTE: It is useful to observe the filling operations, to review records for reports, and to check surrounding grounds for visible or odorous indications of contaminated soil.)	
	Verify that the level of the UST is checked before a transfer is made.	
	Verify that fill lines are capped and locked.	
10-18. UST systems with corrosion protection should meet specific requirements (MP).	Determine which UST systems at the installation have corrosion protection. $(1)(3)(4)(7)(13)$	
	Verify that the corrosion protection system operates continuously to provide corro- sion protection to the metal components that routinely contain regulated substances and are in contact with the ground.	
	Verify that all cathodic protection systems are tested within 6 mo after installation and every 3 yr thereafter.	
	Verify that UST systems with impressed current cathodic protection are inspected every 60 days.	

⁽¹⁾ BEC (Base Environmental Coordinator) (2) BCE (Base Civil Engineer) (3) BFMO (Base Fuels Management Office) (4) LFM (Liquid Fuels Maintenance) (5) BES (Bioenvironmental Engineering Services) (6) Base Fire Department (7) Power Production (8) AAFES (Army/ Air Force Exchange Service) Service Station Manager (9) Generating Activities (10) Vehicle Maintenance Shop (11) Safety Officer (12) Base Staff Judge Advocate (13) HWSA (Hazardous Waste Storage Area) Manager 10 - 12

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
10-18. (continued)	Verify that inspection records are maintained of the last three inspections for system with impressed current cathodic protection and of the last two inspections for a other cathodic protection systems.
	Verify that new USTs are appropriately protected from corrosion.
	Verify that the voltage is greater than -0.85 V, but not more than -3.0 V (monthly) for impressed current systems.
	Verify that the voltage is greater than -0.85 V, but not more than -3.0 V (biannually for sacrificial anode systems.
	Verify that leak detection and failure are reported.
10-19. Repairs to USTs should be performed according to industry	Verify that the following procedures are used to repair USTs: (1)(3)(4)(7)(13) - fiberglass reinforced tanks are repaired by the manufacturer's authorized repre-
standards (MP).	 sentative or according to industry standards metal pipe fittings and sections that have leaked because of corrosion ar replaced, whereas fiberglass may be repaired according to manufacturer's specifications.
	Verify that tanks and piping that have been replaced or repaired are tested for tighness within 30 days.
	 (NOTE: Tanks and piping need not be tested if: repairs are internally inspected repaired portion is already monitored monthly an equally protective test is used.)
	Verify that, within 6 mo of repair, tanks with cathodic protection systems are teste as follows:
	 every 3 yr thereafter for all cathodic protection systems every 60 days for impressed current cathodic protection systems.
	Verify that records of repairs are maintained for the life of the tank.
10-20. Fuels personnel must be present for all inoculations of leak detection chemicals in BFMO-controlled bulk USTs (AFI 23-201, para A10.3).	Verify that fuels personnel are present for all inoculations of leak detection chemical in BFMO-controlled bulk USTs. (3)

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
New USTs	(NOTE: These requirements apply to USTs for POL and to those for hazardous sub- stances.)
10-21. New tanks and piping must have corro-	Determine whether any USTs have been installed since 1 October 1994. (1)(3)(13)
sion protection (FGS-Tur- key 19-2.A).	Verify that such new tanks and piping have corrosion protection.
Key 19 2.11).	(NOTE: This requirement does not apply if the tanks and/or piping are constructed of fiberglass or other noncorrodible materials.)
	Verify that the corrosion protection system is certified by a competent authority.
10-22. New USTs must be fitted with spill and overfill prevention equip-	Verify that new USTs have spill and overflow prevention equipment. (1)(3)(4)(7)(8)(13)
ment (FGS-Turkey 19- 2.B).	(NOTE: This equipment is not required if the UST system is filled by transfers of no more than 95 L (25 gal) at one time.)
	Verify that, where spill and overfill prevention are required, a spill containment box is installed around the fill pipe.
	Verify that USTs are fitted with one of the following methods of overfill prevention:
	 an automatic shut-off device set at 95 percent of tank capacity a high level alarm set at 90 percent of tank capacity.
10-23. Leak detection systems on new USTs must meet specific operat- ing requirements (FGS- Turkey 19-2.C).	Verify that leak detection systems are capable of detecting a 0.75 L (0.2 gal) per hour leak rate or a release of 460 L (150 gal) (or 1 percent tank volume, whichever is greater) within 30 days with a probability of detection of 0.95 and a probability of false alarm of not more than 0.05. (1)(3)(13)
	Verify that USTs installed after 1 October 1994 use one of the following leak detec- tion methods:
	 automatic tank gauging vapor monitoring groundwater monitoring interstitial monitoring.
	Verify that new pressurized piping is equipped with automatic line leak detectors.
	Verify that new pressurized piping is either tightness tested annually or monitored monthly.
	Verify that suction piping is subject either to line tightness tests every 3 yr or to monthly monitoring.

	COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
Existing USTs	(NOTE: These requirements apply to USTs for POL and to those for hazardous substances.)	
10-24. Existing USTs and piping must be prop- erly closed if not needed or be upgraded or replaced to meet new UST standards by 1 Octo- ber 2004 (FGS-Turkey 19-3 and 19-3.A).	Verify that existing USTs and piping without leak detection are tightness tested annually according to recognized U.S. standards and inventoried monthly to verify sy tem tightness. $(1)(3)(4)(7)(13)$	
	Verify that a replacement and upgrading program is in place.	
10-25. USTs that are put out of service temporarily should have continued maintenance (MP).	Verify that proper maintenance is being performed for corrosion protection an release detection. $(1)(3)(4)(13)$	
10-26. If an existing UST has not been used	Determine whether there are USTs at the installation that have not been used for 1 or more. $(1)(3)(4)(13)$	
for 1 yr, all of the product and sludges must be removed and the tank	Verify that they were either cleaned and filled with an inert substance or removed.	
either cleaned and filled with an inert substance or	(NOTE: Water is not an inert substance.)	
removed (FGS-Turkey 19-3.C).	Verify that tank wastes are tested for hazardous characteristics.	
19-3.C).	(NOTE: See Section 4, Hazardous Waste Management.)	
Leaking USTs	(NOTE: These requirements apply to USTs for POL and to those for hazardous sul stances.)	
10-27. Leaking USTs must be removed from service immediately (FGS-Turkey 19-3.B).	Verify that leaking USTs are removed from service immediately. (1)(3)(4)(13)	
	Verify that contaminated groundwater and/or soil are remediated.	
	Verify that, if the USTs are no longer needed, they are removed from the ground.	
	Verify that, if the USTs are still needed, they are repaired or replaced.	

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
10-28. Installations with a confirmed release from a petroleum or hazardous substance UST should assemble information about the site and nature of the release (MP).	 Verify that the following information is collected: (1)(3)(4)(13) data on the nature and estimated quantities of the release data from available sources and/or site investigations concerning: surrounding population water quality use and approximate locations of wells potentially affected subsurface soil conditions locations of subsurface sewers climatological conditions land use results of site check results of free product investigation.
10-29. Installations with a confirmed release from a petroleum or hazardous substance UST, where site investigations have indi- cated free product, should, to the maximum extent possible, remove the free product (MP).	Determine whether there are release sites where the presence of free product has been confirmed. (1)(3)(4)(13) Verify that free product is removed in such a way that the spread of contamination is minimized.
ments for Hazardous Substance USTs	
10-30. Existing hazard- ous substance USTs must meet specific standards (FGS-Turkey 19-5).	Verify that existing hazardous substance tanks and piping are either upgraded or replaced to meet the requirements for new hazardous substance tanks and piping by 1 January 1999. (1)(2)(13) Verify that existing tanks and piping that do not incorporate leak detection are tightness tested annually and inventoried monthly.
10-31. New hazardous substance USTs and piping must have secondary containment (FGS-Turkey 19-2.A and 19-4.A).	Verify that new hazardous substance USTs and their associated piping have second- ary containment. (1)(2)(13) (NOTE: The standards for secondary containment can be met by using double- walled tanks and piping, liners, or vaults.)

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
10-32. Installations must monitor the interstitial space between the pri- mary and secondary con- tainment of new hazardous substance USTs monthly (FGS-Tur- key 19-4.B).	Verify that the interstitial space for tanks and piping is monitored monthly for liquid or vapors. (1)(2)(13)
HAZARDOUS WASTE TANK SYSTEMS	
10-33. Secondary con- tainment must be in place for tank systems used to store or treat hazardous waste (FGS-Turkey 6- 8.A and 6-8.D).	 (NOTE: This requirement applies to: all new tank systems or components, prior to being put into service existing tank systems when an annual leak test detects leakage tanks systems that store or treat hazardous wastes by 1 January 1999.) Verify that such tank systems have secondary containment that is: (1)(2)(13)
	 designed, installed, and operated to prevent the migration of wastes or accum lated liquid out of the system capable of detecting and collecting releases and accumulated liquids un removal is possible constructed to include one or more of the following: a liner external to the tank a vault a double-walled tank.
	 (NOTE: The provisions of this checklist item do not apply to: tank systems used to store or treat hazardous wastes that contain no free liqui and are situated inside a building with an impermeable floor tank systems, including sumps, that serve as part of a secondary containme system to collect or contain releases of hazardous wastes.)
10-34. Tank ancillary equipment should also be provided with secondary containment (MP).	 Verify that ancillary equipment has secondary containment. (1)(2)(13) (NOTE: The following equipment is exempted from this MP: aboveground piping that is visually inspected for leaks on a daily basis welded flanges, welded joints, and welded connections that are visual inspected for leaks on a daily basis sealless or magnetic coupling pumps and sealless valves that are visual inspected for leaks on a daily basis pressurized aboveground piping systems with automatic shutoff valves that a visually inspected for leaks on a daily basis

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
10-35. Existing tank systems without proper secondary containment must meet specific standards (FGS-Turkey 6-8.B).	Verify that, for tank systems without proper secondary containment, an annual deter- mination is made as to whether the tank system is leaking or is fit for use. (1)(2)(13) Verify that the installation obtains, and keeps on file at the HWSA, a written assess- ment of tank system integrity reviewed and certified by a competent authority.
10-36. When new tank systems or components are installed, HWSA managers must obtain an assessment certifying that the tank system is	Verify that the HWSA manager has received a written assessment that the tank sys- tem has sufficient structural integrity and is acceptable for the storage and treatment of hazardous waste. (1)(2)(13) Verify that the assessment indicates:
acceptable (FGS-Turkey 6-8.C).	 that the foundation, structural support, seams, connections, and pressure controls are adequately designed that the tank system has sufficient structural strength, compatibility with the waste(s), and corrosion protection to ensure that it will not collapse, rupture, or fail.
	Verify that the written assessment has been reviewed and certified by a competent authority.
10-37. Tanks used for hazardous waste treatment or storage must be operated in accordance with specific procedures (FGS-Turkey 6-8.E.1).	Verify that hazardous wastes or treatment reagents are not placed in tanks if they could cause the tank system (including ancillary equipment or containment system) to rupture, leak, corrode, or otherwise fail. (1)(2)(13)
10-38. Tank systems for ignitable, reactive, or incompatible wastes should meet specific requirements (MP).	 Verify that ignitable or reactive wastes are not placed in a tank system unless one of the following conditions is met: (1)(2)(13) the waste is treated, rendered, or mixed before or immediately after placement in the tank system so that it is no longer reactive or ignitable, and the minimum requirements for reactive and ignitable wastes are met the waste is treated or stored in such a way that it is protected from any material
	or conditions that may cause the waste to ignite or react - the tank system is used solely for emergencies. Verify that the installation maintains minimum protective distances between waste management areas and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in Tables 2-1 through 2-6 of the National Fire Pro- tection Association's (NFPA) <i>Flammable and Combustible Liquids Code</i> .
	Verify that, unless minimum safety requirements are met, incompatible wastes, or incompatible wastes and materials, are not placed in the same tank system.

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
10-38. (continued)	Verify that, unless minimum safety requirements are met, hazardous waste is no placed in a tank system that:
	 previously held an incompatible waste or material has not been decontaminated.
10-39. HWSA personnel must conduct inspections	Verify that HWSA personnel conduct and log inspections of the following at lea once each operating day: $(1)(2)(13)$
of tank systems and asso- ciated equipment (FGS- Turkey 6-8.E.2 and 6- 8.E.3).	 aboveground portions of the tank system, to detect corrosion or releases data gathered from monitoring and leak detection equipment (e.g., pressure ar temperature gauges, monitoring wells) to ensure that the system is being ope ated according to its design the construction materials and the area surrounding the tank, including the se ondary containment system, to detect erosion or signs of leakage (e.g., w spots, dead vegetation).
	Verify that the proper operation of cathodic protection systems is confirmed with 6 mo after initial installation and annually thereafter.
	Verify that all sources of impressed current are inspected and/or tested at least eve other month.
	Verify that the HWSA manager documents all tank system inspections in the operating record of the HWSA.
10-40. Installations must meet specific require-	Verify that such systems are immediately removed from service and repaired closed. $(1)(2)(5)(13)$
ments with regard to tank systems or secondary containment systems	Verify that the installation also takes the following steps:
from which there has been a leak or spill, or that are unfit for use (FGS- Turkey 6-8.F).	 stops the flow or addition of hazardous wastes to the tank inspects systems to determine the cause of the release contains the visible release and prevents further migration of the leak or spill soils or surface water
	 removes and properly disposes of any contamination of the soil and surface water completes required notifications and reports.
10-41. Installations must follow specific procedures when closing a	Determine whether the installation has closed any tank systems. (1)(2)(5)(13) Verify that all waste residues and contaminated containment system component
tank system (FGS-Tur- key 6-8.G).	soils, structures, and equipment have been removed or decontaminated to the greatest extent practicable.

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
ORGANIZATIONAL FUEL TANKS	
10-42. The BFMO must maintain a listing of all	Verify that the BFMO has a listing of all organizational fuel tanks. (3)
organizational fuel tanks (AFI 23-204, para 3.6.2).	Verify that the list identifies the tanks by the following:
-	- organization - tank location
	 type (i.e., aboveground support or underground issue) product capacity.
	(NOTE: This list may be maintained in an electronic form.)
10-43. Owning organizations must provide	(NOTE: BCE is the owning organization for all heating and power production support tanks.)
BFMO with a list of all support tanks authorized to receive fuel (AFI 23- 204, para 8.2).	Verify that the organization has provided the BFMO with a list of all support tanks authorized to receive fuel. (3)
204, paia 6.2).	Verify that the list includes the following information:
	 facility number name and telephone number of tank custodian and alternate tank size in U.S. gallons grade of fuel.
	Verify that changes are reported to BFMO as they occur.
10-44. Tank custodians must receive training	Verify that BFMO develops and maintains a program to train tank custodians. (3)
before assuming responsi- bility for tanks (AFI 23- 204, paras 13.1.1, 13.1.2, 13.1.3, 13.2, 13.3).	Verify that tank custodian training is offered when requested by commanders of using organizations and quarterly when required.
	Verify that tank custodians are trained, as a minimum, in the following areas:
	 gauging procedures for both fuel and water daily facility inspection and maintenance requirements: familiarity with facility identification markings, leak detection techniques, condition of hoses and nozzles, proper procedures for documenting and reporting noted discrepancies product accountability and proper completion of inventory product receipt/delivery procedures and required documentation and processing actions

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
10-44. (continued)	 safety precautions, proper storage of equipment, and management of reclaimed or recoverable product duties associated with checking delivery vehicles before and after fuel deliveries responsibilities under the SPCC Plan.
	Verify that the BFMO keeps documentation to support the training.
	(NOTE: BFMO determines the method of documentation, but whatever method (sig- nature cards, logs, letters, etc.) is chosen, the BFMO must provide an audit trail of trained custodians.)
	Verify that refresher training is provided when requested by the commander of the using organization.
	Verify that the BFMO also briefs fuel delivery escorts on their duties.
10-45. Organizational tank custodians should attend the Hazardous Waste Operations and	Verify that, after attending initial training with the BFMO, tank custodians attend the Hazardous Waste Operations and Emergency Response Level 1 class provided at the base level by the Disaster Preparedness Office. (3)
Emergency Response Level 1 class provided at the base level by the Disaster Preparedness Office. (MP)	(NOTE: This MP is based on a recommendation in AFI 23-204, para 13.2.3.)
10-46. Tank custodians for USTs must check weekly fuel reports to	Verify that tank custodians for USTs check weekly fuel reports to determine leakage. (1)(2)(3)(4)(7)(10)
determine leakage (AFI 23-204, para 12.1.2).	Verify that all USTs and associated piping are monitored for leaks, whether they are calibrated or not.
	Verify that suspected leaks are reported immediately to the base Environmental Man- ger.
10-47. Both single and manifolded tanks must have impervious secondary diking (AFI 23-204, para 12.1.4).	Verify that both single and manifolded tanks have impervious secondary diking. (2)(3)

REGULATORY REQUIREMENTS:REVIEWER CHECKS: August 199710-48. Installations must meet specific require- ments with regard to orga- nizational fuel tank safety and product mark- ing (AFI 23-204, para 6).Verify that all single or manifolded tanks have impervious if (3)(4)(7)(10)Verify that fuel tanks after and product mark- ing (AFI 23-204, para 6).Verify that markings identify the type of fuel in the tank.Verify that fuel tanks are marked to indicate NO SMOKING. Verify that the markings are: - in highly visible colors with large letters - visible from a distance of 50 ft [≈15 m] - positioned so as to be visible from each approach. (NOTE: The international NO SMOKING sign may be used whe MOGAS, and other products.)10-49. Unattended orga- nizational fuel tanks must be secured (AFI 23-204, para 5.1).Verify that tsnk custodians secure the following components of una tional fuel tanks using number controlled padlocks, seals or pluggi siphoning devices: (2)(3) - pump dispensing nozzles and electrical power source for all i - gauge hatches and other access points on all storage tanks - bulk fuel off-loading systems - low-point drains.	COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
 meet specific requirements with regard to organizational fuel tank safety and product marking (AFI 23-204, para 6). Verify that markings identify the type of fuel in the tank. Verify that fuel tanks are marked to indicate NO SMOKING. Verify that the markings are: in highly visible colors with large letters visible from a distance of 50 ft [≈15 m] positioned so as to be visible from each approach. (NOTE: The international NO SMOKING sign may be used whe MOGAS, and other products.) Verify that tsnk custodians secure the following components of unational fuel tanks must be secured (AFI 23-204, para 5.1). pump dispensing nozzles and electrical power source for all ingauge hatches and other access points on all storage tanks bulk fuel off-loading systems 		
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 positioned so as to be visible from each approach. (NOTE: The international NO SMOKING sign may be used whe MOGAS, and other products.) Verify that tsnk custodians secure the following components of unational fuel tanks must be secured (AFI 23-204, para 5.1). Verify that tsnk custodians and electrical power source for all is - gauge hatches and other access points on all storage tanks - bulk fuel off-loading systems 		
 10-49. Unattended organizational fuel tanks must be secured (AFI 23-204, para 5.1). Verify that tsnk custodians secure the following components of unational fuel tanks using number controlled padlocks, seals or plugging siphoning devices: (2)(3) pump dispensing nozzles and electrical power source for all in gauge hatches and other access points on all storage tanks bulk fuel off-loading systems 		
nizational fuel tanks must be secured (AFI 23-204, para 5.1).	en marking diesel,	
 pump dispensing nozzles and electrical power source for all it gauge hatches and other access points on all storage tanks bulk fuel off-loading systems 		
	ssue tanks	
Verify that, if padlocks are used, the hasp, chain, handle, or any other vides protective strength equivalent to more complicated devices.	er attachment pro-	
Verify that tank custodians have established proper key control.		
(NOTE: Combination and magnetic locks may be used.)		
10-50. Certain tanks must be equipped with calibrated dispensing meters (AFI 23-204, para 7.1.1).	dispensing meter.	
10-51. All organiza- tional fuel tanks must (1)(2)	regardless of size.	
charts (AFI 23-204, para 7.1.3). (NOTE: Computer-generated calibration charts are acceptable.)		

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
10-51. (continued)	(NOTE: This requirement may be waived by the MAJCOM Civil Engineer.)
	(NOTE: HQ USAFE has currently waived this requirement.)
10-52. All organizational fuel tanks should be inspected annually (MP).	Verify that the condition of tanks, piping, and dikes is noted. $(1)(2)$
	Verify that any confirmed leaking tanks were repaired or replaced.
10-53. Installations must	Verify that calibrated tanks are gauged daily. $(3)(4)(7)(10)$
gauge calibrated tanks daily (AF 23-204, paras 9.1 and 9.2).	Verify that all tanks are gauged before receipt of product to determine tank ullage.
10-54. All organiza- tional tank meters must be calibrated at least annu- ally (AFI 23-204, para 7.1.2).	Verify that all organizational tank meters are calibrated annually, after repairs, and when accuracy is in doubt. $(3)(4)(7)(10)$
10-55. Specific operating procedures must be followed for organizational fuel tanks (AFI 23-204, paras 7.2, 7.3, and 9).	 Verify that personnel working with calibrated tanks: (3) record daily entries on AF Form 500 take water readings with water finding paste. (NOTE: Tank custodians may use an automated program instead of AF Form 500.) Verify that personnel working with uncalibrated tanks: fill tanks to a safe level each time they receive fuel establish a method for determining quantity for each tank and keep a record of it on file verify fuel inventory. Verify that calibrated tanks are gauged daily to determine the actual physical inventory. Verify that all tanks are gauged prior to receiving product as a way of determining tank ullage.

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
10-56. Fuel must not be issued from support tanks to vehicles or other equip- ment (AFI 23-204, para 2).	Verify that fuel is not issued from support tanks to vehicles or other equipment (3)(4)

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SECTION 11

TOXIC SUBSTANCES MANAGEMENT

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Turkey ECAMP

SECTION 11

TOXIC SUBSTANCES MANAGEMENT

A. Applicability of this Section

This section applies to all U.S. Air Force (USAF) installations overseas; it is written in response to regulations and policy that are applicable to the conduct of activities that involve these programs and is used to determine the compliance status of the management activities associated with:

- Polychlorinated Biphenyls (PCBs) and in-service and out-of-service PCB Items
- asbestos in schools and on the installation
- the Air Force (AF) Radon Assessment and Mitigation Program (RAMP)
- Lead-Base Paint (LBP).

The regulatory requirements in this section are based on the *Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey* (FGS-Turkey), Department of Defense (DOD) regulations, and Air Force Instructions (AFIs) that apply at overseas installations. Management practices (MPs) are derived from U.S. Environmental Protection Agency (USEPA) regulations that are not mandatory overseas but are important to follow to preserve the health and safety of AF employees and protect the environment.

B. DOD Directives/Instructions

• Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 14, discusses the actions and controls needed to abate threats to human health and the environment from the handling, use, storage, and disposal of PCBs. Chapter 15 addresses similar issues for asbestos, and Chapter 16 outlines the criteria for assessing and mitigating radon.

C. U.S. Air Force Documents

PCBs

- There are no AFIs on PCBs; FGS-Turkey addresses issues previously covered by various policy letters.
- HQ USAF/CE Letter, Air Force Policy on Measuring Air Force PCB-Free Status Action Memorandum, 21 March 1994, revises how the AF's PCB-free status is measured. Instead of measuring the number of PCB items rendered PCB-free, the new metric is the number of installations that are PCB-free based on data in the PCB Module of the Work Information Management System - Environmental Subsystem (WIMS-ES).

Asbestos

• AFI 32-1052, *Facility Asbestos Management*, 22 March 1994, establishes requirements and assigns responsibilities to incorporate facility asbestos management principles and practices into all AF programs.

• Air Force Occupational Safety and Health (AFOSH) Standard 161-4, *Exposure to Asbestos*, January 1980, also contains information on asbestos requirements and control.

Radon

• There are no AFIs on radon; FGS-Turkey is the source for all radon-related checklist items in this manual.

LBP

• HQ USAF Policy Letter, Air Force Policy and Guidance on Lead-Based Paint (LBP) in Facilities, 24 May 1993, specifies actions necessary to protect facility occupants and workers and the environment from hazardous exposure to lead in LBPs. Table 11-1 summarizes the likelihood of LBP being present and the regulations/guidelines that normally must be followed.

D. Responsibility for Compliance

PCBs

- The Base Civil Engineer (BCE), through the Exterior Electrical Shop or the Base Environmental Coordinator (BEC), is responsible for identifying, inspecting, marking (labeling), and properly servicing PCB electrical equipment (transformers and capacitors).
- The BEC is responsible for ensuring that out-of-service items are located in a technically adequate PCB storage facility. Normally, such facilities are located at a Defense Reutilization and Marketing Office (DRMO), and the DRMO is responsible for storage, disposal transportation, and contracting for disposal.
- The Bioenvironmental Engineering Services (BES) is responsible for arranging chemical analytical support in screening electrical equipment for PCBs and for cleanup verification.

Asbestos

- The BCE appoints an Asbestos Program Officer to prepare the Asbestos Management Plan and an Asbestos Operations Officer to prepare the Asbestos Operating Plan. The BCE ensures a sufficient number of in-house technicians and supervisors are trained and equipped to remove, repair, and control asbestos-containing materials (ACMs).
- The Asbestos Program Officer prepares the Asbestos Management Plan, that contains documentation on all asbestos management efforts and the mechanism for oversight of the program.
- The Asbestos Operations Officer prepares and implements the Asbestos Operating Plan.
- The BES takes air samples, evaluates friable materials for the preservation of asbestos, and assigns Risk Assessment Codes (RACs).

Radon

• The BCE is responsible for reviewing radon assessments planning and programming and for instituting radon mitigation for existing and future facility projects. • The BES is responsible for sampling radon gas levels at installation offices, housing, day care facilities, etc. The BES provides these sample results to the BCE. The BES is also responsible for mitigation.

LBP

- The BCE participates in developing and implementing the management plan for identifying, evaluating, managing, and abating LBP. Additionally, the BCE trains personnel and maintains records of activities.
- The Chief, Aerospace Medicine ensures a coordinated epidemiological analysis of facility lead sampling results and sees to it that positive pediatric lead analysis is accomplished.
- The BES conducts testing and sampling of paint to determine the lead content. The BES participates in inspections and training activities as well.

E. Definitions

- Asbestos a generic term used to describe six distinctive varieties of fibrous mineral silicates, including chrysotile, amosite, crocidolite, tremolite asbestos, anthophylite asbestos, actinolite asbestos, and any other of these materials that have been chemically treated and/or altered (FGS-Turkey 20).
- Asbestos-Containing Material (ACM) any material containing more than 1 percent asbestos by weight (FGS-Turkey 20).
- *Capacitor* a device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric (FGS-Turkey 20).
- Chemical Waste Landfill a landfill at which a high level of protection against risk of injury to human health or the environment from migration of deposited PCBs to land, water, or the atmosphere is provided by incorporating special methods for locating, engineering, and operating the landfill (FGS-Turkey 20).
- Detailed Radon Testing a comprehensive testing program for radon (FGS-Turkey 20).
- *Friable Asbestos* any ACM that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure (FGS-Turkey 20).
- *High-Priority Facilities* with respect to LBP, facilities or portions of facilities that are or may be frequented/used by children under age seven, which are further prioritized as follows (USAF/CC Policy Letter, 24 May 1993, *AF Guidance on LBP in Facilities*, Section 5a):
 - 1. child development centers, annexes, and playground equipment
 - 2. onbase AF licensed family day care homes
 - 3. youth centers, recreational facilities, and playgrounds
 - 4. waiting areas in medical and dental treatment centers
 - 5. AF-maintained DOD schools
 - 6. military family housing (MFH) currently occupied by families with children under age seven
 - 7. remaining MFH.

- In or Near Commercial Buildings within the interior of, on the roof of, attached to the exterior wall of, in the parking area serving, or within 30 m [≈98 ft] of a nonindustrial, nonsubstation building (FGS-Turkey 20).
- *Incinerator* an engineered device using controlled flame combustion to thermally degrade PCBs and PCB Items. Examples include rotary kilns, liquid injection incinerators, cement kilns, and high temperature boilers (FGS-Turkey 20).
- *Initial Radon Screening* short-term radon testing in a statistically representative sample of selected high priority facilities. The purpose of initial radon screening is to identify installations having high radon levels (FGS-Turkey 20).
- Leak or Leaking any instance in which a PCB article, PCB container, or PCB equipment has any PCBs on any portion of its external surface (FGS-Turkey 20).
- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Marking* the marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or by any other method that meets the criteria of FGS-Turkey (FGS-Turkey 20).
- *Mitigation* actions taken to reduce radon levels in facilities having radon levels higher than 4 pCi/ L [148 Bq/m³] as identified during detailed radon testing (FGS-Turkey 20).
- *PCB Article* any manufactured article, other than a PCB container, that contains PCBs and whose surface(s) has been in direct contact with PCB. This includes capacitors, transformers, electric motors, pumps and pipes (FGS-Turkey 20).
- *PCB Article Container* any package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB articles or PCB equipment, and whose surface(s) has not been in direct contact with PCBs (FGS-Turkey 20).
- *PCB Container* any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB articles, and whose surface(s) has been in direct contact with PCBs (FGS-Turkey 20).
- *PCB-Contaminated Electrical Equipment* any electrical equipment including, but not limited to, transformers, capacitors, circuit breakers, reclosers, voltage regulators, switches, electromagnets, and cable that contain 50 ppm or greater PCB, but less than 500 ppm PCB (FGS-Turkey 20).
- *PCB Equipment* any manufactured item, other than a PCB container or a PCB article container, that contains a PCB article or other PCB equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures (FGS-Turkey 20).
- *PCB Item* any PCB article, PCB article container, PCB container, or PCB equipment that deliberately or unintentionally contains, or has as a part of it, any PCB at a concentration of 50 ppm or greater (FGS-Turkey 20).
- *PCB Transformer* any transformer that contains 500 ppm PCB or greater (FGS-Turkey 20).

- *Permissible Exposure Limit (PEL)* an airborne concentration of 0.2 of an asbestos fiber per cubic centimeter (f/cc) as an 8-h time-weighted average (FGS-Turkey 20).
- *Post-Mitigation Monitoring* follow-up radon testing in facilities where mitigation has been completed. The purpose of post-mitigation monitoring is to ensure that mitigation actions were effective in reducing radon levels below 4 pCi/L (FGS-Turkey 20).
- *Radon* a naturally occurring, odorless, colorless, inert radioactive gas that is formed from the radioactive decay of uranium (FGS-Turkey 20).
- *Restricted Access Area* areas where access by unauthorized personnel is controlled by fences, other man-made structures, or naturally occurring barriers such as mountains, cliffs, or rough terrain (FGS-Turkey 20).
- Substantial Contact Area an area that is subject to public access on a routine basis or which could result in substantial dermal contact by employees (FGS-Turkey 20).

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TOXIC SUBSTANCES MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
PCB Management		
All Installations	11-1 and 11-2	(1)(2)
PCB Items in General	11-3 and 11-4	(1)(3)
PCB Items Other Than Transformers	11-5 and 11-6	(3)
PCB Transformers	11-7 through 11-15	(1)(2)(3)
Inspections	11-16 through 11-20	(1)(3)
PCB Storage	11-21 and 11-22	(1)(3)
PCB Records	11-23 through 11-25	(1)(2)(3)
PCB Spills	11-26 through 11-28	(1)(2)(3)
PCB Disposal	11-29 through 11-41	(1)(3)(4)(5)(6)
Asbestos Management		
All Installations	11-42 and 11-43	(1)(2)
General	11-44 through 11-50	(1)(9)(10)
Personnel Safety	11-51 through 11-53	(1)(9)(10)
Renovation and Demolition	11-54 through 11-57	(1)(7)(9)(10)

(a) CONTACT/LOCATION CODE:

- (1) BCE (Environmental Planning)
- (2) BES (Bioenvironmental Engineering Services)
- (3) BCE (Exterior Electric Shop)
- (4) DRMO (Defense Reutilization and Marketing Office)
- (5) BCE (Contract Programmer)
- (6) BCE (Contract Management)
- (7) BCE (Chief of Operations and Maintenance)
- (8) School Principal
- (9) Asbestos Program Officer
- (10) Asbestos Operating Officer
- (11) SJA (Staff Judge Advocate)
- (12) Base Safety Officer
- (13) PAO (Public Affairs Officer)

TOXIC SUBSTANCES MANAGEMENT

GUIDANCE FOR CHECKLIST USERS (continued)

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
Asbestos Management (con	tinued)	
Asbestos Disposal	11-58 through 11-60	(1)(2)(9)(10)
Asbestos in Schools	11-61	(8)(9)
Radon Management		
All Installations	11-62 through 11-72	(1)(2)
Lead-Based Paint (LBP)		
All Installations	11-73 through 11-82	(1)(2)

(a) CONTACT/LOCATION CODE:

- (1) BCE (Environmental Planning)
- (2) BES (Bioenvironmental Engineering Services)
- (3) BCE (Exterior Electric Shop)
- (4) DRMO (Defense Reutilization and Marketing Office)
- (5) BCE (Contract Programmer)
- (6) BCE (Contract Management)
- (7) BCE (Chief of Operations and Maintenance)
- (8) School Principal
- (9) Asbestos Program Officer
- (10) Asbestos Operating Officer
- (11) SJA (Staff Judge Advocate)
- (12) Base Safety Officer
- (13) PAO (Public Affairs Officer)

TOXIC SUBSTANCES MANAGEMENT

Records To Review

- Inspection, storage, maintenance, and disposal records for PCBs/PCB Items
- PCB Equipment inventory and sampling results
- Asbestos management plan
- Asbestos survey documentation
- · Documentation of asbestos sampling and analytical results
- Documentation of preventive measure or action
- Results of air sampling at the conclusion of response action
- Records of asbestos training program
- List of buildings insulated with asbestos or housing ACMs
- Record of demolition or renovation projects completed in the past 5 yr that involve friable asbestos
- Records of radon tests
- LBP Hazard Abatement Plan

Physical Features To Inspect

- PCB storage areas
- Equipment, fluids, and other items, used or stored at the facility, that contain PCBs
- · Pipe, spray-on, duct, and troweled cementitious insulation, and boiler lagging
- · Ceiling and floor pipes

People To Interview

- BCE (Environmental Planning)
- BES (Bioenvironmental Engineering Services)
- BCE (Exterior Electric Shop)
- DRMO (Defense Reutilization and Marketing Office)
- BCE (Contract Programmer)
- BCE (Contract Management)
- BCE (Chief of Operations and Maintenance)
- School Principal
- Asbestos Program Officer
- Asbestos Operating Officer
- SJA (Staff Judge Advocate)
- · Base Safety Officer
- PAO (Public Affairs Officer)

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COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
PCB MANAGEMENT	
All Installations	
11-1. Copies of all relevant DOD directives/instructions, USAF direc-	Verify that the Base Staff Judge Advocate has available the host-nation FGS and relevant USAF documents. (1)(11)
tives, and guidance docu- ments should be main- tained at the installation (MP).	(NOTE: Among the relevant documents is HQ USAF/CE Letter, Air Force Policy on Measuring Air Force PCB-Free Status - Action Memorandum, 21 March 1994.)
11-2. Installations must meet regulatory requirements issued since the	Determine whether new regulations concerning PCBs have been issued since the finalization of the manual. $(1)(2)(11)$
finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Verify that the installation is in compliance with newly issued regulations.
PCB Items in General	
11-3. PCB Items (see definition) and rooms,	Verify that PCB Items and rooms, vaults, or storage rooms that contain them are prominently marked in English and Turkish. $(1)(3)$
vaults, or storage rooms that contain them must be	Verify that the items or areas are identified as containing PCBs.
marked in English and Turkish (FGS-Turkey 14-	Verify that there is a warning against improper handling and disposal.
1.C).	Verify that a phone number is provided for use in the event of spills or questions about disposal.
11-4. When PCB items are removed from service,	Determine whether the installation is storing any PCB items that have been removed from service. (3)
they must be marked with the removal date (FGS-Turkey 14-3.C).	Verify that all PCB items removed from service are marked with the date on which they were removed from service.

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
PCB Items Other Than Transformers		
11-5. Installations must service electromagnets,	Verify that PCB-contaminated electrical equipment is serviced only with dielectric fluid that contains less than 500 ppm PCB. (3)	
switches, and voltage reg- ulators that may contain PCBs at any concentra-	Verify that the installation does not service any electromagnets, switches, or voltage regulators that contain PCB concentrations of 500 ppm or greater.	
tion in accordance with specific standards (FGS- Turkey 14-3.A).	(NOTE: This restriction applies only if it is necessary to remove and rework any internal components as part of service.)	
	Verify that PCBs removed during servicing are captured and either reused as dielec- tric fluid or disposed of properly.	
	Verify that PCBs from electromagnets, switches, and voltage regulators with a PCB concentration of at least 500 ppm are not mixed with or added to dielectric fluid from PCB-contaminated electrical equipment.	
	Verify that dielectric fluids that contain 500 ppm or greater are not used as dielectric fluid in any electromagnets, switches, and voltage regulators classified as PCB-contaminated electrical equipment.	
11-6. Installations must meet specific require-	Verify that the installation does not use PCB large capacitors (whether of high or low voltage) that pose an exposure risk to food or feed. (3)	
ments with regard to the use and storage of PCB large capacitors (FGS-	Verify that the installation does not store such capacitors for use.	
Turkey 14-3.B).	Verify that the installation uses PCB large capacitors (whether of high or low volt- age) only in restricted-access electrical substations or in contained and restricted- access indoor areas.	
	Verify that there is no public access to such capacitors that have been installed indoors.	
	Verify that such capacitors have been installed indoors only where the roof, walls, and floor are adequate to contain any release of PCBs.	

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
PCB Transformers (500 ppm or greater)	
11-7. PCB transformers must not be used in any application that poses a risk of contamination to food or feed (FGS-Turkey 14-2.A).	Verify that no PCB transformer that is in use or in storage for reuse is used in an application that poses a risk of contamination to food or feed. $(1)(3)$
11-8. Certain PCB transformers must be equipped with electrical protection (FGS-Turkey 14-2.C).	Verify that PCB transformers that are used in or near commercial buildings of located in sidewalk vaults have electrical protection to minimize transformer failur that would result in the release of PCBs. (1)(3)
11-9. PCB transformers must be registered with the fire department (FGS-Turkey 14-2.B).	 Verify that all PCB transformers, including those in storage for reuse, are registere with the servicing fire department. (1)(3) (NOTE: It would be useful to provide the following information: physical location of PCB transformer(s) principle constituent of dielectric fluid (i.e., PCBs, mineral oil, silicone oil, etc name and telephone number of contact person knowledgeable of PCB transformer(s).)
11-10. Combustible materials should not be stored near PCB transformers (MP).	Verify that all combustible materials have been removed from areas within PCE transformer enclosures (i.e., vaults or partitioned areas) and from areas within 5 r [16 ft] of PCB transformers or their enclosures. (1)(3) (NOTE: Combustible materials include, but are not limited to, paints, solvents, plastics, paper, and scrap wood.)
11-11. Installations must repair or replace leaking PCB Transformers within 48 h or as soon as possible (FGS-Turkey 14-1.G).	Verify that the installation repairs or replaces leaking PCB Transformers within 48 a (1)(2)(3) Verify that leaking PCB fluids are containerized.

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11-12. Personnel who discover leaking PCB transformers should follow proper reporting procedures (MP).	Verify that personnel who discover leaking PCB transformers follow proper report- ing procedures. (1)(3)	
11-13. PCB transformers must be serviced prop- erly (FGS-Turkey 14- 2.E).	 Verify that servicing activities are properly conducted as follows: (1)(3) transformers classified as PCB-contaminated electrical equipment are serviced only with dielectric fluid that contains less than 500 ppm PCB the transformer coil is not removed during servicing PCBs removed during servicing are captured and either reused or disposed of properly the PCBs from a PCB transformer are not mixed with or added to dielectric fluid from PCB-contaminated electrical equipment dielectric fluids containing less than 500 ppm that are mixed with fluids containing 500 ppm or greater are not used as dielectric fluid in any electrical equipment dielectric fluids containing 500 ppm or greater are not used as dielectric fluid in any transformers classified as PCB-contaminated electrical equipment. (NOTE: PCB transformers may be serviced with dielectric fluid at any concentration.) 	
 11-14. PCB transformers that have been removed and stored for reuse must be returned to their original application and location only (FGS-Turkey 14-2.D). 11-15. Installations must take specific actions if a PCB transformer is involved in a fire (FGS-Turkey 14-2.G). 	 Verify that PCB transformers are returned to their original application and location and not used at another location. (1)(3) (NOTE: This restriction does not apply if there is no practical alternative to use at another location.) Verify that such alternative use does not exceed 1 yr. Verify that, if a PCB transformer is involved in a fire and subjected to sufficient heat and/or pressure to result in violent or nonviolent rupture, measures are taken to control water runoff. (1)(2)(3) Verify that runoff water is tested and treated if required. (NOTE: Blocking floor drains is one way to control water runoff.) 	

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Inspections	
11-16. Installations must inspect certain PCB transformers (FGS-Tur-	Verify that leaking PCB transformers that have not been repaired or replaced ar inspected daily. (1)(3)
key 14-1.G, 14-2.F, and 14-2.H).	Verify that in-service PCB transformers are inspected at least once every 3 mo.
	Verify that the following are inspected at least every 12 mo:
	- PCB transformers with impervious, undrained secondary containment capacities of 100 percent of dielectric fluid
	- PCB transformers that have been tested and found to contain less tha 60,000 ppm PCBs.
	(NOTE: It would be useful to record the following information as part of each PC transformer inspection: - location of transformer
	 dates of each visual inspection date when any leak was discovered
	- name of person conducting inspection
	- location and estimate of the quantity of any leaks
	 data and description of any cleanup, containment, or repair performed results of any daily inspections of transformers with uncorrected active leaks.)
11-17. Certain items in	Verify that the following items are inspected weekly while in temporary storage:
temporary storage must be inspected weekly (FGS-Turkey 14-4.B).	 nonleaking PCB items, marked to indicate whether they are PCB articles of PCB equipment
	- leaking PCB articles and PCB equipment placed in a nonleaking PCB contained that contains sufficient sorbent material to absorb liquid contained on the PC
	article or equipment - PCB containers in which nonliquid PCBs have been placed
	- PCB containers in which liquid PCBs at a concentration between 50 an 499 ppm have been placed, when containers are marked to indicate less tha 500 ppm PCB.
·····	

 ing and structurally undamaged large, high- voltage PCB capacitors and PCB-contaminated electric equipment that have not beck meets the requirements of FGS-Italy 14-4.A. PCB capacitors and PCB-contaminated electric equipment that have not been drained of free-flowing dielectric fluid must be inspected weekly (FGS-Turkey 14- 4.C). Installations must inspect all other storage areas than the above at least monthly (FGS-Turkey 14-4.D). Verify that all storage areas other than the above are inspected monthly. (3) Verify that all required periodic inspections are documented at the instal- lation (FGS-Turkey 14- 1.F). PCB storage I1-21. PCBs and PCB items at concentrations greater than 50 ppm that are to be stored in a facility that will ensure the containment of PCBs (FGS-Turkey 14- 4.A through 14-4.C). Verify that PCB storage areas meet the following requirements: (1)(3) the roof and walls of the building in which the PCBs are stored are constructer so as to prevent rainfall from contacting PCBs and PCB items a 15-cm (6-in.) containment berm surrounds the entire area in which PCBs or are to be stored in a facility that will ensure the containment of PCBs (FGS-Turkey 14- 4. A through 14-4.C). 	COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP	
 ing and structurally undamaged large, high voltage PCB capacitors and PCB-contaminated electric equipment that have not beck and PCB-contaminated electric equipment that have not been drained of free-flowing dielectric fluid are stored on pallets next to a storage area th meets the requirements of FGS-Italy 14-4.A. (NOTE: See checklist item 11-21.) Verify that such items are inspected weekly. Verify that such items are inspected weekly. Verify that all storage areas other than the above are inspected monthly. (3) Verify that all storage areas other than the above are inspected monthly. (3) Verify that all required periodic inspections are documented at the installation. (1)(2) Verify that all required periodic inspections are documented at the installation. (1)(2) Verify that all required periodic inspections are documented at the installation. (1)(2) Verify that PCB storage 11-21. PCBs and PCB items at concentrations greater than 50 ppm that are to be stored before in a facility that will ensure the containment of PCBs (FGS-Turkey 14- 4. A through 14-4.C). Verify that PCB storage areas meet the following requirements: (1)(3) the roof and walls of the building in which the PCBs are stored are constructer so as to prevent rainfall from contacting PCBs and PCB items a 15-cm (6-in), containment berm surrounds the entire area in which PCBs or or containers stored, whichever is greater drains, valves, floor drains, expansion joints, sewer lines, or other opening the 		
 have not been drained of free-flowing dielectric fluid must be inspected weekly (FGS-Turkey 14-4.C). 11-19. Installations must inspect all other storage areas than the above at least monthly (GS-Turkey 14-4.D). 11-20. All required periodic inspections must be documented at the installation. (FGS-Turkey 14-4.D). 11-20. All required periodic inspections must be documented at the installation. (FGS-Turkey 14-4.D). 11-21. PCBs and PCB items at concentrations greater than 50 ppm that are to be stored before disposal must be stored in a facility that will ensure the containment of PCBs (FGS-Turkey 14-4.C). Verify that PCB storage areas meet the following requirements: (1)(3) the roof and walls of the building in which the PCBs are stored are constructed so as to prevent rainfall from contacting PCBs and PCB items are stored. berming provides effective containment for twice the internal volume of the largest PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB article or 25 percent of the total internal volume of all PCB a	ing and structurally undamaged large, high- voltage PCB capacitors	Determine whether any nonleaking and structurally undamaged large, high-voltage PCB capacitors and PCB-contaminated electric equipment that have not been drained of free-flowing dielectric fluid are stored on pallets next to a storage area that meets the requirements of FGS-Italy 14-4.A.
free-flowing fluid must be inspected weekly (FGS-Turkey 14- 4.C).Verify that such items are inspected weekly.11-19.Installations must inspect all other storage areas than the above at least monthly (FGS-Turkey 14-4.D).Verify that all storage areas other than the above are inspected monthly. (3)11-20.All required peri- odic inspections must be documented at the instal- lation (FGS-Turkey 14- 1.F).Verify that all required periodic inspections are documented at the instal- lation (FGS-Turkey 14- 1.F).PCB StorageVerify that PCB storage areas meet the following requirements: (1)(3)- the roof and walls of the building in which the PCBs are stored are constructer so as to prevent rainfall from contacting PCBs and PCB itsposal must be stored isposal must be stored of PCBs (FGS-Turkey 14- A. through 14-4.C).A through 14-4.C).Verify that PCB storage areas meet is perfective containment for twice the internal volume of all PCB article or containers stored, whichever is greater - drains, valves, floor drains, expansion joints, sewer lines, or other openings the		(NOTE: See checklist item 11-21.)
 must inspect all other storage areas than the above at least monthly (FGS-Turkey 14-4.D). 11-20. All required periodic inspections are documented at the installation. (1)(3) to for the storage 11-21. PCBs and PCB items at concentrations greater than 50 ppm that are to be stored before disposal must be stored in a facility that will ensure the containment of PCBs (FGS-Turkey 14-4.C). Verify that PCB storage areas meet the following requirements: (1)(3) the roof and walls of the building in which the PCBs are stored are constructed so as to prevent rainfall from contacting PCBs and PCB items a 15-cm (6-in.) containment berm surrounds the entire area in which PCBs or PCB items are stored. berming provides effective containment for twice the internal volume of th largest PCB article or 25 percent of the total internal volume of all PCB article or containers stored, whichever is greater drains, valves, floor drains, expansion joints, sewer lines, or other openings the stored in the st	free-flowing dielectric fluid must be inspected weekly (FGS-Turkey 14-	Verify that such items are inspected weekly.
 odic inspections must be documented at the installation (FGS-Turkey 14-1.F). PCB Storage 11-21. PCBs and PCB items at concentrations greater than 50 ppm that are to be stored before disposal must be stored in a facility that will ensure the containment of PCBs (FGS-Turkey 14-4.A through 14-4.C). Verify that PCB storage areas meet the following requirements: (1)(3) the roof and walls of the building in which the PCBs are stored are constructed so as to prevent rainfall from contacting PCBs and PCB items a 15-cm (6-in.) containment berm surrounds the entire area in which PCBs of PCBs (FGS-Turkey 14-4.A through 14-4.C). 	must inspect all other storage areas than the above at least monthly	Verify that all storage areas other than the above are inspected monthly. (3)
 11-21. PCBs and PCB tems at concentrations greater than 50 ppm that the roof and walls of the building in which the PCBs are stored are constructed so as to prevent rainfall from contacting PCBs and PCB items a 15-cm (6-in.) containment berm surrounds the entire area in which PCBs or PCBs (FGS-Turkey 14- A. A through 14-4.C). Verify that PCB storage areas meet the following requirements: (1)(3) the roof and walls of the building in which the PCBs are stored are constructed so as to prevent rainfall from contacting PCBs and PCB items a 15-cm (6-in.) containment berm surrounds the entire area in which PCBs or PCB items are stored. berming provides effective containment for twice the internal volume of the largest PCB article or 25 percent of the total internal volume of all PCB article or containers stored, whichever is greater drains, valves, floor drains, expansion joints, sewer lines, or other openings that 	odic inspections must be documented at the instal- ation (FGS-Turkey 14-	Verify that all required periodic inspections are documented at the installation. (1)(3)
 items at concentrations greater than 50 ppm that are to be stored before disposal must be stored in a facility that will ensure the containment of PCBs (FGS-Turkey 14-4.A through 14-4.C). the roof and walls of the building in which the PCBs are stored are constructed so as to prevent rainfall from contacting PCBs and PCB items a 15-cm (6-in.) containment berm surrounds the entire area in which PCBs of PCBs (FGS-Turkey 14-4.A through 14-4.C). berming provides effective containment for twice the internal volume of the largest PCB article or 25 percent of the total internal volume of all PCB article or containers stored, whichever is greater drains, valves, floor drains, expansion joints, sewer lines, or other openings that 	PCB Storage	
 the roof and walls of the building in which the PCBs are stored are constructed so as to prevent rainfall from contacting PCBs and PCB items a 15-cm (6-in.) containment berm surrounds the entire area in which PCBs of PCBs (FGS-Turkey 14-there is the containment of PCBs (FGS-Turkey 14-there is the containers stored). berming provides effective containment for twice the internal volume of the largest PCB article or 25 percent of the total internal volume of all PCB article or containers stored, whichever is greater drains, valves, floor drains, expansion joints, sewer lines, or other openings that 		Verify that PCB storage areas meet the following requirements: (1)(3)
 berming provides effective containment for twice the internal volume of the largest PCB article or 25 percent of the total internal volume of all PCB article or containers stored, whichever is greater drains, valves, floor drains, expansion joints, sewer lines, or other openings that 	greater than 50 ppm that are to be stored before disposal must be stored	- a 15-cm (6-in.) containment berm surrounds the entire area in which PCBs or
	ensure the containment of PCBs (FGS-Turkey 14-	- berming provides effective containment for twice the internal volume of the largest PCB article or 25 percent of the total internal volume of all PCB articles or containers stored, whichever is greater
- floors are constructed of continuous, smooth, and impervious material.		would allow liquids to flow from the bermed area are not present
Verify that, as far as possible, new storage areas are located to minimize the risk or release because of seismic activity, floods, or other natural events.		Verify that, as far as possible, new storage areas are located to minimize the risk of release because of seismic activity, floods, or other natural events.

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11-21. (continued)	 (NOTE: The following items may be stored for up to 30 days from the date or removal from service in areas that do not meet the above requirements: nonleaking PCB items, marked to indicate whether they are PCB articles or PCB equipment leaking PCB articles and PCB equipment placed in a nonleaking PCB containee that contains sufficient sorbent material to absorb liquid contained on the PCE article or equipment PCB containers in which nonliquid PCBs have been placed PCB containers in which liquid PCBs at a concentration between 50 and 499 ppm have been placed, when containers are marked to indicate less that 500 ppm PCB.)
	(NOTE: Nonleaking and structurally undamaged large, high-voltage PCB capacitor and PCB-contaminated electric equipment that have not been drained of free-flowing dielectric fluid may be stored on pallets next to a storage area that does meet the requirements above.)
11-22. Containers used for the storage of PCBs must be as secure as those conforming with the Defense Traffic Manage- ment Regulation (FGS- Turkey 14-4.E).	Verify that containers used for the storage of PCBs are at least as secure as those that conform to the Defense Traffic Management Regulation. (3)
PCB Records	
11-23. Installations with PCB Items must maintain	Verify that the installation maintains a written inventory of PCB Items. (1)(3)
a written inventory of those PCB Items (FGS- Turkey 14-1.D).	Verify that the inventory contains a current list, by type, of all PCB Items in use placed into storage for disposal, or disposed of for that year.
11-24. Installations must retain records of	Determine whether the installation has disposed of any transformers. (1)(3)
must retain records of inspections and mainte- nance histories for 3 yr after disposal of a trans- former (FGS-Turkey 14- 1.F).	Verify that records of inspections and maintenance histories are retained for at leas 3 yr after the disposal of a transformer.

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11-25. Certain installa- tions should prepare writ- ten annual document logs by 1 July of each calendar year (MP).	 Determine whether at any time the installation uses or stores any of the following: (1)(2)(3) more than 45 kg [99.4 lb] of PCBs in PCB Containers PCB Transformers with concentrations of 50 ppm or greater one or more large PCB capacitors of high or low-voltage. Verify that, by 1 January of each calendar year, the installation prepares a written annual log that covers the previous year. Verify that the written annual document log addresses the following: identification of facility calendar year covered manifest number for every manifest generated total number (by type) of PCB Articles, PCB Article Containers, and PCB Containers placed into storage for disposal or disposed of during the calendar year total weight placed into storage for disposal or disposed of during the calendar year of: PCBs in PCB Articles contents of PCB Article Container contents of PCB Article Containers bulk PCB waste a list of PCBs and PCB Items remaining in service at the end of the calendar year the total weight of any PCBs and PCB Items in containers including identification of container contents and the total number of PCB Transformers, PCB large capacitors of high- and low-voltage, and the total weight of PCBs in PCB Transformers a record of each telephone call or other form of verification to confirm the receipt of PCB waste transported by independent transport.

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11-25. (continued)	Verify that the annual document log contains the following for each manifest, for each unmanifested waste, and for any PCBs or PCB Items received from or shippe from another facility owned or operated by the generator:
	 date removed from service for disposal (first date material placed in PCB Container) date placed into transport for offsite storage/disposal date of disposal (if known) weight of PCB wastes total bulk PCB wastes total in each article (PCB Transformers or capacitors) total in each container (PCB Containers) total weight of contents and of the PCB Article (in kilograms) in eac PCB Article Container serial number or other unique identification number (except for bulk wastes) description of the contents of PCB Containers and article containers. Verify that the following information is provided in the annual record: all signed manifests generated or received at the facility during the calendaryear all certificates of disposal that have been generated or received during the calendaryear.
	Verify that the annual document log and annual records (manifests, certificates of disposal) are kept for at least 5 yr after the facility stops using or storing PCBs an PCB Items in the listed quantities.
PCB Spills	
11-26. Installations must address PCBs in their spill plan (FGS-Tur-	Determine whether the installation has any PCB items. (1)(2)(3) Verify that PCB items are addressed in the spill plan.
key 14-1.A and 14- 4.A.5).	(NOTE: This requirement also applies to PCB items in temporary storage.)
	Determine whether PCB storage facilities for PCBs and PCB items at concentration of 500 ppm or greater are located where they are at risk from seismic activity, flood or other natural events.
	Verify that the installation's spill plan addresses such storage facilities directly.
	(NOTE: See Section 8, <i>Petroleum, Oil, and Lubricant (POL) Management</i> , for further details on the contents of the spill plan).

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11-27. Spills of PCB liquids at concentrations of	Verify that the installation responds immediately to spills of PCB liquids at concentrations of 50 ppm or greater. (1)(2)(3)	
50 ppm or greater must be responded to immedi- ately and cleaned up	Verify that surfaces located in substantial contact areas are cleaned to 10 μ g per 100 cm ² [\approx 15 in. ²].	
according to specific stan- dards (FGS-Turkey 14- 1.B).	Verify that surfaces in all other contact areas are cleaned to 100 μ g per 100 cm ² [\approx 15 in. ²].	
	Verify that contaminated soil located in restricted access areas is removed until the soil tests no higher than 25 ppm PCB.	
	Verify that the area is then backfilled with clean soil containing less than 1 ppm PCB.	
	Verify that contaminated soil located in unrestricted access areas is removed to a minimum depth of 25 cm (10 in.) or until the soil tests no higher than 10 ppm PCB, whichever is deeper.	
	Verify that the area is then backfilled with clean soil containing less than 1 ppm PCB.	
11-28. Installations should clean up spills in	Determine whether any of the following types of spills have occurred: $(1)(2)(3)$	
accordance with good practice (MP).	 high-concentration spills low-concentration spills involving 0.45 kg [1 lb] or more of PCBs by weight spills of 1023 L [270 gal] or more of untested mineral oil. 	
	Verify that the following actions are taken within 24 h of discovering the spill:	
	 the area of the spill is cordoned off or otherwise identified to include the area with visible traces of the spill and a 2-ft [≈61 cm] buffer zone clearly visible signs are placed advising people to avoid the area the area of visible contamination is recorded and documented, identifying the extent and center of the spill cleanup of visible traces of the fluid from hard surfaces is initiated removal of all visible traces of the spill on soil and other media, such as gravel, sand, etc., is started. 	
	(NOTE: If there are no visible traces, the area of the spill may be estimated.)	
	Verify that, if the spill occurs in an outdoor substation:	
	 contaminated solid surfaces are cleaned to a PCB concentration of 100 μg/cm² [≈0.16 in.²] (as measured by standard wipe tests) soil contaminated by the spill is cleaned to either 25 ppm PCB by weight or 50 ppm PCB postcleanup samples are collected. 	

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11-28. (continued)	(NOTE: The installation may choose the level to which cleanup is conducted notice is placed in the area to indicate the level of cleanup.)
	Verify that, if the spill occurs in a restricted access area other than an outdoor subst tion:
	 high-contact solid surfaces are cleaned to 10 μg per 100 cm² [≈15 in.²] (as me sured by standard wipe tests) low-contact, indoor, impervious solid surfaces are decontaminated to 10 μg p 100 cm² [≈15 in.²] low-contact, indoor, nonimpervious surfaces are cleaned to either 10 or 100 μ per 100 cm² [≈15 in.²] and encapsulated at the option of the installation low-contact, outdoor surfaces (both impervious and nonimpervious) a cleaned to 100 μg per 100 cm² [≈15 in.²] soil contaminated by the spill is cleaned to 25 ppm PCB by weight postcleanup samples are collected.
	Verify that spills in nonrestricted access locations are decontaminated as follows:
	 furnishings, toys, and other easily replaceable household items are disposed and replaced indoor solid surfaces and high-contact, outdoor solid surfaces are cleaned 10 μg per 100 cm² [≈15 in.²] (as measured by standard wipe tests) indoor vault areas and low-contact, outdoor, impervious solid surfaces are decontaminated to 10 μg per 100 cm² [≈15 in.²] at the option of the installation, low-contact, outdoor, nonimpervious solid surfaces are cleaned to either 10 or 100 μg per 100 cm² [≈15 in.²] and encaps lated soil is decontaminated to 10 ppm PCB by weight provided that the soil is exc vated to a minimum depth of 25 cm or 10 in. [≈25 cm] and replaced with clear soil postcleanup samples are collected.
	Verify that records documenting all cleanup and decontamination are maintained f 5 yr.
	(NOTE: Neither the occurrence/discovery of the spill on the weekend nor overtin costs are considered acceptable reasons for delaying response.)
	(NOTE: The final numerical cleanup standards do not apply to spills directly in surface waters, drinking water, sewers, grazing lands, and vegetable gardens.)

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PCB Disposal	
11-29. Installations that generate PCB waste of 50 ppm or greater PCB must maintain an audit trail for the waste (FGS-Turkey 14-5.A).	Verify that the installation maintains an audit trail at least as stringent as the audit trail required for hazardous waste. $(1)(3)(5)(6)$
11-30. Installations must dispose of PCB Items through the DRMO only (FGS-Turkey 14-1.E).	Verify that all PCB items are disposed of through the DRMO. (1)(3)(4)(5)(6)
11-31. Installations must return DOD-generated PCBs manufactured in the United States to the Continental United States (CONUS) for delivery to a permitted disposal facility under certain conditions (FGS-Turkey 14-5.N).	Determine whether Turkey or third-country disposal of DOD-generated PCBs manu- factured in the United States is not possible, is prohibited, or will not be managed in an environmentally sound manner. (3)(5)(6) Verify that the installation returns DOD-generated PCBs manufactured in the United States to the CONUS for delivery to a permitted disposal facility in the above cir- cumstances.
11-32. Installations must dispose of PCB-contaminated liquids in accordance with specific requirements (FGS-Turkey 14-5.B and 14-5.C).	 Verify that PCB-contaminated dielectric fluids with concentrations of greater than 500 ppm are disposed of in an incinerator with 99.9 percent combustion efficiency. (4) Verify that PCB-contaminated dielectric fluids with concentrations of 50 ppm but less than 500 ppm are only disposed of in: an incinerator with at least 99.9 percent combustion efficiency a high efficiency boiler that is rated at a minimum of 50 MBtu/hr and which is fueled by natural gas, oil, or coal.

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11-33. PCB-contaminated electrical equipment must have the free-flowing liquid drained off prior to disposal (FGS-Turkey 14-5.H).	Verify that the free-flowing liquid is drained from electrical equipment prior to di posal as a municipal solid waste. (3)(4) (NOTE: This requirement does not apply to capacitors.)
11-34. Rags, soils, and other debris contaminated with PCBs at concentrations greater than 50 ppm must be disposed of in accordance with specific standards (FGS-Turkey 14-5.D).	Verify that rags, soils, and other debris contaminated with PCBs at concentration greater than 50 ppm are disposed of in either: (3)(4) - an incinerator with at least a 99.9 percent combustion efficiency - a chemical waste landfill.
11-35. PCB transformers must be disposed of in certain ways (FGS-Tur- key 14-5.E).	Verify that the installation is disposing of PCB transformers in an incinerator with least a 99.9 percent combustion efficiency or in a chemical waste landfill. (3)(4) Verify that transformers disposed of in landfills and all their inner workings a drained of all free-flowing liquids prior to disposal.
11-36. PCB capacitors must be disposed of in accordance with certain requirements (FGS-Turkey 14-5.F).	Verify that the installation is disposing of PCB capacitors in an incinerator with least a 99.9 percent combustion efficiency. (3)(4) (NOTE: Small PCB capacitors may be disposed of in a solid waste landfill, unle large quantities (more than 100 lb [\approx 45 kg]) are identified at the same time.)
11-37. PCB hydraulic machines may be disposed of as municipal solid waste (MSW) under certain conditions (FGS-Turkey 14-5.G).	 Verify that no PCB hydraulic machines are disposed of as MSW unless the following conditions are met: (3)(4) machines containing PCBs at concentrations of 50 ppm or greater are drained of all free-flowing liquid machines containing PCB liquid of 1000 ppm or greater are flushed prior to disposal with a solvent that contains less than 50 ppm PCB.
11-38. PCB articles must be disposed of properly (FGS-Turkey 14-5.I).	 Verify that PCB articles with concentrations at 500 ppm or greater are disposed of either: (3)(4) - an incinerator with 99.9 percent combustion efficiency - a chemical waste landfill, if all free-flowing liquids have first been drained of the second secon

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11-38. (continued)	Verify that PCB articles with PCB concentration between 50 and 500 ppm are drained of all free-flowing liquid.
11-39. PCB containers must be disposed of properly (FGS-Turkey 14-5.J and 14-5.M).	Verify that PCB containers with concentrations of 500 ppm or greater are disposed of in one of the following ways: (3)(4)
	 in an incinerator with 99.9 percent combustion efficiency in a chemical waste landfill, if the container is first drained of all free-flowing liquids.
	Verify that PCB containers used to contain only PCBs at concentrations less than 500 ppm are disposed of as municipal solid waste only after draining off all free-flowing liquid.
11-40. When PCB fluids,	Verify that the boiler is rated at a minimum of 50 MBtu/h. (3)(4)
items, or articles are dis- posed of in a high temper- ature boiler, specific procedures must be fol- lowed (FGS-Turkey 14- 5.K).	Verify that, if the boiler used natural gas or oil as the primary fuel, the CO concentration in the stack is 50 ppm or less and the excess O_2 is at least 3 percent when PCBs are being burned.
	Verify that, if the boiler uses coal as the primary fuel, the CO concentration in the stack is 100 ppm or less and the excess O_2 is at least 3 percent when PCBs are being burned.
	Verify that the mineral oil dielectric fluid:
	 does not comprise more than 10 percent by volume of the total fuel feed rate is not fed into the boiler unless the boiler is operating at its normal operating temperature is not fed into the boiler during startup or shutdown.
	Verify that the performance of the boiler is continuously monitored for CO and excess O_2 percentage in the stack gas while burning mineral oil dielectric fluid.
	(NOTE: If the boiler is burning less than 112,500 L (30,000 gal) of mineral oil dielectric fluid per year, monitoring is required at least every 60 min.)
	Verify that the primary fuel feed rates, mineral oil dielectric fluid feed rates, and the total quantities of both primary fuel and mineral oil dielectric fluid fed to the boiler are measured and recorded at least every 15 min.
	Verify that the flow of mineral oil is stopped if the CO or excess O_2 limits are exceeded.

REVIEWER CHECKS: August 1997 that the combustion criteria maintain the introduced liquids for a 2 s dwell $1200 ^{\circ}$ C, $\pm 100 ^{\circ}$ C ($2200 ^{\circ}$ F, $\pm 212 ^{\circ}$ F), and 3 percent excess O ₂ in the stack maintenance of the introduced liquids for a 1.5 s dwell time at 1600 $^{\circ}$ C, $\pm 100 ^{\circ}$ 50 $^{\circ}$ F, $\pm 212 ^{\circ}$ F) and 2 percent excess O ₂ in the stack gas. (3)(4) that combustion efficiency is maintained at no less than 99.9 percent. E: Combustion efficiency is measured by the ratio of the concentration of CO otal concentration of both CO ₂ and CO.) that the rate and quantity of PCBs that are fed to the combustion system ar red and recorded at regular intervals of not more than 15 min. that the temperature of the incinerator stops automatically if temperature crite is not met. that sufficient monitoring is conducted to establish that an incinerator to b or disposal for the first time is operating within the above parameters.
1200 ° C, \pm 100 °C (2200 °F, \pm 212 °F), and 3 percent excess O ₂ in the stack maintenance of the introduced liquids for a 1.5 s dwell time at 1600 °C, \pm 10 50 °F, \pm 212 °F) and 2 percent excess O ₂ in the stack gas. (3)(4) that combustion efficiency is maintained at no less than 99.9 percent. E: Combustion efficiency is measured by the ratio of the concentration of CO otal concentration of both CO ₂ and CO.) that the rate and quantity of PCBs that are fed to the combustion system ar red and recorded at regular intervals of not more than 15 min. that the temperature of the incineration process is continuously measured an ed. that the flow of PCBs to the incinerator stops automatically if temperature crite not met.
E: Combustion efficiency is measured by the ratio of the concentration of Co otal concentration of both CO_2 and CO_2) that the rate and quantity of PCBs that are fed to the combustion system ar red and recorded at regular intervals of not more than 15 min. that the temperature of the incineration process is continuously measured an ed. that the flow of PCBs to the incinerator stops automatically if temperature cri- e not met. that sufficient monitoring is conducted to establish that an incinerator to b or disposal for the first time is operating within the above parameters.
otal concentration of both CO ₂ and CO.) that the rate and quantity of PCBs that are fed to the combustion system ar red and recorded at regular intervals of not more than 15 min. that the temperature of the incineration process is continuously measured an ed. that the flow of PCBs to the incinerator stops automatically if temperature cri- e not met. that sufficient monitoring is conducted to establish that an incinerator to b or disposal for the first time is operating within the above parameters.
red and recorded at regular intervals of not more than 15 min. that the temperature of the incineration process is continuously measured an ed. that the flow of PCBs to the incinerator stops automatically if temperature cr e not met. that sufficient monitoring is conducted to establish that an incinerator to b or disposal for the first time is operating within the above parameters.
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e not met. that sufficient monitoring is conducted to establish that an incinerator to b or disposal for the first time is operating within the above parameters.
or disposal for the first time is operating within the above parameters.
that O ₂ and CO are monitored continuously during incineration of PCBs.
that CO_2 is monitored periodically during incineration of PCBs.
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COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
ASBESTOS MANAGEMENT	
All Installations	
11-42. Copies of all relevant DOD directives/ instructions, USAF direc- tives, and guidance docu- ments should be maintained at the installa- tion (MP).	 Verify that the Base Staff Judge Advocate has available the host-nation FGS and relevant USAF documents. (1)(11) (NOTE: Among the relevant documents are the following: AFI 32-1052, Facility Asbestos Management, 22 March 1994 AFOSH Standard 161-4, Exposure to Asbestos, January 1980.)
11-43. Installations must meet regulatory requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether new regulations concerning asbestos management have been issued since the finalization of the manual. (1)(2)(11) Verify that the installation is in compliance with newly issued regulations.
General	
11-44. Installations must appoint an asbestos program manager (FGS-Turkey 15-1).	Verify that the installation has an asbestos program manager who serves as the single point of contact for all asbestos-related activities. (1)(9)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
11-45. Installations must prepare and imple- ment an asbestos manage- ment plan that meets specific minimum requirements (FGS-Tur- key 15-2 and AFI 32- 1052, paras 2.4 and 5).	 Verify that the installation has prepared and implemented an asbestos management plan. (1)(9)(10) Verify that, at a minimum, the plan addresses the following: a notification and education program to tell workers, tenants, and buildin occupants where potentially friable ACM is located and how and why to avoid disturbing it regular ACM surveillance to note, assess, and document any changes in th ACM's condition work control/permit systems to control activities which might disturb ACM operations and maintenance (O&M) work practices to avoid or minimize fiber release during activities affecting ACM recordkeeping to document O&M activities related to asbestos identification management, and abatement medical and respiratory protection programs, as applicable training for the asbestos program manager and custodial and maintenance staffic procedures to assess and prioritize identified hazards for abatement. (NOTE: According to AFI 32-1052, para 5, the objective of the asbestos management plan is to maintain a permanent record of the current status and condition of a ACM in an installation cannot know the current status of all ACM in its facility inventory.) (NOTE: Since an installation cannot know the current status of all ACM in its facility inventory.)
11-46. Installations must have a written asbestos operating plan that meets specific minimum requirements (AFI 32-1052, paras 2.4 and 6).	 Verify that the installation has prepared and implemented an asbestos operating pla (1)(9)(10) Verify that the operating plan: assigns responsibilities establishes inspection and repair capabilities provides repair procedures and personnel protection instructions explains applicable USEPA and Occupational Safety and Health Administr tion (OSHA) rules, Air Force Policy Directive (AFPD) 32-70, and AFI 91-30

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
11-46. (continued)	Verify that the operating plan addresses:
	 the organizational structure for carrying out asbestos-related work personnel training programs equipment and supply requirements identification of worker manuals or other written procedures yearly budget estimates procedures for interim control measures and extraordinary precautions procedures for asbestos certification and asbestos disposition statements on programming documents requirements for a special response team and in-house inspection capability contractor requirements to perform analytical work and asbestos abatement.
11-47. Installations must repair or remove damaged ACM and monitor friable ACM (AFI 32-1052, para 2.1 and 2.3).	Verify that damaged ACM is removed or repaired. (1)(9)(10) Verify that friable asbestos is routinely inspected by reviewing inspection logs. (NOTE: Damaged ACM is presumed to be hazardous because of its potential to release airborne asbestos fibers.)
11-48. Friable materials that may be contaminated with asbestos should be tested (MP).	Verify that friable materials suspected of being contaminated are tested when located in areas where workers might be exposed. (1)(9)(10)
11-49. Installations must include complete removal of ACM in planning operations and maintenance and military construction program facility projects (AFI 32-1052, para 2.2.3).	Verify that the installation includes complete removal of ACM in planning opera- tions and maintenance and military construction program facility projects, when safety and budgetary considerations permit. (1)(9)(10)
11-50. Installations must remove existing ACM at opportune times during minor construction or repairs (AFI 32-1052, para 2.2.4).	Verify that the installation removes existing ACM at opportune times during minor construction or repairs. (1)(9)(10) (NOTE: This can be verified by reviewing written documentation in the installation's Asbestos Management Plan.)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
Personnel Safety	
11-51. The installation must not expose employ- ees, visitors, or contrac- tors to airborne asbestos concentrations above the PEL without appropriate personal protective equip- ment (PPE) (FGS-Turkey 15-3).	Verify that individuals are not exposed to airborne asbestos concentrations above the PEL unless they wear personal protective equipment (PPE). (1)(9)(10)
11-52. Installations	Verify that all workers are trained prior to the removal. $(1)(7)(9)(10)$
must meet specific criteria before and during the removal of asbestos (ECS Turkey 15.5 P)	Verify that monitoring programs are in place during asbestos removal to documen exposure levels.
(FGS-Turkey 15-5.B).	Verify that all workers involved in the removal use properly fitted respiratory protection and PPE.
	Verify that appropriate engineering controls and work practices are used to contain and control asbestos fiber releases for all asbestos removal that has the potential to release airborne asbestos fibers in concentrations greater than the PEL.
11-53. Installations	Verify that workers are provided with appropriate training. (1)(9)(10)
should provide personnel working with asbestos with proper education and training (MP).	Verify that a procedure exists to notify individuals occupationally exposed to asbes tos.
Renovation and Demolition	
11-54. Prior to renovation or demolition, the installation must determine whether ACM will be removed or disturbed and record the determination in the project authorization document (work order) (FGS-Turkey 15-4.A).	Verify that, prior to renovation or demolition, the installation determines whethe ACM will be removed or disturbed and records the determination in the project authorization document (e.g., work order). (1)(7)(9)(10)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
11-55. A written assessment must be prepared and furnished to the Installation Commander prior to certain actions (FGS-Turkey 15-4.B).	Verify that a written assessment is produced prior to the demolition or renovation of a facility that involves removing or disturbing ACM. (9)(10) Verify that a copy of the written assessment is kept on file permanently.
11-56. Installations must remove certain types of ACM prior to any renovation or demolition (FGS-Turkey 15-4.C).	 Verify that, before renovating or demolishing any facility or any part of a facility in which ACM is found, the installation removes: (9)(10) all friable ACM ACM with a high degree of probability of becoming friable once disturbed.
11-57. Installations must remove ACM when it poses a threat to release airborne asbestos fibers and cannot be reliably repaired or isolated (FGS-Turkey 15-5.A).	Verify that ACM that poses a threat has been removed. (9)(10)
Asbestos Disposal	
11-58. Installations must dispose of asbestos- containing waste materi- als in accordance with specific standards (FGS- Turkey 15-6).	Verify that all ACM waste is adequately wetted, sealed in a leak-proof container, and properly disposed of in accordance with the requirements of Section 9, <i>Solid Waste Management</i> . (1)(9)(10) Verify that containers are labeled in English and Turkish:
	DANGER CONTAINS ASBESTOS FIBERS AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD.
	Verify that permanent records are maintained that document the disposal action and site.

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COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
11-59. Active waste disposal sites where ACM is being disposed of should meet specific standards (MP).	Determine whether the installation operates a landfill where asbestos is being di posed of. (1)(2)
	Verify that there are no visible emissions from active asbestos-containing waste di posal sites, or that:
	 at the end of each operating day, or once in a 24-h period, the waste material covered with either at least 15 cm (6 in.) of compacted non-ACM a resinous or petroleum based dust suppression agent is applied (waste cran case oil is not suitable for this purpose) an approved alternative method of control is used.
	Verify that the waste is either properly covered daily by non-ACM or that prop warning signs and fences are installed and maintained as follows:
	 warning signs are displayed at all entrances at intervals of 100 m (330 ft) or le along the property line of the site or the perimeter of the section of the si where ACMs are disposed of and the signs state that the site contains asbeste and warn against creating dust the area is adequately fenced.
	(NOTE: The requirement above does not apply if a natural barrier exists that dete access by the general public.)
	Verify that a record is kept of the location, depth, and area of asbestos-containing waste on a map or diagram of the disposal area.
11-60. Inactive waste disposal sites should	Verify that inactive waste disposal sites meet one of the following criteria: (1)(2)
meet specific standards (MP).	 no visible emissions are discharged asbestos-containing waste material (ACWM) is covered with at least 15 c (6 in.) of compacted non-ACM, and a vegetation cover is grown and main tained (in desert areas where vegetation is difficult to maintain, at least 8 cm in.) of additional well-graded, nonasbestos-containing crushed rock may b used instead) the ACWM is covered with at least 60 cm (2 ft) of non-ACM, and the cover maintained to prevent exposure.
	Verify that warning signs and a fence are installed to deter public access.
	(NOTE: This requirement does not apply if a natural barrier to public access exists
	Verify that easily legible warning signs are displayed at all entrances and at interva of 100 m (330 ft) or less that indicate that the area is an asbestos waste disposal site

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
11-60. (continued)	Verify that a procedure is in place to notify the administrator in writing at least 45 days prior to excavating or disturbing any ACWM at an inactive waste disposal site.
Asbestos in Schools	
11-61. DOD Schools must meet specific	Verify that both friable and nonfriable ACM have been identified in elementary and secondary schools. (8)(9)
requirements with regard to ACM (FGS-Turkey 15- 7).	Verify that all suspect materials that are not confirmed to be ACM have been sam- pled.
	Verify that samples are analyzed using appropriate techniques.
	Verify that an accredited DOD inspector has provided a written analysis of all friable, known, or assumed ACM in school buildings.
	Verify that appropriate response actions are selected and implemented in a timely manner to protect human health and the environment.
	Verify that all maintenance and custodial persons who may work in buildings that contain ACM receive awareness training regarding asbestos, its uses and forms, location in school buildings, and recognition of ACM.
	Verify that each school has an asbestos management plan that includes all leased or owned facilities.

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
RADON MANAGEMENT		
All Installations		
11-62. Copies of all relevant DOD directives/ instructions, USAF direc- tives, and guidance docu- ments should be maintained at the installa- tion (MP).	Verify that the Base Staff Judge Advocate has available the host-nation FGS. (1)(11)	
11-63. Installations must meet regulatory	Determine whether new regulations concerning radon management have been issued since the finalization of the manual. $(1)(2)(11)$	
requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Verify that the installation is in compliance with newly issued regulations.	
11-64. Installations must prioritize their facilities for radon assessment and mitigation properly (FGS-Turkey 16-1).	Verify that the installation has prioritized its facilities in accordance with the follow- ing list: (1)(2)	
	 Priority 1: military family housing, day care centers, hospitals, schools, unaccompanied officers/enlisted quarters, confinement facilities, visiting officer/enlisted quarters, and dormitories/barracks Priority 2: administrative areas having 24-h operations Priority 3: all other structures routinely occupied over 4 h/day. 	
11-65. Initial screening samples must be collected from facilities in accordance with a specific schedule (FGS-Turkey 16-2).	Verify that the installation has collected initial screening samples from selected pri- ority 1 facilities before 1 October 1994. (1)(2)	
	(NOTE: Priority 2 and 3 facilities are not involved in the initial screening program.)	
	Verify that the samples are collected according to a protocol that yields a statistically representative sample.	
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COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP		
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Determine whether the installation has only Priority 2 and 3 buildings. (1)(2) Verify that radon screening is being carried out so that a sample is ready by 1 January 1996.		
Verify that, if any initial screening sample shows a radon level greater than 4 pCi/L [148 Bq/m ³], 12-mo radon samples are collected from all Priority 1, 2, and 3 facilities. (1)(2)		
Verify that the installation has a QA/QC program to ensure the validity of radon test results. (1)(2)		
Verify that the installation mitigates facilities that have radon levels above 4 pCi/L [148 Bq/m ³]. (1)(2) Verify that the radon mitigation of such facilities proceeds according to the schedule in Table 11-2.		
Verify that the installation has a post-mitigation monitoring program to confirm and document the effectiveness of mitigation. (1)(2)		

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
11-71. Installations should maintain or have access to a database that will permanently capture all the information derived from the assessment and mitigation of radon (MP).	Verify that the installation maintains or has access to such a database. (1)(2) Verify that all pertinent radon information is contained in such a database.	
11-72. Installations must develop an information package on the potential health effects of radon and provide the information along with the test results to facility occupants (FGS-Turkey 16-7).	Verify that the installation has developed an information packet on radon. (1)(2) Verify that the packet and the radon monitoring results are given to facility occupar upon assignment.	

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
LEAD-BASED PAINT (LBP)		
All Installations		
11-73. Copies of all relevant DOD and AF directive, and guidance	Verify that the Base Staff Judge Advocate has available the host-nation FGS and rel- evant USAF documents. (1)(11)	
documents should be maintained at the installa- tion (MP).	(NOTE: Among the relevant documents is HQ USAF/CC Policy Letter, Air Force Policy and Guidance on Lead Based Paint in Facilities, 24 May 1993.)	
11-74. Installations must meet regulatory requirements issued since	Determine whether any new regulations concerning LBP have been issued since the finalization of the manual. (1)(2)	
the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Verify that the installation is in compliance with newly issued regulations.	
11-75. Installations	Verify that the installation has a management plan that includes a strategy for: (1)	
must develop and imple- ment a plan for identify- ing, evaluating, managing, and abating LBP hazards (HQ USAF/ CC Policy Letter 24 May 1993, para 6).	- identifying, evaluating, controlling, and eliminating existing LBP hazards and preventing new hazards from developing	
	- protecting facility occupants, especially children, and workers from LBP haz- ards	
	 ensuring compliance with all applicable environmental protection requirements and all laws and regulations pertaining to LBP activities. 	

 is an integral part of the installation's overall plan for inspecting, constructin, upgrading, repairing, maintaining, and demolishing the facility inventory is based on local conditions and an evaluation of the health risk from LB onbase that considers available information on the conditions of the facilitie the results of facility inspections and evaluations, and incidents of lead toxicil resulting from LBP gives priority to finding and reducing or eliminating the risk of existing hazards ous conditions in high-priority facilities emphasizes in-place management to control existing hazards and reduce the risk of hazardous exposure to acceptable levels considers abatement of LBP as part of the normal facility renovation ar upgrade programs when it is cost-effective ensures precautions, and upgrade activities that are performed in-house, by contract, or self-help and that disturb painted surfaces known or likely to contal lead. 11-76. Installations must identify existing and potential LBP hazards: (1) evaluations of observations from routine facility inspections, inspections, inspections of observations from routine facility inspections, inspections for family day care home licensing, and occupant reports of deteriorated paint inspections of observations specifically designed to locate existing and potential LBP hazards so that appropriate measures can be taken to avoid hazardor lead exposure. Verify that facility personnel who conduct routine inspections have been instructed to report signs of paint deterioration or children chewing on painted surfaces in higl priority facilities. 	REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
 upgrading, repairing, maintaining, and demolishing the facility inventory is based on local conditions and an evaluation of the health risk from LB onbase that considers available information on the conditions of the facilitie the results of facility inspections and evaluations, and incidents of lead toxicir resulting from LBP gives priority to finding and reducing or eliminating the risk of existing hazards ous conditions in high-priority facilities emphasizes in-place management to control existing hazards and reduce the risk of hazardous exposure to acceptable levels considers abatement of LBP as part of the normal facility renovation ar upgrade programs when it is cost-effective ensures precautions and procedures are incorporated into all maintenance repair, renovation, and upgrade activities that are performed in-house, by contract, or self-help and that disturb painted surfaces known or likely to contal lead. 11-76. Installations must identify existing and potential LBP hazards in accordance with specific procedures (USAF/CC Policy Letter 24 May 1993, para 7). Verify that, depending on local circumstances, one of the following is used to identify a value throughs by Public Health (PH), fire and safety inspections and activities suct as walk-throughs by Public Health (PH), fire and safety inspections of for family day care home licensing, and occupant reports of deteriorated pairi inspections and evaluations specifically designed to locate existing and potential LBP hazards so that appropriate measures can be taken to avoid hazardou lead exposures facility investigations to determine the source of documented lead exposure. Verify that facility personnel who conduct routine inspections have been instruct to report signs of paint deterioration or children chewing on painted surfaces in higl priority facilities. Verify that procedures are in place to document and respond to information repo	11-75. (continued)	Verify that the plan:
to report signs of paint deterioration or children chewing on painted surfaces in high priority facilities. Verify that procedures are in place to document and respond to information reporter from inspections and occupants concerning potential LBP problems and the resulting	11-76. Installations must identify existing and potential LBP haz- ards in accordance with specific procedures (USAF/CC Policy Letter	 is an integral part of the installation's overall plan for inspecting, constructing upgrading, repairing, maintaining, and demolishing the facility inventory is based on local conditions and an evaluation of the health risk from LB onbase that considers available information on the conditions of the facilitie the results of facility inspections and evaluations, and incidents of lead toxicit resulting from LBP gives priority to finding and reducing or eliminating the risk of existing hazard ous conditions in high-priority facilities emphasizes in-place management to control existing hazards and reduce the risk of hazardous exposure to acceptable levels considers abatement of LBP as part of the normal facility renovation an upgrade programs when it is cost-effective ensures precautions and procedures are incorporated into all maintenanc repair, renovation, and upgrade activities that are performed in-house, by contract, or self-help and that disturb painted surfaces known or likely to contailead. Verify that, depending on local circumstances, one of the following is used to identify and evaluate existing and potential LBP hazards: (1) evaluations of observations from routine facility inspections and activities such as walk-throughs by Public Health (PH), fire and safety inspections, inspection for family day care home licensing, and occupant reports of deteriorated paint inspections and evaluations specifically designed to locate existing and potential LBP hazards so that appropriate measures can be taken to avoid hazardou lead exposures facility investigations to determine the source of documented lead exposure.
		to report signs of paint deterioration or children chewing on painted surfaces in high priority facilities. Verify that procedures are in place to document and respond to information reporte from inspections and occupants concerning potential LBP problems and the resultin

	COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
11-76. (continued)	Verify that facility inspections that are done specifically to identify LBP problems meet the following requirements:		
	 they are focused on high-priority facilities and areas within those facilities with painted surfaces in deteriorated condition the evaluations are performed by a team consisting of PH and BES representatives or by a qualified contractor reports of the data results and resulting actions are collected, consolidated, and analyzed by the Chief, Aerospace Medicine for reporting through AF medical channels permanent records of facility evaluations are maintained by the BCE and/or BES. 		
11-77. Installations must determine whether LBP is present prior to the start of facility maintenance, repair, modification, and renovation activities (HQ USAF/CC Policy Letter 24 May 1993, para 11).	Verify that the installation determines whether LBP is present prior to the start of maintenance, modification, or renovation activities. (1)(2) (NOTE: This requirement applies to high priority facilities and other facilities likely to contain lead.)		
11-78. Installations must restrict the use of LBP (USAF/CC Policy	Verify that the installation does not use paint with more than 0.06 percent lead by weight of the nonvolatile solids. (1)		
Letter 24 May 1993, para 12).	(NOTE: This restriction applies to all facilities, both industrial and nonindustrial.)		
11-79. AF personnel who perform tests for LBP and work on painted surfaces must be trained (USAF/CC Policy Letter 24 May 1993, para 13).	Verify that at least one person from BCE has received USEPA certification. (1) Verify that all training is conducted by persons who have been trained at a USEPA- approved Regional Lead Training Center or an equivalent in-house training program presented by a certified trainer.		
	(NOTE: The person from BCE who received USEPA certification may train other installation personnel on potential hazards and proper precautions.)		

(1) BCE (Environmental Planning) (2) BES (Bioenvironmental Engineering Services) (3) BCE (Exterior Electric Shop) (4) DRMO (Defense Reutilization and Marketing Office) (5) BCE (Contract Programmer) (6) BCE (Contract Management) (7) BCE (Chief of Operations and Maintenance) (8) School Principal (9) Asbestos Program Officer (10) Asbestos Operating Officer (11) Base Staff Judge Advocate (12) Base Safety Officer (13) PAO (Public Affairs Officer)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997 Verify that a minimum level of training that includes the following is provided for all workers who perform tasks that disturb painted surfaces:		
11-79. (continued)			
	 potential hazards of LBP (hazard communication) work practices to reduce and control dust and debris handling of debris hygiene 		
	- cleanup procedures.		
11-80. Certain person- nel must receive training beyond the minimum level (USAF/CC Policy	Verify that the following personnel receive additional training in the requirements of the <i>Occupational Safety and Health Act</i> and those of the Department of Housing an Urban Development: (1)		
Letter 24 May 1993, para 13).	 personnel who perform larger jobs in which simple work practices will not rel ably reduce or control dust personnel who assist in LBP evaluations. 		
11-81. All training related to LBP must be documented (USAF/CC Policy Letter 24 May 1993, para 13).	Verify that all training is documented in official personnel folders. (1)		
11-82. Installations must perform a Lead Toxicity Investigation (LTI)	Determine whether the installation has ever had a case of elevated levels of lead is the blood. (2)		
when children with ele- vated blood lead levels	Verify that the LTI team consists of representatives from BCE, BES, PH, PAO, an SJA as needed.		
have been identified at the installation (USAF/CC Policy Letter, 24 May 1993, para 14).	Verify that the installation conducted an LTI.		
1) BCE (Environmental Planning)	(2) BES (Bioenvironmental Engineering Services) (3) BCE (Exterior Electric Shop) (4) DRMO (Do		

(1) BCE (Environmental Planning) (2) BES (Bioenvironmental Engineering Services) (3) BCE (Exterior Electric Shop) (4) DRMO (Defense Reutilization and Marketing Office) (5) BCE (Contract Programmer) (6) BCE (Contract Management) (7) BCE (Chief of Operations and Maintenance) (8) School Principal (9) Asbestos Program Officer (10) Asbestos Operating Officer (11) Base Staff Judge Advocate (12) Base Safety Officer (13) PAO (Public Affairs Officer)

Table 11-1

Summary of Likelihood of Lead-Based Paint Being Present and Regulation/Guidelines Which Normally Must Be Followed

(USAF/CC Policy Letter 24 May 1993)

High-Priority Facilities

Facility Type	LBP Likely	HUD	OSHA	RCRA	AIR
MFH/Day Care Home, Before 1980	Yes	Yes	Yes	Yes	No
MFH/Day Care Home, During/After 1980	No	Yes	No	No	No
Other High Priority Facilities Before 1980	Yes	Yes	Yes	Yes	No
Other High Priority Facilities During/After 1980, Ferrous Metal Surface	Yes*	Yes	Yes	Yes	No
Other High Priority Facilities, During/After 1980, Other Surfaces	No**	Yes	No	No	No

Other Facilities (Not High-Priority)

Facility Type	LBP Likely	HUD	OSHA	RCRA	AIR	
Steel Structures	Yes	No	Yes	Yes	Yes	
Industrials	Yes	No	Yes	Yes	No	
Painted Yellow Pavement Markings	Yes	No	Yes	Yes	No	
Nonindustrials, Ferrous Metal Surfaces	Yes*	No	Yes	Yes	No	
Nonindustrials, During/After 1980, Other Surfaces	No**	No	No	No	No	

- * Consumer Product Safety Act (CPSA) restrictions uncertain, but common practices favor lead present.
- ** CPSA restriction uncertain, but common practices favor lead absent.

HUD - Housing and Urban Development Interim Guidelines

OSHA - Occupational Safety and Health Administration

RCRA - Resource Conservation and Recovery Act

Appendix 11-1 (continued)

AIR - National Primary and Secondary Ambient Air Quality Standards

CPSA - Consumer Product Safety Act

(NOTE: Likelihood of finding LBP on a particular surface in a facility is based on when it was constructed (before 1980 or during/after 1980), applicability of CPSA restrictions on use of LBP, and common painting practices.)

(NOTE: Although LBP may not be likely, some precautions described in the HUD guidelines will normally be considered in high priority facilities since children are potentially at risk and there is some possibility the LBP is present.)

Table 11-2

Radon Mitigation Schedule (FGS-Turkey, Table 16-1)

Radon Level (pCi/L)	Mitigation Within:		
Greater than 200	1 mo of sample results or move occupants		
200 or less, but greater than 20	6 mo of sample results		
20 or less, but greater than 8	4 yr		
8 or less, but greater than 4	5 yr		
4 or less	No action required		



INSTA	ALLA	TION:	COMPLIANCE CATEGORY:	DATE:	REVIEWER(S):
			TOXIC SUBSTANCES MANAGEMENT Turkey ECAMP		
S	TAT	US			
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SECTION 12

WASTEWATER MANAGEMENT

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Turkey ECAMP

SECTION 12

WASTEWATER MANAGEMENT

A. Applicability of this Section

This section identifies regulations, responsibilities, and compliance requirements applicable to all wastewater management, and discharge on Air Force (AF) installations, including activities and procedures involved in the collection, treatment, and discharge of wastewater.

The regulations, responsibilities, and compliance requirements associated with wastewater discharge at AF installations include, but are not limited to, the following examples:

- sanitary or industrial wastewater discharged directly to a receiving stream or through an onbase treatment facility
- sanitary or industrial wastewater discharge to an offbase publicly-owned treatment works (POTW) or to a treatment plant of another Department of Defense (DOD) activity
- stormwater runoff from industrialized areas of the installation to a receiving stream or water body.

Most AF installations have wastewater discharge of one type or another; therefore, this section will be applicable to most installations.

The regulatory requirements in this section are based on DOD regulations and Air Force Instructions (AFIs) that apply at overseas installations. Management Practices (MPs) are derived from U.S. Environmental Protection Agency (USEPA) regulations that are not mandatory overseas but are important to preserve the health and safety of AF employees and protect the environment.

B. DOD Directives/Instructions

• Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 4 contains criteria to control and regulate discharges of wastewaters into surface waters. It also addresses domestic and industrial wastewater discharges and pollutants from indirect dischargers.

C. U.S. Air Force Documents

- AFI 32-1067, *Water Systems*, 25 March 1994, provides guidelines for managing water and wastewater systems at AF installations.
- Air Force Manual (AFM) 91-32, *Operation and Maintenance of Domestic and Industrial Wastewater Systems*, specifies detailed operation and maintenance guidelines and requirements for treatment works on AF installations. In particular, requirements for maintenance of operating logs, maps, and records are specified in this AFM.
- HQ USAF/CE Letter, *Oil/Water Separators Operations, Maintenance, and Construction,* 21 October 1994, outlines requirements for the management of existing oil/water separators and the construction of new ones. The letter's requirements with respect to the construction of new oil/water separators are considered to go beyond the intent and scope of the *Overseas Environmental Baseline*

Guidance Document and the Final Governing Standards derived from it. Those requirements are therefore not included here.

D. Responsibility for Compliance

- Training of operating personnel to meet proficiency levels consistent with the operator certification requirements that apply to their location is also the responsibility of the Base Civil Engineer (BCE). The BCE is also responsible for negotiating and maintaining the base's water supply contract and for preparing applications for monitoring compliance with, and reporting deviations from, minimum standards outlined in Republic of Turkey (RT) wastewater discharge permits (or equivalents). The BCE's design departments are responsible for the design and construction of wastewater collection and treatment systems as needed on the installation.
- Bioenvironmental Engineering Services (BES) is responsible for monitoring wastewater discharge and streamwater quality at selected locations around the installation and for characterizing discharges.
- Individual Shop Supervisors and Superintendents are responsible for ensuring that the prohibited, unpermitted discharge of wastewater containing toxic or hazardous substances into sanitary or stormwater systems does not occur on the installation.
- The Water and Waste Shop within BCE is responsible for operating and maintaining sewer lines, pretreatment facilities, pump stations, oil/water separators, and other associated facilities around the installation and for taking timely and appropriate corrective actions when deficiencies are discovered.

E. Definitions

- 7-Day Average the arithmetic mean of pollutant parameter values for samples collected in a period of seven consecutive days (FGS-Turkey 20).
- 30-Day Average the arithmetic mean of pollutant parameter values for samples collected in a period of 30 consecutive days (FGS-Turkey 20).
- Average Monthly Discharge Limitations the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (FGS-Turkey 20).
- Average Weekly Discharge Limitations the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week (FGS-Turkey 20).
- BOD_5 the 5-day measure of the pollutant parameter, biochemical oxygen demand (FGS-Turkey 20).
- *CBOD*₅ the 5-day measure of the pollutant parameter, carbonaceous biochemical oxygen demand (FGS-Turkey 20).

- Community Water System (CWS) a public water system having at least 15 service connections used by year-round residents or that regularly serves at least 25 of the same people for more than 6 mo per year; compare with Public water system (FGS-Turkey 20).
- Conventional Pollutants biochemical oxygen demand (BOD₅), total suspended solids (TSS), oil and grease, fecal coliforms, and pH (FGS-Turkey 20).
- *Daily Discharge* the discharge of a pollutant measured during a calendar day or any 24-h period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement (e.g., concentration), daily discharge is calculated as the average measurement of the pollutant over the day (FGS-Turkey 20).
- Direct Discharge any discharge of pollutants other than an indirect discharge (FGS-Turkey 20).
- *Discharge of a Pollutant* any addition of any pollutant or combination of pollutants to waters of the RT from any point source (FGS-Turkey 20).
- Domestic Wastewater Treatment Plant (DWTP) any DOD or host nation facility designed to treat wastewater before its discharge to waters of the host nation and in which the majority of such wastewater is made up of domestic sewage (FGS-Turkey 20).
- *Effluent Limitation* any restriction imposed on quantities, discharge rates, and concentrations of pollutants that are ultimately discharged from point sources into waters of the host nation (FGS-Turkey 20).
- *Existing Source* a source that discharges pollutants that was in operation or under construction prior to 1 October 1994 (FGS-Turkey 20).
- *Indirect Discharge* the introduction of pollutants in process wastewater to a DWTP (FGS-Turkey 20).
- Industrial Wastewater Treatment Plant (IWTP) any DOD facility designed to treat process wastewater before its discharge to waters of the host nation other than a DWTP (FGS-Turkey 20).
- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- Maximum Daily Discharge Limitation the highest allowable daily discharge (FGS-Turkey 20).
- *Point Source* any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, or rolling stock, but not including vessels, aircraft, or any conveyance that merely collects natural surface flows of precipitation (FGS-Turkey 20).
- *Pollutant* includes, but is not limited to, the following: dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water (FGS-Turkey 20).

- *Process Wastewater* any water that, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product (FGS-Turkey 20).
- *Regulated Facility* a facility for which standards are established in Chapter 4 of FGS-Turkey, such as DWTP, IWTP, or industrial dischargers (FGS-Turkey 20).
- Sanitary Survey an onsite review of the water source, facilities, equipment, operation, and maintenance of a public water system to evaluate the adequacy of such elements for producing and distributing potable water (FGS-Turkey 20).
- *Sludge* the accumulated semi-liquid suspension of settled solids deposited from wastewaters or other fluids in tanks or basins. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved, or suspended solids in industrial wastewater effluent, dissolved materials in irrigation return flows, or other common water pollutants (FGS-Turkey 20).
- Substantial Modification any modification or functional alteration to an existing environmental control facility, the cost of which exceeds \$1 million, regardless of funding source (FGS-Turkey 20).
- Total Suspended Solids (TSS) the pollutant parameter total filterable suspended solids (FGS-Turkey 20).
- Waters of the Republic of Turkey surface waters, including the territorial seas recognized under customary international law, including (FGS-Turkey 20):
 - 1. all waters that are currently used, were used in the past, or may be susceptible to use in commerce
 - 2. waters that are or could be used for recreation or other purposes
 - 3. waters from which fish or shellfish are or could be taken and sold
 - 4. waters that are used or could be used for industrial purposes by industries
 - 5. waters including lakes, rivers, and streams (including intermittent streams), sloughs, prairie potholes, or natural ponds
 - 6. and tributaries of waters identified above.

(NOTE: Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of FGS-Turkey, are not waters of the RT. This exclusion only applies to man-made bodies of water that neither were originally waters of the RT nor resulted from impoundment of waters of the RT.)

WASTEWATER MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations	12-1 through 12-3	(1)(2)(7)
General	12-4 through 12-10	(1)(2)(3)
Point Source Discharges	12-11 through 12-14	(2)(3)(4)
Discharges to DWTPs	12-158 through 12-20	(1)(2)(3)(4)
Effluent Limitations	12-21	(2)(3)
Oil/Water Separators	12-22	(1)
Training and Certification	12-23 and 12-24	(3)(5)

(a) CONTACT/LOCATION CODE:

- (1) BCE (Environmental Planning)
- (2) BES (Bioenvironmental Engineering Services)
- (3) Wastewater Treatment Plant Superintendent
- (4) BCE (Natural Resources Planner)
- (5) Water Treatment Plant Superintendent
- (6) Backflow Program Manager
- (7) Base Staff Judge Advocate

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WASTEWATER MANAGEMENT

Records To Review

- · Discharge monitoring reports for the past year
- · Laboratory records and procedures
- Monthly operating reports for wastewater treatment facilities
- · Flow monitoring calibration certification and supporting records
- Ash pond volume certification and supporting records
- Red water inspection records
- Installation spill plan
- All records required by the spill plan
- · Sewage treatment plant operator certification
- · Sewer and storm drain layout
- Oil/water separator inventory
- · Installation as-built drawings

Physical Features To Inspect

- Discharge outfall pipes
- · Wastewater treatment facilities
- · Industrial treatment facilities
- Streams, rivers, open waterways
- Floor and sink drains (especially in industrial areas)
- Stormwater collection points (especially in industrial areas)
- Oil storage tanks
- Oil/water separators

People To Interview

- BCE (Environmental Planning)
- BES (Bioenvironmental Engineering Services)
- Wastewater Treatment Plant Superintendent
- BCE (Natural Resources Planner)
- Base Staff Judge Advocate

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
ALL INSTALLATIONS	· · ·		
12-1. Copies of all relevant DOD directives/ instructions, U.S. Air Force (USAF) directives, and guidance documents should be maintained at the installation (MP).	 Verify that the Base Staff Judge Advocate has available the host-nation Final Governing Standards and relevant USAF documents. (1)(7) (NOTE: Among the relevant documents are the following: AFI 32-1067, Water Systems, 25 March 1994 AFM 91-32, Operation and Maintenance of Domestic and Industrial Wastewater Systems, 12 August 1988 HQ USAF/CE Letter, Oil/Water Separators Operations, Maintenance, and Construction, 21 October 1994.) 		
12-2. Installations must meet regulatory requirements issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether any new regulations concerning water quality have been issued since the finalization of the manual. (1)(7) Verify that the installation is in compliance with newly issued regulations.		
12-3. Outside of the con- tinental United States (OCONUS) installations must cooperate with for- eign regulatory agencies (AFI 32-1067, para 14.1).	Verify that the installation cooperates with Turkish regulatory agencies, consister with host nation agreements. (1)(2)		
GENERAL			
12-4. BES must conduct periodic evaluations of the treatment works' compliance with applicable standards (AFI 32-1067, para 4.4).	Verify that BES conducts periodic evaluations of compliance with applicable stan- dards. (2)		

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
12-5. Major treatment works must have plant-	Verify that the installation's major treatment works have plant-specific O&M manuals. (3)		
specific O&M manuals (AFI 32-1067, para 7.3.1).	(NOTE: Domestic and industrial wastewater treatment plants are the primary facili- ties covered by this instruction.)		
	Verify that, if the facilities are present on the installation, plant-specific manuals address the following areas of concern:		
	- metal finishing and electroplating		
	- vehicle and aircraft was facilities		
	- aircraft maintenance:		
	 paint stripping nondestructive inspection 		
	- painting		
	- solvent cleaning		
	- battery shops		
	- photo labs - hospitals		
	- aircraft deicing		
	- fire training.		
	Verify that plant-specific manuals address the proper operation and maintenance of oil/water separators and lift stations.		
12-6. Specific physical facility information must	Verify that the following information is developed, maintained, and kept available at the treatment facilities: (1)(3)		
be developed, maintained, and kept available at treatment facilities (AFI 32-1067, para 10.2).	- required plant-specific O&M manuals and applicable AF publications - system operating instructions with single-line drawings, including operational		
	and compliance monitoring procedures - up-to-date system as-built drawings along with other system plans and blue- prints, including hydraulic water elevation profiles and a drawing of the entire		
	collection and distribution systems - shop drawings, catalogue cuts, and any other equipment information or litera- ture.		
12-7. Installations must develop and maintain	Verify that the installation develops and maintains effective maintenance plans that include: (1)		
effective maintenance plans that address spe-	- a recurring work schedule		
cific topics (AFI 32-	- a maintenance history for each major piece of equipment		
1067, para 10.3).	- an essential spare parts list, with spare parts stocked at the treatment facility or other accessible location		
	- a long-range maintenance and improvement plan.		

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
12-8. Each installation must have a system for investigating water pollution complaints from individuals and local or national water pollution control authorities (FGS-Turkey 4-1.D and 4-2.B).	 Verify that the installation has procedures for investigating water pollution complaints. (3) Verify that the installation provides to HQ U.S. Air Force - Europe (USAFE) copie of all correspondence and documentation used to resolve complaints from RT officials. Verify that the installation consults with HQ USAFE before attempting to resolve any complaint or dispute that could affect other DOD installations in the RT. 		
12-9. Activities or installations that have a significant potential for spills or batch discharges must develop a slug prevention plan (FGS-Turkey 4-2.A.6.a through 4-2.A.6.g).	 Verify that the plan contains the following, at a minimum: (2)(3) a description of discharge practices, including nonroutine batch discharges a description of stored chemicals a plan for immediately notifying the DWTP of slug discharges and discharge that would violate standards, including procedures for subsequent written notification within 5 days necessary practices to prevent accidental spills, including: proper inspection and maintenance of storage areas handling and transfer of materials loading and unloading operations control of plant site runoff worker training proper procedures for building containment structures or equipment necessary measures to control toxic organic pollutants and solvents proper procedures and equipment for emergency response and any subsequent plans needed to limit damage to the treatment plant or the environment. 		
12-10. Operators of treatment works must prepare pollution control logs (AFI 32-1067, para 10.1.2).	Verify that operators prepare the following forms: (3) - AF Form 1462, Water Pollution Control Utility Operating Log (General) - AF Form 1463, Water Pollution Control Plant Operating LogSupplementary		

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
POINT SOURCE DISCHARGES			
12-11. New point source dischargers of pollutants must meet specific effluent limitations and monitoring requirements (FGS-Turkey 4-1.A and 4-1.C).	 Verify that all new sources of pollutants to waters of the RT comply with the following effluent limitations: (2)(3) BOD₅: 30-day average does not exceed 30 mg/L 7-day average does not exceed 45 mg/L TSS: 30-day average does not exceed 30 mg/L 7-day average does not exceed 45 mg/L effluent pH values are maintained between 6.0 and 9.0. Verify that the installation monitors these parameters according to Table 12-1. (NOTE: Installations may request HQ USAFE to substitute CBOD₅ for the parameter BOD₅ at new sources. In those cases, the following apply: 30-day average does not exceed 25 mg/L 7-day average does not exceed 40 mg/L.) (NOTE: Discharge at a new source can be exempted from the pH limit if it is demonstrated that both: no inorganic chemicals are added to the waste stream as part of the treatment process contributions from industrial sources do not cause the pH of the effluent to be outside the 6.0 to 9.0 range.) (NOTE: Samples should be collected at the point of discharge prior to any mixing with the receiving water.) 		
12-12. Existing point source dischargers of pollutants must meet specific effluent limitations and monitoring requirements (FGS-Turkey 4-1.B and 4-1.C).	 Verify that all existing source of pollutants to waters of the RT comply with the following effluent limitations: (2)(3) BOD₅: 30-day average does not exceed 45 mg/L 7-day average does not exceed 65 mg/L TSS: 30-day average does not exceed 45 mg/L 7-day average does not exceed 65 mg/L 6 ffluent pH values are maintained between 6.0 and 9.0. Verify that these parameters are monitored in accordance with Table 12-1. (NOTE: Samples should be collected at the point of discharge prior to any mixing with the receiving water.) 		

REGULATORY	Republic of Turkey ECAMP REVIEWER CHECKS:	
REQUIREMENTS:	August 1997	
12-13. Samples of wastewater discharges should be processed using proper collection, testing, and shipping procedures (MP).	 Verify that, for wastewater sampling: (2)(3) proper sample containers are used samples are refrigerated during compositing proper preservation techniques are used. 	
12-14. Installations with live fire training facilities	Verify that there is an effective fuel and water separator. (4)	
that are connected to onsite wastewater treat-	Verify that the fuel and water separator are being properly maintained.	
ment plants should dis-	Verify that there are self-monitoring reports on fuel and water separators.	
gradually to avoid adverse impact on the	Verify that wastewater treatment plant discharge is in compliance with permit requirements.	
wastewater treatment plants (MP).	Verify that the fuel used for fire training is free from contaminants that can cause adverse environmental impact.	
DISCHARGES TO DWTPs	(NOTE: These and the following effluent limitations apply to all discharges of polutants to DWTPs and associated collection systems.)	
12-15. Installations must develop a base standard wastewater treatment pro-	Verify that the installation has a base standard wastewater treatment procedure govern the discharge of industrial and nondomestic waste to the sanitary system generating activities. (1)(3)	
cedure to govern the dis- charge of industrial and nondomestic waste to the	Verify that BCE outlines procedures for discharging industrial wastes to the sanita system.	
sanitary system by gener- ating activities (AFI 32-	Verify that the procedures describe the following:	
1067, para 7.3.2).	 pretreatment requirements discharge procedures effluent limitations for industrial waste. 	
	(NOTE: The base commander or the municipal wastewater authority can importhese requirements.)	
	Verify that generators follow the instructions given by BCE.	

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
12-16. Generators must use pollution control techniques to minimize pollutant discharges (AFI 32-1067, para 7.3.2).	Verify that generators of discharges minimize the discharge of pollutants using the pollution control techniques in AFI 32-7080. (1)(3) (NOTE: See Section 6, Other Environmental Issues.)		
12-17. Installations must not discharge certain materials into a treatment works (FGS-Turkey 4- 2.A.1, A.5, and A.7).	 Verify that the installation does not discharge any of the following to a DWTP: (1)(2)(3) petroleum oil nonbiodegradable cutting oil products of mineral oil origin any solid or viscous pollutants that may result in obstructions to plant flow trucked or hauled waste. (NOTE: DWTPs may specify locations at which trucked and hauled waste may be discharged; the prohibition on discharge of such waste does not apply at such locations.) 		
12-18. Installations must not introduce specific pol- lutants into a DWTP (FGS-Turkey 4-2.A.2, A.3, and A.4).	 Determine whether the installation has been granted any exemptions or variances concerning its discharges. (1)(3) Verify that pollutants that create a fire or explosion hazard in the collection system or treatment facility are not discharged, specifically: wastewater with a closed cup flashpoint of less than 60 °C (140 °F) liquid waste solutions that contain more than 24 percent alcohol by volume with a flash point less than 60 °C (140 °F) nonliquid wastes which, under standard temperature and pressure, can cause a fire through friction ignitable compressed gases oxidizers, such as peroxide. Verify that no pollutant that has the potential to be structurally corrosive is discharged to the DWTP. Verify that no wastewater with a pH lower than 5 is discharged to the DWTP. (NOTE: This prohibition does not apply if the treatment facilities and collecting systems are specifically designed to handle such wastewater.) 		

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
12-18. (continued)	Verify that the following types of waste are not discharged:	
	 wastes that are normally unstable and readily undergo violent changes withou detonating wastes that react violently with water wastes that form explosive mixtures with water or form toxic gases or fumes when mixed with water cyanide or sulfide wastes that can generate potentially harmful toxic fumes gases, or vapors wastes capable of detonation or explosive decomposition or reaction at standard temperature and pressure wastes that contain explosives regulated by FGS-Turkey, Chapter 5 wastes that produce any toxic fumes, vapors, or gases with the potential to cause safety problems or harm to workers. 	
12-19. Hazardous waste must not be discharged to the collection system (AFI 32-1067, para 7.3.2).	Verify that no hazardous waste is discharged to the collection system. (1)(3)	
12-20. Installations should periodically survey stormwater discharge (MP).	 Verify that the installation's stormwater discharges are uncontaminated. (1)(2)(4) (NOTE: The following sites or activities, and records related to them, may reveal problems with stormwater discharges: the storm sewer system, its outfalls and discharge points major industrial shops or areas, such as the following: battery shop corrosion control engine shop plating shop petroleum, oil, and lubricant (POL) area.) (NOTE: Signs of contamination include oil sheen, discoloration, etc.) Verify that any oil/water separators connected to the storm sewer on the installation are operating properly. 	

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
EFFLUENT LIMITATIONS		
12-21. Installations that have certain industrial activities must consult with HQ USAFE (FGS- Turkey 4-3).	 Determine whether the installation has any of the following activities: (2) electroplating anodizing metal coating from chromating, phosphating, or immersion plating chemical etching and milling electroless plating printed circuit board manufacturing. Verify that the installation has consulted with the HQ USAFE and obtained effluent limitations. 	
	Verify that the installation complies with the limitations.	
OIL/WATER SEPARATORS		
12-22. Existing oil/water separators must be man- aged in accordance with specific requirements (HQ USAF/CE Oil/Water Separator Letter).	 Verify that the installation has developed and implemented a plan to assess the need for and effectiveness of existing oil/water separators. (1) (NOTE: The goal of the assessment/evaluation is to consolidate or eliminate ineffective units.) Verify that an inventory of all oil/water separators has been conducted that identifies: all sources of pollutants being discharged from the individual shops connected to each separator the mode of discharge (e.g., to storm sewer, sanitary sewer, septic tank, or direct discharge to the waters of the host nation). (NOTE: For the purposes of this inventory, oil/water separators include online oil and grease/fuel traps and small oil/water separators, aerospace ground equipment (AGE) equipment maintenance shops, wash racks, etc. Mode of discharge includes discharge to storm sewer, septic tank, or direct discharge and small oil/water separators outside of hangers, corrosion control facilities, fuel transfer/storage operations, aerospace ground equipment (AGE) equipment maintenance shops, wash racks, etc. Mode of discharge includes discharge to storm sewer, septic tank, or direct discharge to the waters of the host nation.) Verify that the separators are identified on the installation as-built drawings. Verify that the drawings are updated as changes occur. 	

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
TRAINING AND CERTIFICATION		
12-23. Operators of water treatment plants	Verify that new operators receive classroom training and extensive supervised of the-job training before being assigned to critical tasks. (3)(5)	
and wastewater treatment plants must meet training requirements (AFI 32-	Verify that experienced personnel receive technical refresher courses and upgrad training.	
1067, para 8.1).	 (NOTE: Training requirements may be met by one of the following means: AF training available through technical schools, career development correspondence courses, and on-the-job training civilian training courses available at educational institutions, government age cies, and professional and technical associations correspondence courses from accredited institutions for operators in areas the do not have local resident courses.) 	
12-24. Supervisors at water treatment plants and wastewater treatment plants must meet specific requirements with regard to safety training for all employees (AFI 32-1067, para 9).	 Verify that all employees are familiar with the safety instructions in the followin documents, as applicable: (3)(5) AFM 91-32, Operation and Maintenance of Domestic and Industrial Wastewn ter Systems Air Force Occupational Safety and Health (AFOSH) Standard 127-10, Cin Engineering AFOSH Standard 127-25, Confined Spaces AFOSH Standard 161-21, AF Hazard Communication Standard. 	
	Verify that the supervisor maintains current BES baseline and annual industri hygiene survey reports.	
	(NOTE: The supervisor should use these reports to train workers on occupation health hazards.)	
	Verify that supervisors make safety instructions readily available to all operating pe sonnel.	
	Verify that supervisors train facility personnel on safety procedures and equipme and enforce their proper use at all times.	
	(NOTE: Once trained, individual workers are personally responsible for followir safe procedures.)	

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Table 12-1

Monitoring Requirements for Wastewater (FGS-Turkey, Table 4-1)

Plant Capacity in million gallons per day	Monitoring Frequency
0.0 - 0.099	Quarterly
0.1 - 0.99	Monthly
1.0 - 4.99	Weekly
> 5.0	Daily

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INSTALLATION:	COMPLIANCE CATEGORY:	DATE:	REVIEWER(S
	WASTEWATER MANAGEMENT Turkey ECAMP		
STATUS			I
NA C RMA	REVIEWER COMMENTS:		

SECTION 13

WATER QUALITY MANAGEMENT

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Turkey ECAMP

SECTION 13

WATER QUALITY MANAGEMENT

A. Applicability of this Section

This section identifies regulations, responsibilities, and compliance requirements applicable to all water use and management on Air Force (AF) installations, including activities and procedures involved in the collection, treatment, storage, and distribution of drinking water.

All AF installations have potable water issues of one sort or another; therefore, this section will be applicable to most installations.

The regulatory requirements in this section are based on Department of Defense (DOD) regulations, Air Force Regulations (AFRs), and Air Force Instructions (AFIs) that apply at overseas installations. Management Practices (MPs) are derived from U.S. Environmental Protection Agency (USEPA) regulations that are not mandatory overseas but are important to preserve the health and safety of AF employees and protect the environment.

B. DOD Directives/Instructions

• Standards Governing Environmental Protection for U.S. Installations in the Republic of Turkey (FGS-Turkey), March 1994, Chapter 3, addresses standards for potable water and the management of a drinking water facility.

C. U.S. Air Force Documents

- AFR 91-26, *Maintenance and Operation of Water Supply, Treatment, and Distribution Systems,* 30 August 1984, provides guidance for personnel who maintain and operate water supply, treatment, and distribution systems on AF installations.
- AFI 32-1066, *Plumbing Systems*, 4 May 1994, provides guidance for personnel who maintain and operate plumbing systems on AF installations.
- AFI 32-1067, *Water Systems*, 25 March 1994, provides guidelines for managing water and wastewater systems at AF installations.
- Headquarters (HQ) U.S. Air Force (USAF)/SG Policy Letter, *Water Testing in Child Development Centers (CDCs)*, 21 October 1992, provides guidelines for monitoring drinking water at AF CDCs.

D. Responsibility for Compliance

• The Base Civil Engineer (BCE) designs, constructs, and operates the water supply system to provide sufficient drinking water to installation personnel. The BCE is responsible for providing adequate water treatment to assure that drinking water does not exceed the maximum contaminant levels established for human consumption. Training of operating personnel to meet proficiency levels consistent with the operator certification requirements that apply to their location is also the responsibil-

ity of the BCE. The BCE maintains an up-to-date map of the complete potable water system, makes repairs, and maintains the systems. The BCE is also responsible for negotiating and maintaining the base's water supply contract.

• The Director of Base Medical Services, through Bioenvironmental Engineering Services (BES), is responsible for proper sample collection from drinking water systems at AF installations and for determining compliance with drinking water standards.

E. Definitions

- Action Level the concentration of a substance in water that determines appropriate treatment for a water system (FGS-Turkey 20).
- Approved in the context of backflow prevention, 'approved' means that the International Association of Plumbing and Mechanical Officials (IAPMO) laboratory has tested the product and that it meets their standards. IAPMO-approved products carry an attached or imprinted IAMPO seal of approval. BCE can, with Major Command (MAJCOM) coordination, approve the installation of a new product or device not yet approved by IAPMO, but BCE must ensure that it will safely satisfy the intended purpose (AFI 32-1066, para 12.4).
- Community Water System (CWS) a public water system having at least 15 service connections used by year-round residents or that regularly serves at least 25 of the same people for more than 6 mo per year; compare with Public water system (FGS-Turkey 20).
- Concentration/Time (CT) the product of residual disinfectant concentration (C) in mg/L determined before or at the first customer, and the corresponding disinfectant contact time (T) in minutes (FGS-Turkey 20).
- *Disinfectant* any oxidant, including but not limited to, chlorine, chlorine dioxide, chloramines, and ozone, intended to kill or inactivate pathogenic microorganisms in water (FGS-Turkey 20).
- First Draw Sample a 1 L [≈1 qt] sample of tapwater that has been standing in plumbing at least 6 h and is collected without flushing the tap (FGS-Turkey 20).
- Groundwater Under the Direct Influence of Surface Water (GWUDISW) any water below the surface of the ground with either (FGS-Turkey 20):
 - 1. significant occurrence of insects or other microorganisms, algae, or large-diameter pathogens such as *Giardia lamblia*
 - 2. significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH that closely correlate to climatological or surface water conditions.

(NOTE: Direct influence must be determined for individual sources.)

- Lead-free a maximum lead content of 0.2 percent for solder and flux and 8 percent for pipes and fittings (FGS-Turkey 20).
- Lead Service Line a service line, made of lead, that connects the water main to the building inlet, and any lead pigtail, gooseneck, or other fitting which is connected to such a line (FGS-Turkey 20).

- *Management Practice (MP)* practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Maximum Contaminant Level (MCL)* the maximum permissible level of a contaminant in water that is delivered to the free-flowing outlet of the ultimate user of a public water system, except for turbidity, for which the maximum permissible level is measured after filtration (FGS-Turkey 20).

(NOTE: Contaminants added to the water under circumstances controlled by the user, except those resulting from the corrosion of piping and plumbing caused by water quality, are excluded.)

- Non-Public Water System (NPWS) a system that is not a public water system, for example, a well serving a building (FGS-Turkey 20).
- Non-Transient, Non-Community Water System (NTNCWS) a public water system that is not a community water system and that regularly serves at least 25 of the same persons for more than 6 mo/yr. Examples include a school or a factory with its own water supply (FGS-Turkey 20).
- *Point-of-Entry (POE) Treatment Device* a treatment device applied to the drinking water entering a structure to reduce contaminants in the drinking water throughout the structure (FGS-Turkey 20).
- *Point-of-Use (POU) Treatment Device* a treatment device applied to a tap to reduce contaminants in drinking water at that tap (FGS-Turkey 20).
- *Potable Water* water that has been examined and treated to meet the standards of FGS-Turkey, Chapter 3 (FGS-Turkey 20).
- *Public Water System (PWS)* a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. This term includes:
 - 1. any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system
 - 2. any collection or pretreatment storage facilities not under such control that are used primarily in connection with such system.

A PWS is either a CWS or a non-community water system (FGS-Turkey 20).

- Sanitary Survey an onsite review of the water source, facilities, equipment, operation, and maintenance of a public water system to evaluate the adequacy of such elements for producing and distributing potable water (FGS-Turkey 20).
- Substantial Modification any functional alteration to an existing environmental control facility, the cost of which exceeds \$1 million, regardless of funding source (FGS-Turkey 20).
- *Total Trihalomethanes* the sum of the concentration in mg/L of chloroform, bromoform, dibromochloromethane, and bromodichloromethane (FGS-Turkey 20).
- Transient, Non-Community (TNC) Water System See Public Water System (FGS-Turkey 20).

- Underground Injection a subsurface emplacement through a bored, drilled, driven, or dug well, where the depth is greater than the largest surface dimension whenever a principle function of the well is the emplacement of any fluid (FGS-Turkey 20).
- Volatile Organic Compound (VOC) any compound of carbon and hydrogen or containing carbon and hydrogen in combination with any other element which has a vapor pressure of 1.5 psia (77.6 mm Hg) or greater under actual storage conditions.

(NOTE: Although an entry for this term is found in FGS-Turkey, Chapter 20, no definition is associated with it. The definition supplied here is taken from the FGS for the United Kingdom, a document prepared by the same Executive Agent.)

• *Vulnerability Assessment* - an evaluation by the DOD that shows that contaminants of concern either have not been used in a watershed area or the source of water for the system is not susceptible to contamination (FGS-Turkey 20).

(NOTE: Susceptibility is based on prior occurrence, vulnerability assessment results, environmental persistence and transport of the contaminants, and any wellhead protection program results.)

• *Water System* - refers to PWSs and NPWSs, and purchasers who have a distribution system and water storage facilities (FGS-Turkey 20).

WATER QUALITY MANAGEMENT

GUIDANCE FOR CHECKLIST USERS

	REFER TO CHECKLIST ITEMS:	CONTACT THESE PERSONS OR GROUPS: (a)
All Installations	13-1 through 13-4	(1)(2)(6)
Backflow Prevention	13-5 through 13-17	(1)(2)(5)
Drinking Water		
General	13-18 through 13-28	(1)(2)(4)
Water Quality Standards	13-29 through 13-40	(2)(4)
Disinfection and Filtration	13-41 and 13-42	(1)(2)(3)
Child Development Centers	13-43 through 13-47	(2)
Recordkeeping and Notifi-	-	
cation Requirements	13-48 through 13-57	(1)(2)(4)
Alternative Water Supplies	13-58	(1)(2)
Underground Injection Control	13-59	(2)(3)
Aquifers	13-60	(2)(3)
Training and Certification	13-61 and 13-62	(3)(4)

(a) CONTACT/LOCATION CODE:

(1) BCE (Environmental Planning)

(2) BES (Bioenvironmental Engineering Services)

(3) BCE (Natural Resources Planner)

(4) Water Treatment Plant Superintendent

(5) Backflow Program Manager

(6) Base Staff Judge Advocate



WATER QUALITY MANAGEMENT

Records To Review

- Bacterial and chemical analyses of drinking water, including sampling dates and locations, dates of analyses, analytical methods used, and results of analyses
- Monthly operating reports (flow, chlorine residual, etc.)
- Records of planning and construction of injection wells
- Results of injection well monitoring
- Records of facility projects, including any petition for review, that may potentially cause contamination of a sole source aquifer through its recharge zone

Physical Features To Inspect

- Drinking water collection, treatment, and distribution facilities
- Onbase laboratory analysis facilities
- Underground injection wells

People To Interview

- BCE (Environmental Planning)
- BES (Bioenvironmental Engineering Services)
- BCE (Natural Resources Planner)
- Water Treatment Plant Superintendent
- Base Staff Judge Advocate



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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
ALL INSTALLATIONS		
13-1. Copies of all relevant DOD directives/ instructions, USAF directives, and guidance documents should be maintained at the installation (MP).	 Verify that the Base Staff Judge Advocate has available the host-nation FGS and relevant USAF documents. (1)(6) (NOTE: Among the relevant documents are the following: AFR 91-26, Maintenance and Operation of Water Supply, Treatment, and Distribution Systems, 30 August 1984 AFI 32-1066, Plumbing Systems, 4 May 1994 AFI 32-1067, Water Systems, 25 March 1994 HQ USAF/SG Policy Letter, Water Testing in Child Development Centers, 21 October 1992.) 	
13-2. Installations must meet regulatory require- ments issued since the finalization of the manual (a finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether any new regulations concerning water quality have been issued since the finalization of the manual. (1)(6) Verify that the installation is in compliance with newly issued regulations.	
13-3. Outside of the con- tinental United States (OCONUS) installations must cooperate with for- eign regulatory agencies (AFI 32-1067, para 14.1).	Verify that the installation cooperates with Turkish regulatory agencies, consistent with host nation agreements. (1)(2)	
13-4. Bases must not have dual water supply systems for potable and nonpotable water unless certain conditions have been met (AFI 32-1067, para 12.1).	 tems: (1) BCE establishes and maintains a clearly defined separation of the two system so that nonpotable water cannot contaminate the potable water system 	

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
BACKFLOW PREVENTION	(NOTE: Except for laboratory sinks and sinks with hose threaded faucets, backflow preventers integral to a standard plumbing fixture do not come under this program.)	
13-5. Installations must have a Backflow Pro-	Verify that an engineer or appropriate supervisor has been appointed the Backflow Program Manager. (1)(5)	
gram Manager who ful- fills specific responsi- bilities (AFI 32-1066,	Verify that the Backflow Program Manager:	
paras 6, 8, and 12.2).	 maintains an aggressive program to identify, isolate, record, and correct cross- connections and other potential sources of distribution system contamination makes sure plumbing personnel can properly test, install, maintain, and repair backflow prevention device identifies and forecasts training requirements for BCE personnel 	
	 reviews all plans and drawings of new or modified water systems to identify potential cross-connections centrally maintains inspection records and the status of installation and upgrade actions. 	
13-6. The installation's Backflow Program Manager must conduct a facility survey of plumbing devices and systems every 5 yr (AFI 32-1066, paras 8, 12.1).	Verify that the Backflow Program Manager conducts a facility survey of plumbing devices and systems every 5 yr. (5)	
	Verify that records are updated to reflect the results of the survey.	
	(NOTE: Military family housing is excluded from the survey unless underground sprinkler systems are installed.)	
	(NOTE: The Backflow Program Manager coordinates the surveys with BES.)	
	Verify that survey personnel locate backflow prevention devices, assess their ade- quacy, and determine the need for more devices.	
	(NOTE: This information is used to determine potential or existing cross-connec- tions and the degree of hazard they present.)	
	Verify that the results of the survey are recorded on AF Form 848, Inventory of Cross-Connection Control and Backflow Prevention Devices.	
13-7. BES must fulfill particular responsibilities	Verify that BES assigns a degree of hazard to each cross-connection, using the Uni- form Plumbing Code (UPC). (2)	
with regard to cross-con- nections (AFI 32-1066, para 9).	Verify that BES reviews plans for water system modification to prevent cross-con- nections and to identify existing cross-connections or other potential sources of con- tamination or pollution and recommends corrective action.	

REVIEWER CHECKS: August 1997	
Verify that the potential for cross-connection is eliminated. (1)	
Verify that, if elimination is not feasible, approved prevention devices are installed	
Verify that the devices installed prevent contamination of potable water supplies th are susceptible to backpressure or back-siphonage from fixtures, equipment, appl ances, or buildings.	
Verify that, if the potable water supply is critical, approved backflow preventers a installed in parallel to allow maintenance or repair without system shutdown.	
Verify that severe cross-connections are eliminated immediately. (1)	
Verify that existing backflow prevention devices are identified during the survey by control number. (5)	
Verify that unapproved devices are replaced in priority depending on the degree hazard and without waiting for the devices to fail.	
(NOTE: MAJCOM/CE may be contacted for help when uncertain about a device category or level of protection.)	
Verify that double check valve backflow preventers are installed on new dry/wet fi suppression systems that use only water as a fire suppressant. (5)	
Verify that a reduced pressure type backflow device is used where antifreeze or oth hazardous chemicals are added.	
Verify that backflow preventers are approved and listed for fire protection use lacceptable testing agencies such as Underwriters' Laboratories or Factory Mutual.	
Verify that backflow prevention retrofit work is performed when systems are dow for major renovation. (5)	
(NOTE: This requirement is waived if a threat dictates that the work be performe sooner.)	

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COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
13-13. Technicians who test and maintain back-	Verify that MAJCOM-certified technicians perform tests, inspections, and mainte- nance of backflow prevention devices. (5)	
flow prevention devices must be certified by MAJ- COM (AFI 32-1066,	(NOTE: Current certificates using forms other than AF Form 483, Certificate of Competency are valid until they expire.)	
paras 14 and 15).	Verify that technicians are recertified by MAJCOM every 3 yr.	
	(NOTE: The MAJCOM recertifies technicians using data furnished by BCE, who requests recertification at least 60 days before the expiration date on AF Form 483. For the purposes of recertification a retraining course is unnecessary if the technician has inspected and tested a representative number (normally 50) of double-check and/ or reduced pressure backflow devices since last certified.)	
13-14. Tests and inspec- tions of backflow devices must be conducted on a schedule established by the Backflow Prevention Manager (AFI 32-1066, para 13).	Verify that the Backflow Prevention Manager has established a schedule for testing and inspecting all backflow devices, including air gaps. (5)	
	Verify that the frequency of testing, inspection, and overhaul of each devices is established with due regard to the age, condition, and degree of hazard each prevents.	
	(NOTE: The inspecting and testing schedule should be part of the recurring work program.)	
	Verify that overhauls are performed according to manufacturer recommendations.	
	(NOTE: The following are recommended time intervals for inspection of backflow prevention devices.	
	If the Degree of Hazard is: Inspect Device Every:	
	Minor 24 mo	
	Moderate 24 mo	
	Severe6 mo(Air Gap)12 mo.)	
13-15. Certain tasks must be conducted in the	Verify that certified backflow inspectors inspect all cross-connections to make sure that: (5)	
course of inspections of cross-connections (AFI 32-1066, paras 13.1, 13.2, and 13.3).	 there is an approved air gap the backflow prevention devices are in good condition newly installed devices were installed correctly and are free of debris that could interfere with their functioning. 	
	Verify that all devices are tested in accordance with the UPC, the UPC Illustrated Testing Manual, or the manufacturer's instructions.	

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
13-15. (continued)	Verify that defective devices are repaired and retested or replaced.	
	Verify that the inspector records data on all cross-connections on AF Form 84. Cross-Connection Information, or an approved computerized version.	
	(NOTE: For an air gap, the test consists of a visual inspection and an "OK" recorde if it is satisfactory.)	
	Verify that the form appropriate for the device is also filled out:	
	- AF Form 843, Backflow Prevention Inspection Data - AF Form 844, Backflow Prevention (Vacuum Breakers) Inspection Data.	
13-16. Installations must meet specific inspection requirements on newly installed backflow pre- vention devices (AFI 32- 1066, para 13.1).	Verify that newly installed devices are inspected within 1 wk of installation. (5) Verify that a follow-up inspection is performed 3 mo later.	
13-17. Installations must meet recordkeeping requirements with regard to backflow prevention	Verify that the installation keeps an inventory of all device locations and an individual record (AF Form 845) for each device. (5) Verify that records of cross-connection control and backflow prevention devices as	
to backflow prevention (AFI 32-1066, para 13.4).	kept at a central location.	
	Verify that the Backflow Program Manager keeps the records current and complete	
DRINKING WATER		
General		
13-18. Installations must use municipal or regional water supply systems	Verify that the installation uses a municipal or regional water system where feasibl (1)	
where feasible (AFI 32- 1067, para 2).	Verify that a life-cycle cost analysis is performed to determine the most cost-effective approach.	

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
13-19. Installations must develop and update as necessary an emergency contingency plan to ensure the provision of potable water despite interruptions from natu- ral disasters and service interruptions (FGS-Tur- key 3-1.J and AFI 32- 1067, para 13).	 Verify that the installation has an emergency contingency plan that includes, a minimum: (1)(2) identification of key personnel procedures to restore service procedures to isolate damaged lines identification of alternative water supplies installation public notification procedures a vulnerability assessment. Verify that the plan is updated as necessary. 	
13-20. BCE must develop local operating instructions that address specific topics (AFI 32-1067, para 4.3).	 Verify that BCE has developed local operating instructions that include the folloring: (1) operational monitoring for process control sampling and testing procedures emergency operations maintenance regulatory compliance requirements. 	
13-21. Installations must maintain a current map/ drawing of the complete potable water system (FGS-Turkey 3-1.A).	Verify that the installation maintains a current map/drawing of the complete potal water system. (1)	
13-22. Installations must have a Potable Water Sys- tem Master Plan that is updated at least every 5 yr (FGS-Turkey 3-1.B).	Verify that the installation has a Potable Water System Master Plan. (1) Verify that the plan is updated at least every 5 yr.	
13-23. Each separate water supply source must have a water meter and a raw water sampling point (AFI 32-1067, para 6).	Verify that each separate water supply source has a water meter and a raw water sampling point for water quality monitoring. (1)(4)	

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
13-24. Each active well should have an air line or electric depth gauge to measure drawdown, static level, and pumping level (MP).	Verify that each active well has an air line or electric depth gauge to measure draw- down, static level, and pumping level. (1)(4) (NOTE: This MP is drawn from AFI 32-1067, para 6.)	
13-25. DOD water systems must meet specific requirements concerning positive pressure and maintenance practices (FGS-Turkey 3-1.F through 3-1.H).	 Verify that a continuous positive pressure is maintained in the water distribution system. (2)(4) Verify that there is an effective cross connection control and backflow prevention program. Verify that the water distribution operation and maintenance practices include: maintenance of a disinfectant residual throughout the water distribution system (except where an effective ultraviolet or ozone disinfectant process is used) proper repair and replacement of mains procedures (including disinfection and bacteriological testing) implementation of an effective annual water main flushing program proper operation and maintenance of storage tanks and reservoirs maintenance of distribution system components (including hydrants and valves). 	
13-26. Installations must conduct sanitary surveys of the water system (FGS-Turkey 3-1.D).	Verify that surveys of the water system, including a review of required water quality analyses, are conducted at least annually and as warranted. (1)(2) Verify that off-installation surveys are coordinated with the appropriate Turkish authorities.	
13-27. Installations must conduct vulnerability assessments (FGS-Tur- key 3-1.N).	Verify that the installation has conducted a vulnerability assessment. (1)(2)	

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
13-28. Installations must use only lead-free pipe, solder, flux, and fittings when installing or repair- ing water systems and plumbing systems for drinking water (FGS-Tur- key 3-1.K and AFI 32- 1067, para 12.4).	Verify that only lead-free materials (see definition) are used. (2)		
Water Quality Standards	(NOTE: These requirements apply regardless of whether the installation produces or purchases water.)		
13-29. Compliance with water quality standards must be demonstrated by independent testing or validated supplier testing (FGS-Turkey 3-2).	Verify that the installation, regardless of whether it produces or purchases water, demonstrates compliance with applicable water quality standards by independent testing or validated supplier testing.		
13-30. DOD water systems must meet specific MCL and testing requirements for total coliform bacteria (FGS-Turkey 3-2.A).	Verify that PWSs have no more than 5 percent positive samples for the presence of total coliforms per month for a system examining 40 or more samples per month. (2)(4)		
	Verify that PWSs have no more than one positive sample for the presence of total coliforms per month when a system analyzes less than 40 samples per month.		
	(NOTE: The MCL for total coliforms is exceeded whenever a routine sample is pos- itive for fecal coliforms or <i>Escherichia coli</i> (<i>E. coli</i>) or when any repeat sample is positive for total coliforms.)		
	Verify that each system has a written, site-specific monitoring plan and collects rou- tine samples according to the schedule in Table 13-1.		
	Verify that systems with initial samples testing positive for total coliforms collect repeat samples as soon as possible, preferably on the same day.		
	Verify that repeat samples are taken at the same tap as the original sample and that an upstream and a downstream sample are taken in the vicinity of the tap.		
	Verify that any additional required repeat sampling is performed according to local medical or HQ U.S. Air Force - Europe (USAFE) guidance.		
	Verify that monitoring continues until total coliforms are no longer detected.		

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
13-30. (continued)	Verify that, when routine or repeat samples are positive for total coliforms, they ar tested for fecal coliforms or <i>E. coli</i> .		
	(NOTE: Fecal-type testing can be foregone on a total coliform positive sample fecal coliforms or <i>E. coli</i> are assumed to be present.)		
	Verify that, if the system has exceeded the MCL, HQ USAFE and installation pe sonnel (U.S. and Turkish) are notified no later than the end of the next business da that an acute risk to public health may exist.		
13-31. DOD water systems must meet specific	Verify that the parameters in water distributed to end users do not exceed the limit tions in Table 13-2. (2)(4)		
requirements with regard to inorganic chemical parameters and monitor-	Verify that systems are monitored for inorganic chemicals at the frequency set Table 13-3.		
ing (FGS-Turkey 3-2.B).	Verify that, if a system is out of compliance, HQ USAFE and installation personn (U.S. and Turkish) are notified as soon as possible but no later than 14 days after receipt of test results.		
	(NOTE: If the installation is only monitoring annually on the basis of a waiver, must immediately increase monitoring in accordance with Table 13-4 until author ties determine that the system is reliable and consistent and remedial actions as completed.)		
13-32. Installations that fluoridate their water	Verify that the fluoride content of drinking water does not exceed the MCL of 1 mg/L given in Table 13-2. (2)(4)		
must meet specific requirements (FGS-Tur- key, 3-2.C).	Verify that fluoride monitoring involves collecting one treated water sample at the entry point to the distribution system annually for surface water systems and one every 3 yr for groundwater systems.		
	(NOTE: Daily monitoring is recommended for systems practicing fluoridation usin the criteria in Table 13-5.)		
	Verify that, if a system is out of compliance, HQ USAFE and installation personne (U.S. and Turkish) are notified as soon as possible but no later than 14 days after receipt of test results.		

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997		
13-33. DOD water sys-	Verify that the concentration of lead does not exceed 0.015 mg/L. (2)(4)		
tems must meet specific standards for lead and	Verify that the concentration of copper does not exceed 1.3 mg/L.		
copper action levels and reporting requirements when these levels are exceeded (FGS-Turkey 3- 2.D).	(NOTE: Actions such as corrosion control treatment, public education, and removal of lead service lines are triggered if the above lead and copper action levels are exceeded in more than 10 percent of all sampled taps.)		
2.0).	Verify that monitoring is carried out in accordance with Table 13-6.		
	Verify that sampling sites selected are as outlined in Table 13-6.		
	Verify that high risk sampling sites are targeted by conducting a materials evaluation of the distribution system.		
	Verify that, if an action level is exceeded, additional water samples are collected as specified in Table 13-6.		
	Verify that optimal corrosion control treatment is pursued.		
	Verify that, if action levels are exceeded after implementation of applicable corrosion control and source water treatment, lead service lines are replaced if it is lead service lines that are causing the excess.		
	Verify that HQ USAFE and installation personnel (U.S. and Turkish) are notified within 14 days when an action level is exceeded.		
	Verify that an education program for installation personnel (including U.S. and host nation) is implemented within 60 days.		
13-34. Installations must notify their users about	Verify that the installation provides public notification concerning the following: (2)		
lead in drinking water systems (FGS-Turkey 3- 1.K).	 the lead content of materials used in distribution or plumbing systems the corrosivity of water that has caused leaching remedial actions that may be taken. 		
	(NOTE: This requirement appears to apply regardless of whether or not the action level for lead has been exceeded.)		
13-35. DOD water systems must meet specific requirements with regard	Verify that synthetic organic chemicals in water distributed to people does not exceed the limitations outlined in Table 13-7. (2)(4)		
to synthetic organics (FGS-Turkey 3-2.E).	Verify that systems are monitored for synthetic organics according to the schedule in Table 13-4.		

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
13-35. (continued)	Verify that, if the system is out of compliance, HQ USAFE and installation personn (U.S. and Turkish) are notified as soon as possible, but no later than 14 days after the receipt of test results.	
	(NOTE: When the MCLs for synthetic organic chemicals are exceeded, the install tion will begin immediate quarterly monitoring and will increase quarterly monito ing if the level of any contaminant is at its detection limit and must continue until the IC determines the system is reliable and consistent, and any necessary remedial me sures are implemented.)	
13-36. DOD water systems must meet specific requirements with regard to total trihalomethanes	Verify that PWS or NTNC systems that add a disinfectant (oxidant, such as chlorin chlorine dioxide, chloramines, or ozone) to any part of the treatment process do n exceed an MCL of 0.10 mg/L for total trihalomethanes in drinking water. (2)	
(FGS-Turkey 3-2.F).	Verify that systems that add a disinfectant monitor for total trihalomethanes as ou lined in Table 13-8.	
	Verify that, if the systems exceed the MCL for total trihalomethanes, HQ USAF and installation personnel (U.S. and Turkish) are notified as soon as possible, but r later than 14 days after the receipt of the test results, and that remedial measures a undertaken.	
13-37. DOD water systems must meet specific	Verify that PWS and NTNC systems meet the MCLs for radionuclides and that monitoring is performed as outlined in Table 13-9. (2)(4)	
requirements with regard to radionuclides (FGS- Turkey 3-2.G).	Verify that, if the average annual MCL for gross alpha activity, total radium, or grobeta is exceeded, HQ USAFE and installation personnel (U.S. and Turkish) and the public are notified as soon as possible, but no later than 30 days after receipt of the test results.	
	(NOTE: After a violation of an MCL for radionuclides, monitoring will continu (monthly for gross beta, quarterly for gross alpha) until remedial actions are com- pleted and the average annual concentration no longer exceeds the MCL.)	
	Verify that, if any gross beta MCL is exceeded, the major radioactive components as identified.	
13-38. Installations must test DOD PWS filtered	Verify that the installation tests PWS filtered water for turbidity daily. (2)(4)	
waters daily for turbidity and must meet a specific MCL for turbidity (FGS-	Verify that the monthly average of daily samples does not exceed 1 Nephelometr Turbidity Unit (NTU) in more than 5 percent of the samples.	
Turkey 3-2.I).	Verify that the average of two consecutive days does not exceed 5 NTU.	

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP		
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997	
13-38. (continued)	Verify that, if the MCL for turbidity is exceeded, HQ USAFE and installation per sonnel (U.S. and Turkish) are notified as soon as possible, but no later than 14 day after receipt of test results.	
13-39. Installations must periodically monitor DOD NPWSs for total coliforms and disinfectant residuals (FGS-Turkey 3-2.J).	Determine whether the installation operates an NPWS. (2)(4) Verify that the installation periodically monitors (as a minimum) for total coliforms and disinfectant residuals.	
13-40. DOD water systems must meet additional specific requirements (FGS-Turkey 3-2.L).	Verify that installation water systems meet the following standards: (1)(2)(4) pH 6.5 - 9.2	
	Color Taste and odor Evaporative residue	Normal, odorless No more than 1500 mg/L
Disinfection and Filtration		
13-41. Installations that use surface water or GWUDISW to produce	 (1)(2)(3) Verify that the installation meets the surface water treatment requirements specified in Table 13-10. 	
potable water must con- form to certain treatment requirements (FGS-Tur- key 3-1.E and 3-2.H).		
13-42. Installations that use a groundwater source	Determine whether the installation's water supply is groundwater. $(1)(2)(3)$	
as their supply of drinking water must disinfect the supplies (FGS-Turkey 3- 1.E).	Verify that, at a minimum, groundwater supplies are disinfected.	

REVIEWER CHECKS: August 1997 that the drinking water at CDCs is sampled monthly. (2) that bacteriological sampling is accomplished monthly. E: Chemical sampling is generally accomplished once every 3 yr.) that BES and the CDC Director coordinate the following: (2)
that bacteriological sampling is accomplished monthly. E: Chemical sampling is generally accomplished once every 3 yr.)
that bacteriological sampling is accomplished monthly. E: Chemical sampling is generally accomplished once every 3 yr.)
that BES and the CDC Director coordinate the following: (2)
letermine whether <i>Lead Contamination Control Act</i> (LCCA) sampling was horough and complete eview records to ensure that identified corrective actions to remove sources of ead contamination were completed ensure that Lead Assessment Program analytical results for drinking water lead concentrations are on file in the CDC administrative office.
that BES is notified prior to the opening of a new CDC facility and whe ing lines or fixtures are added or replaced. (2)
that taps with lead concentrations exceeding 20 parts per billion (ppb) ar out of service and resampled. (2) that remediation is accomplished when successive sample results exceed 2
that BES performs sampling in accordance with LCCA guidance when meta terials are used in CDC plumbing systems. (2)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP				
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997			
Recordkeeping and Notification Requirements				
13-48. Water treatment logs must be prepared	Verify that operators prepare AF Form 1461, <i>Water Utility Operating Log (General)</i> . (4)			
(AFI 32-1067, para 10.1.1).	Verify that, if the water requires more than minor treatment, AF Form 1460, Water Utility Operating Log (Supplemental), is prepared.			
13-49. Water treatment facilities must manage	Verify that daily operating logs and laboratory records are prepared for in-plant use. (4)			
logs and reports in accor- dance with specific requirements (AFI 32- 1067, paras 10.1).	(NOTE: Computer files and printouts like the Work Information Management System (WIMS) operating logs are acceptable if they have the same information as the forms.)			
	Verify that permanent records of the printouts are kept as if they were forms.			
	Verify that backup copies of the active computer files are maintained to protect them against accidental loss.			
	Verify that operating logs or computer files are posted daily (covering one month's operation) in neat legible form.			
	Verify that the original form or computer printout is kept for the BCE permanent file.			
13-50. Specific records must be maintained for wells and pumping stations (AFI 32-1067, para 10.1.2 and 10.2).	Verify that AF Form 996, Well Data, is completed and a file kept for each well, beginning with initial construction. (4)			
	Verify that the information is updated after completing a repair, redeveloping a well, or conducting a performance test.			
	Verify that the following daily operating records are maintained for wells and pump- ing stations:			
	 AF Form 997, Daily Well Activity Record AF Form 998, Daily Pumping Station Activity Record - Water. 			

	COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
13-51. Facilities should establish local procedures for preparing coordinating, reviewing, and approving logs and reports (MP).	Verify that water treatment and wastewater treatment facilities establish local proce dures for preparing coordinating, reviewing, and approving logs and reports. (4) (NOTE: This MP is found in AFI 32-1067, para 10.1.3.)
13-52. Specific records must be maintained for DOD water systems (FGS-Turkey 3-1.L).	Verify that records of chemical analyses are kept for 10 yr. (2) Verify that records showing monthly operating reports are maintained for at leas 3 yr. Verify that records of bacteriological results are maintained for at least 5 yr.
13-53. Specific physical facility information must be developed, maintained, and kept available at treatment facilities (AFI 32-1067, para 10.2).	 Verify that the following information is developed, maintained, and kept available the treatment facilities: (1)(4) required plant-specific O&M manuals and applicable AF publications system operating instructions with single-line drawings, including operation and compliance monitoring procedures up-to-date system as-built drawings along with other system plans and blue prints, including hydraulic water elevation profiles and a drawing of the entitic collection and distribution systems AF Form 996, <i>Well Data</i> shop drawings, catalogue cuts, and any other equipment information or literature.
13-54. Installations must develop and maintain effective maintenance plans that address spe- cific topics (AFI 32- 1067, para 10.3).	 Verify that the installation develops and maintains effective maintenance plans the include: (1) a recurring work schedule a maintenance history for each major piece of equipment an essential spare parts list, with spare parts stocked at the treatment facility of other accessible location a long-range maintenance and improvement plan.
13-55. Installations must document actions taken to correct breaches of water quality criteria (FGS-Turkey 3-1.M).	Verify that the installation documents corrective actions taken to correct breaches of criteria. (1)(2)(4)(6) Verify that such documentation is maintained for at least 3 yr.

	COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997			
13-56. Required notifications must meet specific content standards (FGS-Turkey 3-3).	 Verify that the public notices are clear and understandable and address the following topics: (1)(2)(4) explanation of the violation any potential adverse health effects the population at risk the steps that the system is taking to correct the violation the necessity for seeking alternative water supply, if any any preventive measures the consumer should take until the violation is corrected. (NOTE: HQ USAFE coordinates notification of host authorities where off-installation populations are at risk.) 			
13-57. Installations must notify the MAJCOM/CE when the potable water supply becomes contaminated (AFI 32-1066, para 6).	Verify that MAJCOM/CE is notified when the potable water supply becomes con- taminated. (1)			
Alternative Water Supplies				
13-58. DOD installations must use only approved alternative water sources, if the use of alternative sources is necessary (FGS-Turkey 3-2.K).	Determine whether the installation uses alternative water sources. (1)(2) Verify that alternative water sources have approval from the IC. (NOTE: This requirement includes POE and POU treatment devices, as well as bot- tled water supplies.)			
Underground Injection Control				
13-59. Underground injection must be carried out in such a way that underground water resources are protected (FGS-Turkey 3-1.I).	Verify that the installation regulates underground injection so as to protect under- ground water sources. (2)(3) Verify that, at a minimum, the installation conducts monitoring to determine the effects of any underground injection wells on nearby groundwater supplies.			

	COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997
Aquifers	
13-60. Installations must protect water supply aquifers from contamination (FGS-Turkey 3-1.C).	Determine whether the installation is located by a water supply aquifer. (2)(3) Verify that the aquifer is protected by suitable placement and construction of wells, siting and maintenance of septic systems, onsite treatment units, and appropriate land use management.
TRAINING AND CERTIFICATION	
13-61. Operators of water treatment plants and wastewater treatment plants must meet training requirements (AFI 32-1067, para 8.1).	 Verify that new operators receive classroom training and extensive supervised on-the-job training before being assigned to critical tasks. (3)(4) Verify that experienced personnel receive technical refresher courses and upgrade training. (NOTE: Training requirements may be met by one of the following means: AF training available through technical schools, career development correspondence courses, and on-the-job training civilian training courses available at educational institutions, government agencies, and professional and technical associations correspondence courses from accredited institutions for operators in areas that
13-62. Supervisors at water treatment plants and wastewater treatment plants must meet specific requirements with regard to safety training for all employees (AFI 32-1067, para 9).	 do not have local resident courses.) Verify that all employees are familiar with the safety instructions in the following documents, as applicable: (3)(4) AFR 91-26, Maintenance and Operation of Water Supply, Treatment, and Distribution Systems AFM 91-32, Operation and Maintenance of Domestic and Industrial Wastewater Systems Air Force Occupational Safety and Health (AFOSH) Standard 127-10, Civil Engineering AFOSH Standard 127-25, Confined Spaces AFOSH Standard 161-21, AF Hazard Communication Standard. Verify that the supervisor maintains current BES baseline and annual industrial hygiene survey reports. (NOTE: The supervisor should use these reports to train workers on occupational health hazards.) Verify that supervisors make safety instructions readily available to all operating personnel.

	COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Republic of Turkey ECAMP			
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: August 1997			
13-62. (continued)	Verify that supervisors train facility personnel on safety procedures and equipment and enforce their proper use at all times.			
	(NOTE: Once trained, individual workers are personally responsible for following safe procedures.)			
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Total Coliform Monitoring Requirements

(FGS-Turkey, Table 3-2)

Population Served per Month	Minimum Number of Samples per Month
25 to 1000 ¹	1
1001 to 2500	2
2501 to 3300	3
3301 to 4100	4
4101 to 4900 ²	5
4901 to 5800	6
5801 to 6700	7
6701 to 7600	8
7601 to 8500	9
8501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390

(continued)

Table 13-1 (continued)

Population Served per Month	Minimum Number of Samples per Month
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

- ¹ A non-community water system using groundwater and serving 1000 or fewer people may monitor once in each calendar quarter during which the system provides water, provided that a sanitary survey conducted within the last 5 yr shows the system is supplied solely by a protected groundwater source and free of sanitary defects.
- ² Systems serving fewer than 4900 people which use groundwater and collect samples from different sites may collect all samples on a single day. All other systems must collect samples at regular intervals throughout the month.

Inorganic Chemicals MCLs

(FGS-Turkey, Table 3-3)

Contaminant	MCL, mg/L
Arsenic	0.05
Asbestos ¹	7 million fibers/L (longer than 10 μm)
Barium	1.0
Alkyl Benzosulfonate	1.0
Cadmium ¹	0.010
Chloride	600.0
Residual Chloride	0.5
Chromium ¹	0.05
Calcium •	200.0
Cyanide	0.01
Fluoride ²	1.5
Iron	1.0
Magnesium	150.0
$Mg + Na_2SO_4$	1000.0
Manganese	1.5
Mercury ¹	0.002
Nitrate ³	10.0 (as N)
Nitrite ³	1.0 (as N)
Total Nitrite and Nitrate ³	10.0 (as N)
Selenium ¹	0.01
Sodium ⁴	· · · · · · · · · · · · · · · · · · ·
Sulphate	400.0
Lead	0.05
Copper	1.3
Silver	0.05
Zinc	15.0

¹ MCLs apply to CWS and NTNC systems.

² MCL applies only to CWS. See checklist item 13-32 above for additional fluoride requirements.

³ MCLs apply to CWS, NTNC, and TNC systems.

⁴ No MCL established. Monitoring is required so concentration levels can be made available.)



Inorganics Monitoring Requirements

(FGS-Turkey, Table 3-4)

Contaminant	Groundwater Baseline Requirement ¹	Surface Water Baseline Requirement	Trigger That Increases Monitoring ⁵	Waivers
Alkyl Benzosulfonate	1 sample/yr	Annual sample	> MCL	
Barium	1 sample/yr	Annual sample	> MCL	
Cadmium	1 sample/yr	Annual sample	> MCL	
Calcium	1 sample/yr	Annual sample	> MCL	
Chloride	1 sample/yr	Annual sample	> MCL	
Chromium	1 sample/yr	Annual sample	> MCL	
Chloride (Residue)	1 sample/yr	Annual sample	> MCL	
Cyanide	1 sample/yr	Annual sample	> MCL	
Fluoride	1 sample/yr	Annual sample	> MCL	
Iron	1 sample/yr	Annual sample	> MCL	
Magnesium	1 sample/yr	Annual sample	> MCL	
$Mg + Na_2SO_4$	1 sample/yr	Annual sample	> MCL	
Manganese	1 sample/yr	Annual sample	> MCL	
Mercury	1 sample/yr	Annual sample	> MCL	
Selenium	1 sample/yr	Annual sample	> MCL	
Sodium	1 sample/yr	Annual sample		
Sulphate	1 sample/yr	Annual sample	> MCL	
Zinc	1 sample/yr	Annual sample	> MCL	
Asbestos	1 sample/9 yr	1 sample/9 yr	> MCL	Yes ²
Nitrate	Annual sample	Quarterly	> 50% MCL ⁶	Yes ³
Nitrite	Annual sample	Quarterly	> 50% MCL ⁶	Yes ⁴
Corrosivity ⁷	Once	Once		

¹ Samples must be taken as follows: groundwater systems must take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment and at a consumer's tap; surface water systems must take at least one sample at a consumer's tap and every entry point to the distribution system after any application of treatment or in the distribution system at a point that is representative of each source after the treatment.

 2 Necessity for analysis is predicated upon a vulnerability assessment conducted by the PWS.

³ The HQ USAFE may reduce repeat sampling frequency of surface water systems to an annual sample if, after 1 yr, the parameter is less than 50 percent of the annual sample MCL.

- ⁴ The HQ USAFE may reduce repeat sampling frequency to one sample if the parameter is 50 percent of MCL.
- ⁵ Increased quarterly monitoring requires a minimum of two samples per quarter for groundwater systems and at least four samples per quarter for surface water systems.
- ⁶ Increased quarterly monitoring must be undertaken for nitrate and nitrite if a sample is less than 50 percent of the MCL.
- ⁷ PWSs must be analyzed within 1 yr of the effective date of country specific final governing standards to determine the corrosivity entering the distribution system.

Synthetic Organic Chemical Monitoring Requirements

(FGS-Turkey, Table 3-8)

Contaminant	Base Requirement ¹		Trigger for more	Waivers
	Groundwater	Surface water	monitoring ⁶ wai	ring ⁶ vvalvers
VOCs	Quarterly	Quarterly	> 0.0005	Yes ^{2,3}
Pesticides/ Polychlorinated biphenyls (PCBs)	Quarterly	Quarterly	> Detection limit ⁵	Yes ^{3,4}

¹ Groundwater systems must take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment and at a consumer's tap; surface water systems must take at least one sample at a consumer's tap and at every entry point to the distribution system after any application of treatment or in the distribution system at a point that is representative of each source after treatment.

² Repeat sampling frequency may be reduced to annually after 1 yr of no detection and to every 3 yr after three rounds of no detection.

³ Monitoring frequency may be reduced, if warranted, based on a vulnerability assessment by the PWS.

⁴ Repeat sampling frequency may be reduced to the following after one round of no detection:

- systems greater than 3300 may be reduced to two samples/yr every 3 yr
- systems less than 3300 may be reduced to one sample every 3 yr.

⁵ Detection limits noted in Table 13-7.

⁶ Increased monitoring requires a minimum of two samples per quarter for groundwater systems and at least four samples per quarter for surface water systems.

(NOTE: Compliance is based on an annual running average for each sample point for systems monitoring quarterly or more frequently. For systems monitoring annually or less frequently, compliance is based on a single sample, unless HQ USAFE requests a confirmation sample. A system is out of compliance if any contaminant exceeds the MCL.)



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Recommended Fluoride Concentration at Different Temperatures
(FGS-Turkey, Table 3-5)

Annual Average of Max. Daily Air Temperatures (^o F)	Control Limits (mg/L)			
	Lower	Optimum	Upper	
50.0 - 53.7	0.9	1.2	1.7	
53.8 - 58.3	0.8	1.1	1.5	
58.4 - 63.8	0.8	1.0	1.3	
63.9 - 70.6	0.7	0.9	1.2	
70.7 - 79.2	0.7	0.8	1.0	
79.3 - 90.5	0.6	0.7	0.8	

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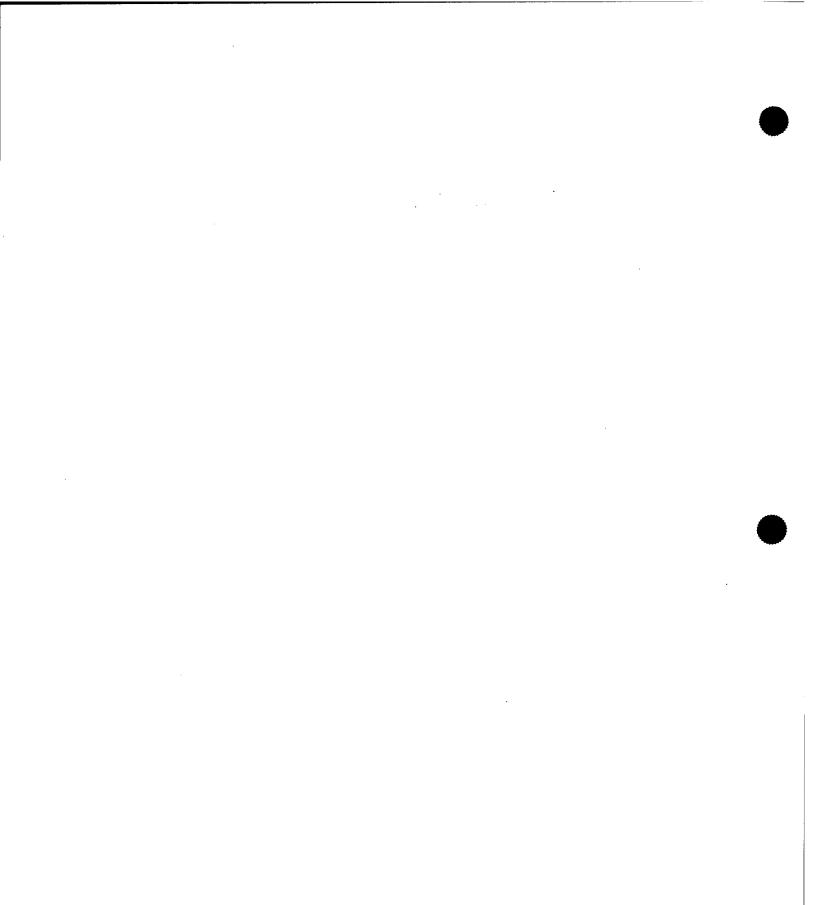
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Monitoring Requirements for Lead and Copper Water Quality Parameters

Population Served	No. of Sites for Standard Monitoring ^{1,2}	No. of Sites for Reduced Monitoring ³	No. of Sites for Water Quality Parameters ⁴
> 100,000	100	50	25
10,001-100,000	60	30	10
3,301-10,000	40	20	3
501-3,300	20	10	2
101-500	10	5	1
< 100	5	5	1

(FGS-Turkey, Table 3-6)

- 1. Monitor every 6 mo for lead and copper.
- 2. Sampling sites must be based on a hierarchal approach. For CWS, priority must be given to: single family residences that contain copper pipe with lead solder installed after 1982, contain lead pipes, or are served by lead service lines; then, structures, including multifamily residences, with the foregoing characteristics; and finally, residences and structures with copper pipe with lead solder installed before 1983. For NTNC systems, sampling sites must consist of structures that contain copper pipe with lead solder installed after 1982, contain lead pipes, and/or are served by lead service lines. First draw samples must be collected from a cold water kitchen or bathroom tap; nonresidential samples must be taken at an interior tap from which water is typically drawn for consumption.
- 3. Monitor annually for lead and copper if action levels are met during each of two consecutive 6-mo monitoring periods. Annual sampling must be conducted during the 4 warmest months of the year.
- 4. Samples must be representative of water quality throughout the distribution system and include a sample from the entry to the distribution system. Samples must be taken in duplicate for pH, alkalinity, calcium, conductivity or total dissolved solids, and water temperatures to allow a corrosivity determination (via a Langelier saturation index or other appropriate saturation index); additional parameters are orthophosphate when a phosphate inhibitor is used and silica when a silicate inhibitor is used.



Synthetic Organic Chemical MCLs (FGS-Turkey, Table 3-7)

Synthetic Organic Chemical	MCL, mg/L	Detection Limit, mg/L
Pest	icides, PCBs	,,
Alachor	0.002	0.0002
Aldicarb	0.003	0.0005
Aldicarb sulfone	0.003	0.0008
Aldicarb sulfoxide	0.003	0.0005
Atrazine	0.003	0.0001
Carbofuran	0.04	0.0009
Chlordane	0.002	0.0002
2,4-D	0.1	0.0001
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0.00002
Endrin	0.0002	0.00002
Ethylene dibromide (EDB)	0.00005	0.00001
Heptachlor	0.0004	0.00004
Heptachlorepoxide	0.0004	0.00002
Lindane	0.0002	0.00002
Methoxychlor	0.04	0.0001
PCBs (as decachlorobiphenyls)	0.0005	0.0001
Pentachlorophenol	0.001	0.00004
Toxaphene	0.003	0.001
2,4,5-TP (Silvex)	0.01	0.0002
	VOCs	
Benzene	0.005	0.0005
Carbon tetrachloride	0.005	0.0005
o-Dichlorobenzene	0.6	0.0005
cis-1,2-Dichloroethylene	0.07	0.0005
trans-1,2-Dichloroethylene	0.1	0.0005
1,1-Dichloroethylene	0.007	0.0005

(continued)

Synthetic Organic Chemical	MCL, mg/L	Detection Limit, mg/L	
1,1,1-Trichloroethane	0.01	0.0005	
1,2-Dichloroethane	0.005	0.0005	
1,2-Dichloropropane	0.005	0.0005	
Ethylbenzene	0.7	0.0005	
Monochlorobenzene	0.1	0.0005	
para-Dichlorobenzene	0.075	0.0005	
Styrene	0.1	0.0005	
Tetrachloroethylene	0.005	0.0005	
Trichloroethylene	0.005	0.0005	
Toluene	1.0	0.0005	
Vinyl chloride	0.002	0.0005	
Xylene (total)	10	0.0005	
Ot	her Organics		
Acrylamide	treatment technique ¹		
Epihydrochlorin	treatment technique ¹		
Phenolic matter	0.002	0.0005	

Table 13-7 (continued)

¹ Best available treatment technique relates to polymer addition practices.

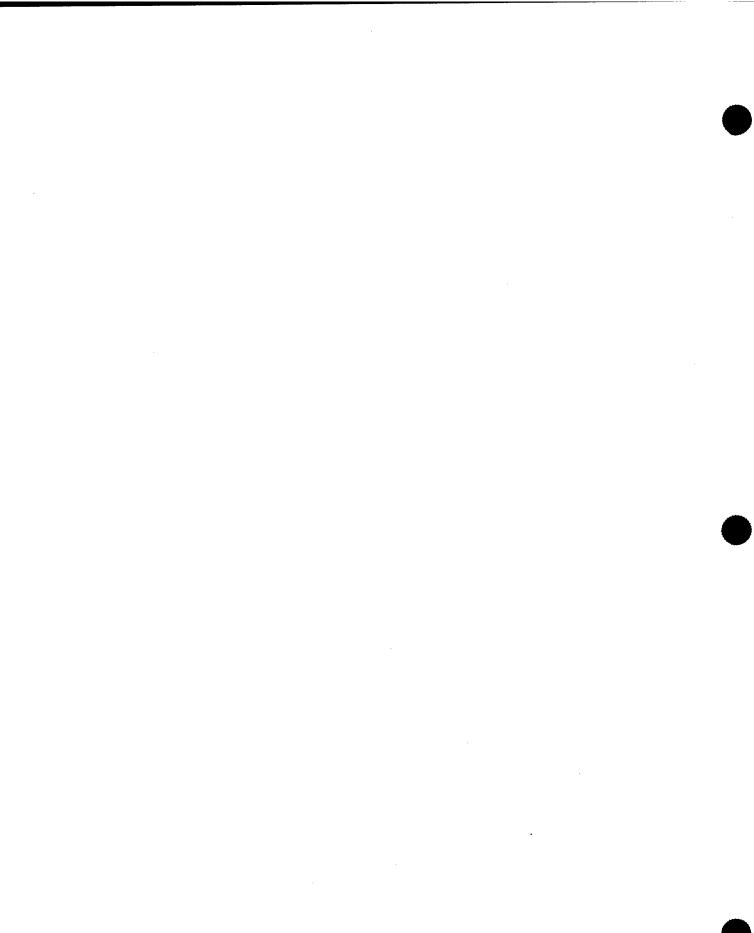
Total Trihalomethane Monitoring Requirements

Population Served by System	Number of Samples per Distribution System	Frequency of Samples	Type of Sample
10,000 or more	4	Quarterly Treated	
Less than 10,000	1	Annually	Treated

(FGS-Turkey, Table 3-9)

NOTES:

- 1. One of the samples must be taken at a location in the distribution system reflecting the maximum residence time of water in the system. The remaining samples must be taken at representative points in the distribution system. Systems using groundwater sources that add a disinfectant should have one sample analyzed for maximum total trihalomethane potential. Systems that employ surface water sources, in whole or in part, and that add a disinfectant should have one sample analyzed for total trihalomethanes.
- 2. Compliance is based upon a running yearly average of quarterly samples for systems serving more than 10,000 people. Noncompliance exists if the average exceeds the MCL. For systems serving less than 10,000 people and having a maximum total trihalomethane potential sample exceeding the MCL, a sample for total trihalomethanes must be analyzed. If the total trihalomethane sample exceeds the MCL, noncompliance results.



MCL Contaminant	MCL, pCi/L		
Gross Alpha ¹	15		
Combined Radium-226 and -228	5		
Gross Beta ²	50		
Strontium-90	8		
Tritium	20,000		
Radon ³	300		

Radionuclide MCLs and Monitoring Requirements (FGS-Turkey, Table 3-10)

Monitoring Requirements

For gross alpha activity and radium-226 and radium-228, systems must be tested once every 4 yr. Testing will be conducted using an annual composite of four consecutive quarterly samples or the average of four samples obtained at quarterly intervals at a representative point in the distribution system.

Gross alpha only may be analyzed if activity is less than or equal to 5 pCi/L. Where radium-228 may be present, radium-226 and/or radium-228 analyses should be performed when activity is greater than 2 pCi/L. If the average annual concentration is less than half the maximum contaminant level, analysis of a single sample may be substituted for the quarterly sampling procedure. A system with two or more sources having different concentrations of radioactivity must monitor source water in addition to water from a free-flowing tap. If the installation introduces a new water source, these contaminants must be monitored within the first year after introduction.

- ¹ Gross alpha activity includes radium-226, but excludes radon and uranium.
- ² Gross beta activity refers to the sum of beta particle and photon activity from manmade radionuclides. If gross beta exceed the MCL, i.e., equal a dose of 4 millirem/yr, the individual components must be determined.
- ³ MCL for radon is proposed to be effective in 1995.

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Surface Water Treatment Requirements

(FGS-Turkey, Table 3-1)

1. Unfiltered Systems

- a. Systems that use unfiltered surface water or groundwater sources under the direct influence of surface water must analyze the raw water for total coliforms or fecal coliforms at least weekly and for turbidity at least daily for a minimum of 1 yr. If the total coliforms and/or fecal coliforms exceed 100/100 milliliters (mL) and 20/100 mL, respectively, appropriate filtration must be applied. Appropriate filtration must also be applied if turbidity exceeds 1 NTU.
- b. Disinfection must achieve at least 99.9 percent inactivation of Giardia lamblia cysts and 99.99 percent inactivation of viruses by meeting applicable CT values.
- c. Disinfection systems must have redundant components to ensure uninterrupted disinfection during operational periods.
- d. Daily disinfectant residual monitoring immediately after disinfection is required. Disinfectant residual measurements in the distribution system must be made weekly.
- e. Water in a distribution system with a heterotrophic bacteria concentration less than or equal to 500/mL, measured as heterotrophic plate count, is considered to have a detectable disinfectant residual.
- f. If disinfectant residuals in the distribution system are undetected in more than 5 percent of monthly samples for 2 consecutive months, appropriate filtration must be implemented.

2. Filtered Systems

- a. The turbidity of filtered water must be monitored at least daily.
- b. The turbidity of filtered water must not exceed 1 NTU in 95 percent of the analyses in a month, with a maximum of 5 NTU.
- c. Disinfection requirements are identical to those for unfiltered systems.

INSTALLATION:	COMPLIANCE CATEGORY:	DATE:	REVIEWER (S
	WATER QUALITY MANAGEMENT Turkey ECAMP		
STATUS			
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