AD-A271 226

USACERL Special Report EC-93/05
September 1993

US Army Corps
of Engineers
Construction Engineering
Research Laboratories

Environmental Compliance Assessment System (ECAS)

U.S. Army

In response to the growing number of environmental laws and regulations worldwide, the U.S. Army has adopted an environmental compliance program that identifies compliance problems before they are cited as violations by the U.S. Army Environmental Protection Agency (USEPA).

Beginning in 1985, Major Army Commands (MACOMs) were required to conduct comprehensive environmental assessments at all installations on a 4-year cycle. The installations must also conduct a mid-cycle internal assessment. Because each MACOM was developing a separate assessment system, the Army mandated, through Army Regulation 200-1, one unified Army-wide assessment mechanism. The resulting system combines Federal, Department of Defense (DOD), and Army environmental regulations, along with good management practices and risk-management information, into a series of checklists that show (1) legal requirements and (2) which specific items or operations to review. Each assessment protocol lists a point of contact to help assessors review the checklist items as effectively as possible.

The Environmental Compliance Assessment System (ECAS) manual incorporates existing checklists from USEPA and private industry.

The system has been tested at several Army installations. The manual is updated continually to address new environmental compliance laws and regulations.

DTIC
ELECTE
OCT 21 1993
S B D

93-25342

Approved for public release; distribution is unlimited.

93 10 20 073

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave Blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	September 1993	Draft

4. TITLE AND SUBTITLE
Environmental Compliance Assessment System (ECAS)

5. FUNDING NUMBERS
MIPR
1213, dated 4 December 1992

6. AUTHOR(S)
Donna J. Schell and Tina M. Beckler

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army Construction Engineering Research Laboratories (USACERL)
P.O. Box 9005
Champaign, IL 61826-9005

8. PERFORMING ORGANIZATION REPORT NUMBER
SR-EC-93/05

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
COMMAND USAEC
ATTN: SFIM-AEC-ECC
APG-EA, MD 21010-5401

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
Copies are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

In response to the growing number of environmental laws and regulations worldwide, the U.S. Army has adopted an environmental compliance program that identifies compliance problems before they are cited as violations by the U.S. Army Environmental Protection Agency (USEPA).

Beginning in 1985, Major Army Commands (MACOMs) were required to conduct comprehensive environmental assessments at all installations on a 4-year cycle. The installations must also conduct a mid-cycle internal assessment. Because each MACOM was developing a separate assessment system, the Army mandated, through Army Regulation 200-1, one unified Army-wide assessment mechanism. The resulting system combines Federal, Department of Defense (DOD), and Army environmental regulations, along with good management practices and risk-management information, into a series of checklists that show (1) legal requirements and (2) which specific items or operations to review. Each assessment protocol lists a point of contact to help assessors review the checklist items as effectively as possible.

The Environmental Compliance Assessment System (ECAS) manual incorporates existing checklists from USEPA and private industry.

The system has been tested at several Army installations. The manual is updated continually to address new environmental compliance laws and regulations.

14. SUBJECT TERMS
Environmental Compliance Assessment System
ECAS
environmental compliance checklists

15. NUMBER OF PAGES
987

16. PRICE CODE

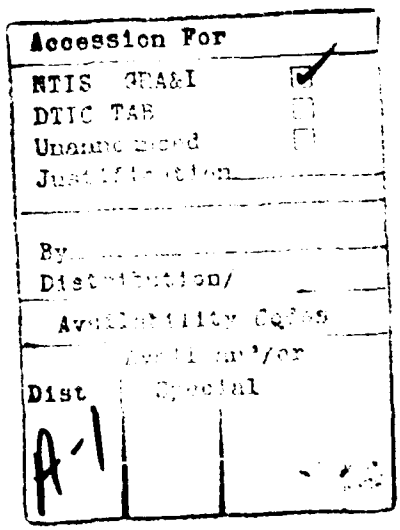
17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	SAR

FOREWORD

This work was performed for U.S. Army Environmental Center (USAEC), under military interdepartmental purchase request number 1213, dated 4 December 1992. The USAEC technical monitor was Curt Williams, SFIM-AEC-ECC.

The research was performed by the Environmental Compliance Modeling and Systems Division (EC) of the Environmental Sustainment Laboratory (EL), U.S. Army Construction Engineering Research Laboratories (USACERL). The Principal Investigator was Donna J. Schell, Environmental Protocol Team, CECER-ECP. Tina M. Beckler, CECER-ECP, was Associate Investigator. Dr. Diane K. Mann, CECER-ECP is Acting Team Leader. Dr. William D. Goran is Acting Chief, CECER-EC, and Dr. Edward W. Novak is Acting Chief, CECER-EL.

LTC David J. Rehbein is Commander of USACERL and Dr. L. R. Shaffer is Director.



NOTICE

This manual is intended as general guidance for personnel at certain U.S. Army installations. It is not, nor is it intended to be, a complete treatise on environmental laws and regulations. Neither the U.S. Government nor any agency thereof, nor 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 legal counsel.

ENVIRONMENTAL COMPLIANCE ASSESSMENT SYSTEM (ECAS) ASSESSMENT PROTOCOLS

INTRODUCTION

This manual provides the Environmental Compliance Assessment System (ECAS) protocols required by Army Regulation (AR) 200-1. These environmental assessment protocols are based on Federal environmental regulations and are to be supplemented locally using state and local environmental regulations that are applicable to U.S. Army installations and are more stringent than Federal regulations included in this manual. This manual, with local supplements, is intended to serve as the primary tool for conducting the environmental compliance evaluation phase of the ECAS process. Specifically, this manual:

1. Compiles applicable Federal, Department of Defense (DOD), and Army environmental regulations with Army operations and activities

2. Synthesizes environmental regulations, good management practices (GMPs), and risk management issues into consistent and easy to use checklists

3. Serves as an aid in the evaluation process and management action development phases of the ECAS.

This manual is divided into 17 sections (assessment areas). They are: Clean Air Act; Clean Water Act; Safe Drinking Water Act; Resource Conservation and Recovery Act, Subtitle C; Resource Conservation and Recovery Act, Subtitle D; Resource Conservation and Recovery Act, Subtitle I; Comprehensive Environmental Response, Compensation, and Liability Act / Superfund Amendment and Reauthorization Act and RCRA Corrective Actions; Toxic Substances Control Act; Federal Insecticide, Fungicide, and Rodenticide Act; National Historic Preservation Act and Cultural Resources; Natural Resources Management; National Environmental Policy Act; Asbestos Management Program; Noise Abatement; Radon Program; Environmental Program Management; Hazardous Materials Management.

The information in this manual applies to all Army installations and facilities in the United States and its territories.

The contents of this manual is up to date as of 17 August 1993.

Table of Contents

INTRODUCTORY SECTION

Section	Title	Page
1	Environmental Compliance Evaluation Process	vii
2	Previsit Questionnaire (Table 1)	ix
3	Site Evaluation	xxxiii
4	Finding Summary	xxxv
5	Explanation of Ratings	xxxvi
6	Sample Finding Summary	xxxvii
7	Using the ECAS Manual	xxxix
8	Manual Format	xli
9	Supplemental Information	xlii
10	Contact/Location Codes	xliii

PROTOCOL SECTION

Section	Title	Page
1	Clean Air Act	1-1
2	Clean Water Act	2-1
3	Safe Drinking Water Act	3-1
4	Resource Conservation and Recovery Act, Subtitle C	4-1
5	Resource Conservation and Recovery Act, Subtitle D	5-1
6	Resource Conservation and Recovery Act, Subtitle I	6-1
7	Comprehensive Environmental Response, Compensation, and Liability Act / Superfund Amendment and Reauthorization Act and RCRA Corrective Actions	7-1
8	Toxic Substances Control Act	8-1
9	Federal Insecticide, Fungicide, and Rodenticide Act	9-1
10	National Historic Preservation Act and Cultural Resources	10-1
11	Natural Resources Management	11-1
12	National Environmental Policy Act	12-1
13	Asbestos Management Program	13-1
14	Noise Abatement	14-1
15	Radon Program	15-1
16	Environmental Program Management	16-1
17	Hazardous Materials Management	17-1

1. ENVIRONMENTAL COMPLIANCE EVALUATION PROCESS:

The ECAS program management process can be divided into three distinct phases:

- Preevaluation activities.
- Site evaluation activities.
- Post evaluation activities.

This manual incorporates the first two phases of the program management process.

• Preevaluation Activities - Five key activities should be completed before an evaluation team begins the evaluation activities.

1. Complete Previsit Questionnaire. The purpose of the previsit questionnaire is to collect information that will familiarize the evaluation team with the installation and its operations so that they are able to review the applicable regulations and prepare a detailed evaluation schedule. The previsit questionnaire is an essential part of preevaluation activities for an external evaluation. It is also an excellent tool for ensuring that internal evaluation team members are starting from the same base of information. Table 1 contains a sample previsit questionnaire.

2. Define Evaluation Scope and Team Responsibilities. The installation or major command may wish to place special emphasis on certain protocols or to review additional areas not covered in the manual. These goals must be stated clearly so the evaluation can be planned properly. Additionally, the duration of the evaluation, appointment of team members by the Environmental Quality Control Commission (EQCC), and handling of tenants and offpost sites must be addressed. Finally, responsibilities for each of the protocols must be assigned to team members as appropriate.

3. Review Relevant Regulations. Once the evaluation scope and responsibilities are known, the evaluators should undertake a thorough review of relevant Federal, state, and local regulations affecting the installation. The applicable environmental regulations must be determined before evaluation begins. If not already available, checklist items for state and local requirements must be added to the checklists in the ECAS manual.

4. Develop Evaluation Schedule. The team should develop a detailed evaluation schedule that includes the activities planned for each day.

5. Review Evaluation Protocols. Each evaluator should know the regulatory requirements, schedule, and be familiar with the evaluation checklists that will be used.

2. PREVISIT QUESTIONNAIRE:

TABLE 1

ENVIRONMENTAL COMPLIANCE ASSESSMENT SYSTEMS (ECAS)

PREVISIT QUESTIONNAIRE (PVQ)

This questionnaire will provide background information necessary for the assessment team to plan and conduct an environmental compliance assessment. Additionally, it provides insight for properly designing the composition of expertise on the assessment team.

MACOM:_____
Name of Installation:_____
Environmental POC:_____
Telephone Number:_____

	YES	NO	N/A
Does the installation want the assessment team to provide the "optional package" (Appendix A of the report) of preparing the applicable 1383 exhibits, 4283 work orders, and first page of appropriate 1391's relative to the corrective actions?	—	—	—

A. Clean Air Act (CAA)

1. Does the installation have any air permits to maintain with state regulatory authority (i.e., boilers, pathological incinerators, operating or construction permits, paint spray booths, petroleum, oil, and lubricant (POL) tank vents, etc.)? Inclusively, list the types and number of each.	—	—	—

Type of Permit Quantity

_____ _____
_____ _____

2. Does the installation operate any central heating plants?		—	—	—
TYPE	NUMBER OF EACH			
a. Steam?	_____	—	—	—
b. Hot water?	_____	—	—	—
c. Coal-fired?	_____	—	—	—
d. Oil-fired?	_____	—	—	—

	YES	NO	N/A
TYPE NUMBER OF EACH			
e. Wood chips? _____, _____, _____			
f. Other fuel?_____	—	—	—
g. Approximate size of plant(s)?_____,_____,_____			
3. Does the installation operate any incinerators? (i.e., for classified documents, solid waste, etc.) Please list type and number.	—	—	—
Type Quantity _____ _____ _____ _____ _____ _____			
4. Does the installation engage in burning of Explosive Ordnance Disposal (EOD) materials (OB/OD operations)?	—	—	—
5. Does a RCRA Subpart X exists?	—	—	—
6. Does the installation operate fuel dispensing facilities?	—	—	—
How many ? _____			
7. Are field fuel dispensing operations performed?	—	—	—
How many? _____			
Range in size of operation? _____			
8. Are rapid aircraft refueling operations performed?	—	—	—
How many? _____			
Range in size of operation? _____			
9. Does installation operate maintenance shops?	—	—	—
TYPE QUANTITY			
Wheeled _____ Tracked _____ Aircraft _____			

	YES	NO	N/A
10. Please list any additional shop activities that generate any form of air pollution: (i.e., vehicle emission systems, ventilation systems for various operations, etc.)			
_____			
_____			
_____			
11. Are any hazardous or toxic air pollutants present in the installation's air emissions (i.e., beryllium, mercury, and vinyl chloride)?	—	—	—
12. Does the installation have a dry cleaning facility?	—	—	—
13. Does the installation use CFCs or Halons?	—	—	—
14. Are there any regulated vapor emission requirements for oil/water separators?	—	—	—
15. Is there a working management system in place that precludes violations from recurring in this media area?	—	—	—

B. Clean Water Act (CWA)

1. Does the installation have any National Pollutant Discharge Elimination (NPDES) and/or State Pollutant Discharge E'imination System (SPDES) permits?	—	—	—
2. Identify the types of discharges.			
a. Storm water runoff permits?	—	—	—
b. Drainage water from dredge and fill materials?	—	—	—
c. Wastewater treatment plant?	—	—	—
How many and what size? _____			
d. Process wastewater?	—	—	—
e. Heat/Power production cooling blowdown water?	—	—	—
f. Storm water runoff from fuel dispensing areas, airfields, and parking lots/aprons and maintenance facilities?	—	—	—
g. Vehicle wash facilities? How many? ____	—	—	—
h. Plating shop?	—	—	—
i. Does the installation maintain sedimentation holding ponds or seepage pits from vehicle/aircraft washing, maintenance shop drainage (shop operations and motor parks), and other activities?	—	—	—

	YES	NO	N/A
j. Operate cooling towers and pass through water?	—	—	—
k. Septic systems?	—	—	—
l. Fresh water wetlands?	—	—	—
m. Industrial waste system/discharge?	—	—	—
n. Lines which by-pass treatment structures?	—	—	—
o. Other?_____	—	—	—
3. Does the installation discharge into a Publicly Owned Treatment Works (POTW) any of the following:			
a. Process wastewater?	—	—	—
b. Domestic (sanitary) wastewater?	—	—	—
c. Industrial wastewater treatment plant effluent?	—	—	—
d. Other?_____	—	—	—
e. Are there any discharge by-pass lines in the system?	—	—	—
4. Does the installation make use of an onsite wastewater treatment *system prior to effluent discharge?*	—	—	—
5. Does the installation have a current (3 yr old or less) SPCC/ISC Plan?	—	—	—
6. Is the SPCC/ISC Plan exercised annually? (Mock Spillage Events conducted)?	—	—	—
7. Does the installation have aboveground storage tanks used for the storage of petroleum products?	—	—	—

If yes, list: (Attach a separate inventory sheet if necessary.)

Location	Quantity	Size
_____	_____	_____
_____	_____	_____
_____	_____	_____

	YES	NO	N/A
8. Does the installation have any sludge disposal areas from vehicle/equipment washing operations?	—	—	—
9. Is the sludge analyzed or characterized on a schedule frequency prior to disposal?	—	—	—
10. Is there stormwater runoff from vehicle/aircraft hardstands, that collect POL product and discharge to open ditches/ponds?	—	—	—
11. Are there any Section 404 Permits?	—	—	—
12. What percent of vehicle maintenance is performed by contract? Is it performed onpost or offpost_____?	—	—	—
13. Is there a working management system in place to preclude violations from recurring in this media?	—	—	—

C. Safe Drinking Water Act (SDWA)

1. Does the installation operate a public water system?	—	—	—
2. Does the installation maintain wellheads?	—	—	—
3. Does the installation operate an underground injection well?	—	—	—
4. Are there groundwater aquifers on the installation? Are they in use? _____	—	—	—
5. Is the installation located on a sole source aquifer?	—	—	—
6. Are protective or preventive measures in place to prevent contamination of these aquifers?	—	—	—
7. Does a drinking water surveillance program exist?	—	—	—
8. Are field water purification units used? (How is the backwash managed from these mobile units?) _____ _____ _____	—	—	—
9. Is there a working management system in place to preclude violations from recurring in this media area?	—	—	—

D. Resource Conservation and Recovery Act, Subtitle C (RCRA-C)

	YES	NO	N/A
1. What hazardous waste permits have been applied for?			
Part A	—	—	—
Part B	—	—	—
Interim Status	—	—	—
None - But needed	—	—	—
2. What size of generator is the installation?			
Very Small Quantity (less than 100 kg/month)	—	—	—
Small Quantity (between 100 and 1000 kg/month)	—	—	—
Large Quantity (more than 1000 kg/month)	—	—	—
3. Does the installation accept wastes from other installations for treatment, storage, or disposal not turned into the servicing DRMO?	—	—	—
4. Does the installation operate accumulation points or satellite accumulation points? How many?_____	—	—	—
5. Does the installation treat hazardous waste onsite? How and where? _____	—	—	—
6. Does the installation store (temporary or long term) hazardous waste onsite at other than an accumulation point? Where? _____	—	—	—
7. Does the installation dispose of hazardous waste onsite? How and where? _____	—	—	—
8. Do satellite/offpost facilities/installations (i.e., USARCs) transport hazardous wastes to the installation for DRMO disposal contracts?	—	—	—
9. Is there a working management system in place to preclude violations from recurring in this media area?	—	—	—

E. Resource Conservation and Recovery Act, Subtitle D (RCRA-D)

	YES	NO	N/A
1. Does the installation have a solid waste management facility onsite?	—	—	—

TYPE	NUMBER
Landfill	_____
Incinerator	_____
Transfer Point	_____

2. Does the installation have a:

a. DRMO on the installation?	—	—	—
b. DRMO off the installation?	—	—	—
d. Solid waste recycling program?	—	—	—

List commodities recycled (i.e., paper, aluminum, glass, etc.).

_____

e. Construction debris landfill? Is it permitted? _____ Operated by: Contractor_____? In-house personnel_____?	—	—	—

3. Is waste transported off-installation for disposal:

a. In landfills?	—	—	—
b. In incinerators?	—	—	—
c. Transfer stations?	—	—	—
d. Recycling plant?	—	—	—

4. Does the installation dispose of ash residues or sludge:

a. Onpost?	—	—	—
b. Offpost?	—	—	—
5. Does the installation receive refuse from outside the United States?	—	—	—
(Is laboratory testing performed?)	—	—	—

	YES	NO	N/A
6. Does the installation generate pathological wastes?	—	—	—

If yes, please explain (Is it permitted? Does the incinerator pass inspection by state officials?).

_____

_____

7. Does the installation operate battery shops, to include charging areas within vehicle maintenance facilities?	—	—	—

If yes, how many? _____

8. Does the installation have any Solid Waste Management Units (SMUs)?	—	—	—

If yes, how many?_____

9. Is there a working management system in place to preclude violations from recurring in this media area?	—	—	—

F. Resource Conservation and Recovery Act, Subtitle I (RCRA-I)

1. Does the installation have aircraft fuel storage facilities?	—	—	—

If yes, how many USTs are in the aircraft fuel storage facilities and what size are they?

_____

_____

2. Does the installation have ground vehicle fuel storage facilities?	—	—	—

If yes, how many USTs are in the ground vehicle fuel storage facilities and what size are they?

_____

_____

3. Does the installation operate field Logistic Control Centers (LCC) (i.e., fuel bladders, maintenance operations, potable water generating units, field showers, bakeries, ammunition storage, etc.)? List those that are operated.	—	—	—

_____

_____

	YES	NO	N/A
4. Is a field Logistics Control Center (LCC) operated by: Military? _____ Civilian? _____ Contractor? _____			
5. Is the LCC operated permanently _____ or only during training_____?			
6. Does the installation have an AAFES-operated or other type of gas station?	—	—	—
If yes, how many USTs are located at the gas station and what size are they? _____ _____			
7. Does the installation have any other USTs used to store petroleum products?	—	—	—

If yes, list: (Attach a separate inventory sheet if necessary.)

Location	Quantity	Size	Material Stored	Permitted
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

8. Does the installation have any USTs used to store hazardous substances/wastes?	—	—	—
If yes, where are they located, how many are there, what size are they, and what hazardous product do they contain? _____ _____			
9. Does the installation have any underground tanks out of service or abandoned?	—	—	—
10. Is there a program in place to manage unservicable/abandoned tanks?	—	—	—
11. Does the installation have a Used Solvent Elimination (USE) program?	—	—	—

	YES	NO	N/A
Explain: Either recycle service contract, Army-owned recycling equipment, or other type of program? _____ _____			
12. Do all maintenance facilities have solvent cleaning machines? If no, briefly explain how solvent cleaning is being performed. _____ _____	—	—	—
13. Does a complete comprehensive UST/AST inventory exist?	—	—	—
14. Is there a working storage tank management system in place to preclude violations from recurring in this media area?	—	—	—

G. Comprehensive Environmental Response, Compensation, and Liability Act/Superficial Amendments and Reauthorization Acts and RCRA Corrective Actions (CERCLA/SARA)

1. Does the installation have an on-going Installation Restoration Program (IRP)? How many sites? _____	—	—	—
2. Has the installation been a source of any offsite contamination?	—	—	—
3. Does the installation have any "unofficial" landfill sites that are no longer in use?	—	—	—
4. Are all 1383 exhibits submitted to identify sites to be cleaned?	—	—	—
5. Is there a working management system in place to preclude violations from recurring in this media area?	—	—	—
6. Does the IRP come under CERCLA/SARA?	—	—	—
7. Does the IRP come under RCRA Correction Actions?	—	—	—

H. Toxic Substance Control Act (TSCA)

PCBs

1. Has the installation conducted a survey for PCBs?	—	—	—

	YES	NO	N/A
2. Are PCB (polychlorinated biphenyl) or PCB contaminated oils in use or stored in the installation:			
a. Transformers?	—	—	—
b. Capacitors?	—	—	—
c. Electromagnets?	—	—	—
d. Heat Transfer or Hydraulic systems?	—	—	—
e. Circuit Breakers?	—	—	—
f. Fluorescent Light Ballasts?	—	—	—
g. Other? _____	—	—	—
3. Does the installation dispose of PCBs or PCB items at the installation?	—	—	—
4. Does the facility transport PCBs?	—	—	—
5. Is there a working management system in place to preclude violations from recurring in this media area?	—	—	—

I. Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

1. Does the installation use pesticides?	—	—	—
Contractor application_____	—	—	—
In-house application_____	—	—	—
Both contractor and in-house application_____	—	—	—
2. Are pesticide wastes disposed of at the installation?	—	—	—
3. Are pesticides stored on the installation?	—	—	—

Please list locations:

_____

_____

_____

4. Are medical records kept for individuals involved in the management of pesticides?	—	—	—

5. Where are pesticides used at the installation?
(Attach a separate list if necessary.)

_____

_____

	YES	NO	N/A
6. Are pesticides used at offpost satellite facilities?	—	—	—
7. Does the installation maintain a pesticide/entomology shop? If yes, is it permitted by the state? Are personnel certified/current?	—	—	—
8. Is there an annual inventory available for review?	—	—	—
9. Is there a working management system in place to preclude violations from recurring in this media area?	—	—	—

J. National Historic Preservation Act (NHPA) and Cultural Resources

1. Does the installation have any cultural resources eligible for or that are currently listed in the National Register of Historic Places?	—	—	—
2. Are there any cultural resources (archeological sites, buildings over 50 years old) that have not been evaluated for the National Register?	—	—	—
3. Does the Installation Master Plan contain a cultural resources overlay that is utilized for planning purposes?	—	—	—
4. Does a Soldier's Manual for the Environment exist to inform troops of cultural resources in training areas?	—	—	—
5. Is there an on-staff Historic Preservation Officer?	—	—	—
6. If not, does a staff person have cultural resources as "other duties as assigned?"	—	—	—
7. Is there a working management system in place in this media area?	—	—	—
8. Does the installation have a Historic Preservation Plan or Cultural Resource Management Plan?	—	—	—
9. Does the installation have any archeological artifacts in storage?	—	—	—

	YES	NO	N/A
10. Does the installation have in storage or know of any locations of Native American burials, cemeteries, or human remains?	—	—	—
11. Are there any areas on the installation considered to have religious importance to any Native American tribe?	—	—	—

K. Natural Resources Management

1. Does the installation have any outdoor recreation areas? (i.e., athletic fields, walking/running tracks, off-road vehicle tracks, etc.)	—	—	—
2. Does the installation have a plan for managing its natural resources?	—	—	—
3. Are there any areas on the installation that have:			
a. Wetlands? If so, are they permitted/regulated by definition? _____	—	—	—
b. Flood Plains? 25-yr?____ 50-yr?____ 100-yr?____	—	—	—
4. Has a survey to locate and identify threatened and endangered species and critical habitats been initiated?	—	—	—
5. Does the installation have any endangered species on its property?	—	—	—
6. Is the information on endangered species incorporated into the Installation Master Plan?	—	—	—
7. Are there any conflicts with the inventory of threatened or endangered species and training/firing operations?	—	—	—
8. Is the installation actively involved with ITAM?	—	—	—

9. Does the installation have the following plans:

Forestry Management _____
Wildlife Management _____
Land Management _____

	YES	NO	N/A
10. Is the Environmental Office involved with preplanning of training operations and construction activities?	—	—	—
11. Is there a working management system in place to preclude violations from recurring in this media area? (i.e., soil erosion, fish and wildlife, woodlands, surface waters, etc.)?	—	—	—

L. National Environmental Policy Act (NEPA)

1. Has the installation recently (within the past 5 yr) prepared, or is it in the process of preparing, an environmental assessment (EA) or environmental impact statement (EIS)?	—	—	—
a. For current mission?	—	—	—
b. For future Master Plan?	—	—	—
c. Any training mission and/or construction projects, timber sales, etc.?	—	—	—
2. Is the Environmental Officer (EO) actively involved in project/work order reviews to preclude conflicts in construction, operations, or training?	—	—	—
3. Is there a working management system in place to preclude violations from recurring in this media area?	—	—	—

M. Asbestos Management Program

1. Has the installation conducted a complete installation-wide asbestos facility survey?	—	—	—
2. Does an Asbestos Management Plan exist?	—	—	—
3. Is maintenance done on items insulated with asbestos?	—	—	—
4. Has the installation undergone any asbestos removal projects in the past? How long ago? _____ By contract or in-house? _____	—	—	—
5. Is there any asbestos on the installation that has been removed and is awaiting disposal?	—	—	—

	YES	NO	N/A
6. Will the installation have any demolition, remodeling, or renovation projects underway at the time of the ECAS assessment?	—	—	—
Please identify those projects and buildings:			
_____			
_____			
_____			
7. Does the installation have primary or secondary schools? Do they have asbestos?_____	—	—	—
8. Is asbestos material removed by contract or in-house personnel?	—	—	—
If in-house personnel, is the team trained/certified?	—	—	—
9. Is there a working management system in place to preclude violations from recurring in this media area?	—	—	—

N. Noise Abatement

1. Does the installation have an active runway?	—	—	—
2. Does the installation have any operations or maneuvers that produce environmental noise or noise that goes outside the installation (i.e., ranges, skeet range, helicopter pad, generators, highway transportation)?	—	—	—
3. Does a current ICUZ Management Plan exist?	—	—	—
4. Do any cooperative agreements exist regarding land-use development with bordering communities?	—	—	—
5. Are there any Zone II or Zone III's off the installation?	—	—	—
6. Are noise contour zones reviewed for operation/mission/training changes prior to implementation?	—	—	—
7. Has any public involvement or interface taken place to an installation's initiative to work and resolve or preclude future conflicts?	—	—	—

	YES	NO	N/A
8. Is there a working management system in place to preclude violations from recurring in this media area?	—	—	—

O. Radon Program

1. Does the installation monitor for radon gas?	—	—	—
3. Is there a program to reduce radon threat?	—	—	—
4. Has the installation populace been informed of the final status?	—	—	—
5. Is there a working management system in place to preclude violations from recurring in this media area?	—	—	—

P. Environmental Program Management (EPM)

1. Is the installation engaged in any construction, renovation or demolition?	—	—	—
2. Is the installation engaged in any real property transaction?	—	—	—
3. Is there currently an under-staffing problem?	—	—	—

_____ Total Authorized

_____ Total Recognized

_____ Total Vacancies

_____ Required number of positions needed over and above the TDA authorization to manage all sub-program areas.

4. Is there an EQCC that meets routinely?	—	—	—
5. Does the CG or GC chair the committee?	—	—	—
6. Are the proper representatives in attendance (to include tenants)?	—	—	—

	YES	NO	N/A
7. What is the total number of sub-environmental programs currently required to manage the entire environmental program (i.e., Air, Hazardous Waste/Material, Groundwater, Surface Water, Solid Waste, Noise, Training, POL, Archeology, Asbestos, etc.)?_____			
8. Is the Environmental Program Manager a participant in the budgetary processes of the installation? (i.e., Input to Annual Work Plan, Command Operating Budget, Unfinanced Requirements Report, etc.)?	—	—	—
9. From the perspective of the Environmental Management Office, does the environmental program receive adequate support or cooperation from:			
a. Preventive Medicine Activity?	—	—	—
b. Safety Office?	—	—	—
c. Inspector General?	—	—	—
d. Manpower Survey Activity of Resource Management Directorate?	—	—	—
e. Civilian Personnel Office (i.e., Recruitment/Placement and Position Management/Classification)?	—	—	—
f. Staff Judge Advocate?	—	—	—
g. Directorate of Plans, Training, Mobilization, and Security (Range Control, Aviation, Maintenance)?	—	—	—
h. Directorate of Logistics (Maintenance, Supply, and Services)?	—	—	—
i. Directorate of Contracting or Procurement?	—	—	—
j. Directorate of Engineering and Housing (i.e., DEH, DDEH, O&M Divisions, Engineering Plans and Services etc.)?	—	—	—
k. MATES, UTES, ECS, AMSAs, CSMS, etc.?	—	—	—
l. Major garrison military units?	—	—	—
m. Transient troop units (i.e., USAR/ARNG, and active Army components special training exercises)?	—	—	—
n. Public Affairs Officer (PAO)	—	—	—

	YES	NO	N/A
o. DPCA (Auto Craft, Arts and Craft, Photo Labs, Outdoor Recreation)?	—	—	—
p. DRMO? Onpost?_____ Offpost? _____			
q. Other Tenant Activities (i.e., AAFES, ANG, USAF, other)?	—	—	—
10. Is required support being provided to environmental training? List separately:			
a. Environmental Staff-Professional Development/Staying Current?	—	—	—
b. Civilian Staff Personnel (to include within DEH)?	—	—	—
c. Military Units/Military Personnel/Unit Commanders?	—	—	—
11. Are comprehensive 1383 exhibits being submitted to identify all resources required to correct deficient areas?	—	—	—
12. Is there an open working relationship between the Environmental Staff and the USEPA/state/local/regional regulators to resolve issues? Which regulatory entity (Federal, state, local) is help required to resolve conflicts?	—	—	—
COMMENTS: _____ _____			
13. Are other Environmental agencies being used to provide support and expertise to resolve conflicts, crises, and requirements needed (i.e., USAEC, USAEHA, USACERL, ODEP-Conservation (EHSC), and others)?	—	—	—
14. Are sufficient awareness tools being routinely used to ensure environmental sensitivity is kept elevated at all levels (Units, Directorates, Annual Training, Tenant Activities, Special Training Exercises, etc.)? Examples include Installation Papers, Pamphlets, SOPs, and Routine Awareness Sessions.	—	—	—
15. Are Environmental Awareness issues presented during Pre-Camp conferences prior to Annual Training Units arriving? (i.e., Reserve and National Guard Units)	—	—	—
16. Are Environmental Awareness/topics incorporated into the "unit training schedules" to maintain sensitivity within the Garrison Units?	—	—	—

Q. Hazardous Materials Management

1. Has the installation conducted training for individuals working with hazardous materials? — — —

2. Does the installation have an Oil and Hazardous Substance Contingency Plan? — — —

3. Is there a working management system in place to preclude violations from recurring in this media area? — — —

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 copy of the Building Information Schedule (activity listing by Bldg. No.).

Clean Air Act (CAA)

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

Clean Water Act (CWA)

1. Any NPDES/SPDES permits
2. A list of POL storage areas
3. The SPCC Plan
4. Maps of the sanitary, storm, and industrial sewers
5. A list of maintenance shops/operations to include wash facilities.
6. Locations of holding ponds, sedimentation pits, and open/end-of-pipe discharge points.
7. Fresh water wetlands locations
8. Topographic maps depicting water aquifers (sole source also) and prime/unique farmlands.

Safe Drinking Water Act (SDWA)

1. Sampling records
2. Monitoring records
3. Copies of notices of noncompliance

Resource Conservation and Recovery Act, Subtitle C (RCRA-C)

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

Resource Conservation and Recovery Act, Subtitle D (RCRA-D)

1. Any contract 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.

Resource Conservation and Recovery Act, Subtitle I (RCRA-I)

1. Upgrading and/or closure plans
2. A list of all USTs and their locations
3. Release detection documentation
4. Integrity test results
5. Site contamination reports after tank removals

Comprehensive Environmental Response Compensation and Liability Act / Superfund Amendment and Reauthorization Act (CERCLA/SARA) and RCRA Corrective Actions

1. A copy of any reports of spills
2. Documentation concerning contaminated sites
3. Copies of the Tier I or Tier II reports

Toxic Substances Control Act (TSCA)

1. The PCB inventory
2. The annual report

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

1. The Pesticide Management Plan
2. A list of pesticide storage sites
3. Application records

4. MSDS sheets for pesticides
5. Personnel Certifications (applications)
6. Contracts

National Historic Preservation Act (NHPA)

1. A list of properties nominated for the National Register
2. Management plans

Natural Resources Management

1. The endangered species survey
2. The Natural Resources Management Plan (Land, Forestry, Wildlife)
3. ITAM Program

National Environmental Policy Act (NEPA)

1. Recent EAs, EISs, FNSIs or NOIs.

Asbestos Management Program

1. The results of the asbestos survey
2. The Asbestos Management Plan

Noise Abatement

1. The AICUZ Study
2. Noise complaints

Radon Program

1. Survey results

Environmental Program Management

Hazardous Materials Management

1. A list of hazardous material storage/use areas
2. The Waste minimization plan
3. MSDS Sheets
4. Documentation of personnel training

3. SITE EVALUATION:

- Site Evaluation Activities - Onsite, the evaluators 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 evaluation findings and recommendations. An ECAS Finding Summary is available to assist evaluators in compiling needed information during an ECAS evaluation. A Finding Summary should be completed for each finding during the evaluation. These forms comprise the basis of the ECAS report. The format and content for ECAS evaluation reports will be in a separate supplement. Section 4 shows a blank Finding Summary form. Section 6 shows a sample completed Finding Summary.

  All items of the ECAS Finding Summary must be filled in up to *Sampling Results* for negative findings and up to *Criteria* for positive findings. The *CONDITION* is a factual statement describing the status of the process, permit, or situation under investigation, and the *CRITERIA* is the environmental standard (Federal, state, local, DOD, Army, Good Management Practice (GMP)) the installation is being measured against. A condition may be positive if the installation is going above and beyond the requirements. *SUGGESTED SOLUTIONS* is an optional entry, and may include easily identifiable solutions to the deficiency. *COMMENTS* may include any corrective actions already taken or scheduled, or any other appropriate information pertaining to the finding.

  For example, a team member assigned to evaluate the installation's small quantity generator (SQG) hazardous waste management program visited the accumulation point at building 5000. The evaluator noticed some drums were damaged and took a count of the total number of drums and the number of damaged drums to get an accurate description for the finding. Three of the five drums were rusted and bulging. Item 4-32 in the ECAS manual states that 40 CFR 262.34(d)(2) and 265.171, requires containers to be tightly sealed and not leaking, bulging, rusting, or badly dented. The damaged drums were behind the others, so the accumulation point manager may have overlooked them during his regular inspections. The accumulation point manager immediately put overpack drums on order. The evaluator is now ready to fill out a Finding Summary.

4. FINDING SUMMARY:

CAS Manual Used:
Regular Army ___
Army Reserve ___
Army National Guard ___

Manual Edition Date:_____
State Manual Title & Date:_____
Local Manual Title & Date:_____

ECAS INDIVIDUAL FINDING SHEET

-For Official Use Only-

Facility/Activity Name:_____

Facility/Activity Type
(See reverse):_____

Tenant or Host (T/H)? _____ If Tenant, give
1) Name: _____
2) FFID: _____
Location/Facility Number: _____
If Reserve, give
1) BASOPS:_____
2) ARCOM:_____
3) MUSARC:_____

Manual Section # :_____
Question # : _____

Type of Finding
(POS / NEG):_____
Finding Category: I II III H/S
(See reverse)

o Check only if finding requires immediate action due to threat or risk.

CONDITION (Finding Description):

CRITERIA (What is the actual requirement?):

Basis of Finding (Citation or Regulation):

Existing NOV? Y / N
Previous ECAS Finding? Y / N

Recurring NOV? Y / N
NOV Number(s) (if applicable):_____

SUGGESTED SOLUTION(s):

SAMPLING RESULTS:
Universe:____
Number of Discrepancies:____

Sample Size:____
Percentage of Discrepancies:____

PREPARED BY: **DATE:**

COMMENTS:

5. EXPLANATION OF RATINGS:

FACILITY/ACTIVITY TYPES

ACTIVE ARMY	RESERVES	GUARD
17 Troop Operations & Training Facilities (Buildings/Ranges)	1. ASF	Armory
21 Maintenance	2. AFRC	OMS
22 Production	3. AMSA (G)	CSMS
30 R&D Labs/Test Facilities	4. AMSA (W)	UTES
40 Supply & Storage/Logistics	5. DS/GS	MATES
50 Hospital/Medical	6. ECS	AASF
60 Admin/Communication	7. LTA	AVCRAD
70 Housing and Community	8. OMS	LTA
80 Utilities/Ground Improvements	9. RTS-INTEL	MTA
90 Real Estate/Site Improvements Research & Testing	10. RTS-MAINT	STARC/HQ
	11. RTS-MED	USP & FO
	12. STORAGE	
	13. USARC	
	14. OTHER	

FINDING CATEGORIES:

1. Environmental Findings I, II, & III

2. Health/Safety Findings

CLASS I FINDINGS: Noncompliance with an existing environmental regulation, compliance agreement, consent order, or operating/discharge permit. These may stem from Federal, state, or local requirements.

CLASS II FINDINGS: Noncompliance with a future deadline in an environmental regulation, compliance agreement, or consent order. These may stem from Federal, state, or local requirements.

CLASS III FINDINGS: Findings based on management practices that are not based on regulatory requirements. These include findings based on Army Regulations and DOD Directives. Class III findings may be positive or negative.

HEALTH/SAFETY FINDINGS: Findings related to OSHA, DOT, and NFPA as indicated in requirements column in the ECAS protocol. Most health/safety findings are in the Hazardous Materials Section (Section 17) if the protocol. Health/safety findings may be regulatory but are not part of the RCS 1383 reporting process and not eligible for any environmental funding. Health/safety findings are not classified I, II, or III.

ARMY NATIONAL GUARD FACILITY TYPES:

ARM	Armory
OMS	Organizational Maintenance Shop
CSMS	Combined Support Maintenance Shop
UTES	Unit Training Equipment Site
MATES	Mobilization and Training Equipment Site
AASF	Army Aviation Support Facility
LTA	Local Training Area
MTA	Major Training Area
STARC/HQ	State Area Command/Headquarters
AVCRAD	Aviation Classification Repair Activity Depot
USPFO	United States Property & Fiscal Office

6. SAMPLE FINDING SUMMARY:

ECAS Manual Used:
Regular Army X
Army Reserve ___
Army National Guard ___

Manual Edition Date: Sept 1993
State Manual Title & Date: ___
Local Manual Title & Date: ___

ECAS INDIVIDUAL FINDING SHEET
-For Official Use Only-

Facility/Activity Name: Hazardous Waste Storage Facility/Activity Type (See reverse): 40

Tenant or Host (T/H)? H If Tenant, give
1) Name: ___
2) FFID: ___
Location/Facility Number: Bldg 5000
If Reserve, give
1) BASOPS: ___
2) ARCOM: ___
3) MUSARC: ___

Manual Section # : 4
Question # : 4-32

Type of Finding (POS / NEG): Neg
Finding Category: (I) II III H/S (See reverse)

O Check only if finding requires immediate action due to threat or risk.

CONDITION (Finding Description):
Three of Five drums of hazardous waste were rusted and bulging.

CRITERIA (What is the actual requirement?):
Containers used to store hazardous waste at SCGs must be in good condition and not leaking

Basis of Finding (Citation or Regulation):
40 CFR 262.34(d)(2) and 265.171

Existing NOV? Y / (N)
Previous ECAS Finding? Y / (N)

Recurring NOV? Y / (N)
NOV Number(s) (if applicable): ___

SUGGESTED SOLUTION(s):
Overpack drums that are in bad condition

SAMPLING RESULTS:
Universe: ___
Number of Discrepancies: ___
Sample Size: ___
Percentage of Discrepancies: ___

PREPARED BY: John Smith **DATE:** 9-10-93

COMMENTS: Overpacks were ordered the same day.

FACILITY/ACTIVITY TYPES

ACTIVE ARMY	RESERVES	GUARD
17 Troop Operations & Training Facilities (Buildings/Ranges)	1. ASF	Armory
21 Maintenance	2. AFRC	OMS
22 Production	3. AMSA (G)	CSMS
30 R&D Labs/Test Facilities	4. AMSA (W)	UTES
40 Supply & Storage/Logistics	5. DS/GS	MATES
50 Hospital/Medical	6. ECS	AASF
60 Admin/Communication	7. LTA	AVCRAD
70 Housing and Community	8. OMS	LTA
80 Utilities/Ground Improvements	9. RTS-INTEL	MTA
90 Real Estate/Site Improvements Research & Testing	10. RTS-MAINT	STARC/HQ
	11. RTS-MED	USP & FO
	12. STORAGE	
	13. USARC	
	14. OTHER	

FINDING CATEGORIES:

1. Environmental Findings I, II, & III

2. Health/Safety Findings

CLASS I FINDINGS: Noncompliance with an existing environmental regulation, compliance agreement, consent order, or operating/discharge permit. These may stem from Federal, state, or local requirements.

CLASS II FINDINGS: Noncompliance with a future deadline in an environmental regulation, compliance agreement, or consent order. These may stem from Federal, state, or local requirements.

CLASS III FINDINGS: Findings based on management practices that are not based on regulatory requirements. These include findings based on Army Regulations and DOD Directives. Class III findings may be positive or negative.

HEALTH/SAFETY FINDINGS: Findings related to OSHA, DOT, and NFPA as indicated in requirements column in the ECAS protocol. Most health/safety findings are in the Hazardous Materials Section (Section 17) if the protocol. Health/safety findings may be regulatory but are not part of the RCS 1383 reporting process and not eligible for any environmental funding. Health/safety findings are not classified I, II, or III.

ARMY NATIONAL GUARD FACILITY TYPES:

ARM	Armory
OMS	Organizational Maintenance Shop
CSMS	Combined Support Maintenance Shop
UTES	Unit Training Equipment Site
MATES	Mobilization and Training Equipment Site
AASF	Army Aviation Support Facility
LTA	Local Training Area
MTA	Major Training Area
STARC/HQ	State Area Command/Headquarters
AVCRAD	Aviation Classification Repair Activity Depot
USPFO	United States Property & Fiscal Office

7. USING THE ECAS MANUAL:

THE PROTOCOLS

Army 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 Federal, state, and local regulations, and by DOD and Army directives.

After a review of these activities at Army installations, it is apparent that there are major categories of environmental compliance into which most environmental regulations and Army activities could be grouped. This manual is divided into 17 sections that correspond to environmental acts as well as major compliance categories.

1 Clean Air Act
2 Clean Water Act
3 Safe Drinking Water Act
4 Resource Conservation and Recovery Act, Subtitle C
5 Resource Conservation and Recovery Act, Subtitle D
6 Resource Conservation and Recovery Act, Subtitle I
7 Comprehensive Environmental Response, Compensation, and Liability Act / Superfund Amendment and Reauthorization Act and RCRA Corrective Actions
8 Toxic Substances Control Act
9 Federal Insecticide, Fungicide, and Rodenticide Act
10 National Historic Preservation Act and Cultural Resources
11 Natural Resources Management
12 National Environmental Policy Act
13 Asbestos Management Program
14 Noise Abatement
15 Radon Program
16 Environmental Program Management
17 Hazardous Materials Management.

Each section is organized in the following format:

A. Applicability

This section provides guidance on the major activities and operations included in the protocol and a brief description of the major application.

B. Federal Legislation

This section of each protocol identifies, in summary form, the key regulatory issues associated with the compliance area in the Federal law.

C. State/Local Requirements

This section of each protocol identifies the "typical" compliance areas normally addressed in state and local regulations. This section does not present individual state/local requirements. An assessment of state and local requirements must be conducted and supplemental questions prepared to cover these requirements. The manual is prepared in loose leaf form to allow state and local requirements to be inserted easily.

D. DOD Regulations

This section of the protocol identifies the relevant directives or requirements associated with the compliance area that are promulgated by DOD.

E. U.S. Army Regulations (ARs)

This section identifies those ARs that address requirements associated with the specific compliance category.

F. Key Compliance Requirements

This section of each protocol summarizes the significant compliance requirements associated with the regulations previously identified. It is a brief abstract summarizing the overall thrust of the regulations for that particular compliance category.

G. Responsibility for Compliance

This section identifies and summarizes the individual organizations at an Army installation with responsibility for maintenance, operation, or environmental monitoring of activities associated with the compliance category.

H. Key Compliance Definitions

This section of each protocol presents definitions for those key terms associated with each compliance category.

I. Compliance Assessment Mechanism

The final section of each protocol and its tables and figures contain evaluation procedures (checklists) composed of requirements or guidelines that serve as indicators to point out possible compliance problems, as well as practices, conditions, and situations that could indicate potential problems. They are intended to focus attention on the key compliance questions and issues that should be investigated. Instructions are provided to direct the evaluator to the appropriate action, references, or activity that corresponds to the specific requirement or guideline.

8. MANUAL FORMAT:

The protocol portion of ECAS 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 GMP to maintain compliance, but which is not specifically mandated by regulation.

The second column gives instructions to help conduct the compliance evaluation. 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. Contact/location information in parentheses is intended to give guidance on the department or location at the installation where action items are applicable. The contact/location code given is referencing a legend at the bottom of the worksheet.

At the end of each section 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 protocols, 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 (or other reference to location) be made during the review.

The evaluation procedures are designed as an aid and should not be considered exhaustive. Use of the guide requires the evaluator's judgement to play a role in determining the focus and extent of further investigation. A review of appropriate state regulations should be conducted so additional review questions that reflect the substantive requirements of state/local regulations pertinent to individual installations can be included on the worksheets.

9. SUPPLEMENTAL INFORMATION:

Any findings discovered through the use of this guidance manual by the internal assessment must be validated by the environmental coordinator and Judge Advocate. The findings and corrective actions must be recorded in the Environmental Quality Control Committee minutes.

Any change or suggestion for improving this guidance manual should be forwarded to USAEC, (SFIM-AEC-ECC), Aberdeen Proving Ground, MD. 21010-5401.

10. CONTACT/LOCATION CODES:

(1) Directorate of Engineering and Housing (DEH)
(2) Environmental Coordinator (EC)
(3) Preventive Medicine Officer
(4) Safety and Health Officer
(5) Fire Department
(6) Director of Logistics (DOL)
(7) Fuels Management Officer (DOL/DEH)
(8) Transportation/Maintenance Officer (DOL)
(9) Chief of Operations and Maintenance (O&M)
(10) Range Control (DPTMSEC)
(11) Aviation Commander (DPTMSEC)
(12) Director of Plans, Training, Mobilization, and Security (DPTMSEC)
(13) Engineering, Plans, & Services (EP&S)
(14) Wastewater Treatment Plant Supervisor (O&M)
(15) Land Management Officer (DEH)
(16) Building and Grounds Division (DEH)
(17) Entomology Shop (DEH)
(18) TSDF Operators (DEH, DOL, DRMO)
(19) Shop Activity Supervisor
(20) Director of Contracting (DOC)
(21) Public Affairs Office (PAO)
(22) Staff Judge Advocate
(23) Defense and Reutilization Marketing Office (DRMO)
(24) Utilities Division (Interior Electric Shop)
(25) Utilities Division (Exterior Electric Shop)
(26) Master Planner (DEH)
(27) Inspector General (IG)
(28) School Principal
(29) Installation Commander
(30) Army and Air Force Exchange Service (AAFES)
(31) Directorate of Personnel and Community Activities (DPCA)
(32) Directorate of Resource Management (DRM), Internal Control
(33) Golf Course Pesticide Shop
(34) Civilian Personnel Office (CPO)
(35) Morale, Welfare, and Recreation (MWR)
(36) Directorate of Plans, Training, and Mobilization

METRIC CONVERSION TABLE

1 in.	=	25.4 mm
1 ft	=	0.305 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 μm	=	1×10^{-6} m
1 gal	=	3.78 L
°F	=	(°C + 17.78) × 1.8
°C	=	0.55(°F-32)
1 yd	=	0.9144 m
1 Btu/ lb	=	0.556 cal/g
1 Btu/h	=	0.2931 watts (W)

Section 1

CLEAN AIR ACT (CAA)

SECTION 1

CLEAN AIR ACT (CAA)

A. Applicability of this Protocol

This protocol includes regulations, responsibilities, and compliance requirements associated with air pollution emissions at Army installations. The major air pollution emissions and sources at Army installations are:

- Particulates, sulfur dioxide (SO_2), and nitrogen oxide (NO_x), and carbon monoxide (CO) from fuel burning at steam and hot water generation plants and boilers.

- Particulate and toxic air emissions from the operation of hazardous waste, general waste, classified material and medical, pathological, and/or infectious waste incinerators.

- Particulate, CO, metals, and toxic air pollutant emissions from open burning and open detonation operations.

- Carbon monoxide emissions from mobile (vehicular) sources.

- The emission of volatile organic compound (VOC) vapors from the storage and transfer of certain petroleum fuels and chemicals (solvents), and the operation of incinerators, solvent use, degreasing/metal cleaning, sterilizing, and other processes (paint stripping and metal finishing) that use solvents.

- Fugitive particulate emissions from training activities and construction/ demolition operations.

Most Army installations have air emissions sources in each of these six categories. Therefore this protocol is applicable to some extent at all Army installations.

B. Federal Legislation

- *The Clean Air Act (CAA) Amendments of 1990.* This Act, 42 U.S. Code (USC) 7401-7671q, Public Law (PL) 101-549, is composed of seven major titles which address various aspects of the national air pollution control program.

Title I describes air pollution control requirements for geographic areas in the United States (U.S.) which have failed to meet the National Ambient Air Quality Standards (NAAQS). otherwise known as nonattainment areas.

Title II deals mostly with revised tailpipe emission standards for motor vehicles. These requirements compel automobile manufacturers to improve design standards to limit carbon monoxide, hydrocarbons, and NO_x emissions. Manufacturers must also investigate feasibility and oxygenate gasolines will be required in cities with the worst ozone and carbon monoxide nonattainment.

Title III is potentially the most pervasive and costly requirement of the CAA 1990. The major elements of the Title deal with control of routine emissions of hazardous air pollutants, and contingency planning for accidental release of hazardous substances.

Title IV addresses acid deposition control and applies only to commercial utilities which produce electricity for sale.

Title V outlines the goal of having states issue Federally enforceable operating permits to applicable stationary sources. The permits are designed to enhance the ability of the USEPA, state regulatory agencies, and private citizens to enforce the requirements of the CAA 1990. Permits will also be used to classify operation and control requirements for stationary sources.

Title VI limits the emissions of chlorofluorocarbons (CFCs), halons, and other halogenated chemicals which contribute to the destruction of stratospheric ozone. These requirements closely follow the control strategies recommended in June 1990 by the 2nd Meeting of Parties to the Montreal Protocol.

Title VII describes civil and criminal penalties which may be imposed for violation of new and existing air pollution control requirements.

C. State/Local Requirements

- One mechanism for mitigating air pollutant emissions are state and local regulations. These regulations will normally follow the Federal guideline for state programs and will have many similar features. However, depending on the type and degree of air pollutant problems within the state/ region, the individual regulations will vary. As an example, photochemical oxidant (ozone) problems are widespread in California and individual Air Quality Management Districts (AQMDs) in that state have stringent VOC emission requirements. North Dakota has no such problem and, therefore, has fewer and less stringent VOC regulations.

New source performance standards (NSPS) are established for particular pollutants in industrial categories based on adequately demonstrated control technology.

A permit is normally required for new, expanded, or modified sources of air pollutants. Some state regulations apply directly to some facilities and operations without requiring a permit. At a minimum, state regulations should be reviewed for the following activities:

- incinerators
- dry cleaning operations
- fuel storage and dispensing facilities
- certification requirements for boiler operators
- emissions and emission control requirements for the operation of existing fossil fuel-fired steam generators
- open burning and detonation activities
- vehicle exhaust emissions testing
- spray painting of vehicles, buildings, and/or furniture
- certification of vehicles transporting VOC liquids
- paving of roads and parking lots
- toxic air pollutants
- operation of cold cleaners, degreasers, and open top vapor degreasers
- vapor control requirements for gasoline pumps.
- fugitive dust emissions
- control of particulate emissions from woodworking shops and the transportation of refuse or materials in open vehicles.

D. DOD Regulations

- DOD Instruction 4120.14, *Environmental Pollution Prevention, Control, and Abatement*, implements within DOD policies provided by Executive Order (EO) 12088, *Federal Compliance with Pollution Standards*, and Office of Management and Budget (OMB) Circular A-106 and establishes policies for developing and submitting plans for installing improvements needed to abate air emissions from DOD facilities.

E. U.S. Army Regulations (ARs)

- AR 200-1, *Environmental Protection and Enhancement*, Chapter 4, *Air Pollution Abatement Program*, sets forth policy and procedures for controlling pollutant emissions into the air. This regulation mandates compliance with all applicable Federal, state, and local regulations concerning air quality, including State Implementation Programs.

F. Key Compliance Requirements

- New Source Performance Standards (NSPS) - Federally established NSPS emission standards are applicable to stationary sources modified or built after a date designated by regulation. There are several specific industrial facilities/operations for which NSPS have been developed, but only the following might apply to Army installations:

  - steam generators with greater than 100/million British thermal units per hour (MBtu/h) but less than 250 MBtu/h heat input capacity that started construction or modification after 19 June 1984
  - steam generators with maximum design heat input capacity greater than 10 MBtu but less than 100 MBtu which started construction or modification after 3 June 1989
  - fuel burning facilities constructed or modified after 17 August 1971 with greater than 250 MBtu/h heat input
  - municipal waste combustors with a capacity greater than 250 tons/day that started construction or modification after 20 December 1989
  - incinerators with greater than 50 tons/day charging rate that started construction or modification after 17 August 1971
  - sewage sludge incinerators that combust greater than 2205 pounds (lb) per day which were constructed or modified after 11 June 1973
  - incinerators for beryllium containing waste
  - stationary gas turbines with a heat input greater than or equal to 10.7 gJ/h that were constructions or modified after 3 October 1977
  - bulk gasoline terminals with greater than 75,000 gallons (gal) gasoline throughput per day that started construction or modification after 17 December 1980
  - storage vessels for petroleum liquids of greater than 40,000 gal capacity
  - sulfuric and nitric acid plants
  - pumps, compressors, pressure relief devices, flanges etc., in volatile hazardous air pollutant VHAP service
  - rotogravure printers.

  Appendix 1-1 presents some of the key performance standards applicable to sources typically found at Army installations.

- Vehicular Emission Inspections - Many states require owners of fleet vehicles to have annual inspections of exhaust gases to determine emissions of CO and hydrocarbons. Army installations typically have many vehicles and may be required to comply with these regulations.

- VOC Emissions Compliance - Most states regulate the emission of VOCs into the atmosphere. Typical facilities at Army installations that emit VOCs are

fuel storage and dispensing facilities; organic solvent stripping, cleaning or degreasing; surface coating operations; drycleaning operations; and printing plants. Emissions limitations will vary from state to state and may vary within the same state depending on the relative attainment status of its air quality control regions. Limits are usually expressed in pounds of VOC/unit volume of substance used.

- Particulate Emission Compliance - Particulates emitted from fuel burning equipment and incinerators on Army installations are typically regulated on the state level through individual permits.

  Many states vary particulate emission limitations depending on the regional air quality conditions with the state. In addition, visible emissions are regulated to opacity levels in percent, i.e., 20 percent opacity. Higher levels of visible emissions (opacity) are normally permitted during certain startup and maintenance operations for short periods of time (5 minutes (min)/h).

- Permits to Operate Air Contaminant Sources - Army installations must obtain permits from the appropriate state agency to operate some sources of air contaminants. Permits to operate will vary among facilities and may require the installation of monitoring devices. Also, the operator is required to maintain certain records, reports, and information as stipulated in the individual permits.

- SO_2 Emission Compliance - Sources burning fuel containing sulfur are typically limited to an allowable stack emission rate in pounds of SO_2/MBtu heat input or the use of a fuel with a specific fuel sulfur content. Regulations and individual permits will specify these limitations. Testing, monitoring, and sampling data must be retained and available for inspection. In addition, many states set fuel sulfur limits more stringent than Federal requirements depending on the local nonattainment status.

- CFCs and Halons - Restrictions on the use of CFCs and Halons as well as servicing appliances containing CFCs and Halons is regulated in 40 CFR 82.

G. Responsibility for Compliance

- The Installation Commander (IC) is responsible for compliance with air pollution laws and regulations and for determining the appropriate signatory for all permits.

- The Directorate of Engineering and Housing (DEH) is responsible for the maintenance of incinerators, fuel handling, and storage equipment, as well as the operation and maintenance of all fuel burners. The heating/boiler plant fuel burners are the responsibility of the Operations and Maintenance Division.

- The Environmental Coordinator (EC) is responsible for the preparation of all air pollution emission source permit applications.

- The Hospital or Installation Clinic is responsible for the operation of any medical/pathological incinerators located in their facility.

- The Fuels Management Branch of the Directorate of Logistics (DOL) is responsible for the operation of all fuel handling, transportation (tanks and/or pipelines), and storage facilities on the installation. The branch is also responsible for ensuring that all fuels satisfy specifications, including state mandated sulfur content. The branch is also responsible for the operation of the military service station that dispenses leaded or unleaded fuel.

- The Vehicle Maintenance Branch of the Director of Logistics (DOL) is responsible for the emission testing and vehicle maintenance required by state and Army regulations.

- The various maintenance facilities at the installation are responsible for the operation of degreasers and other industrial processes that are regulated or may require operating permits.

- The Army/Air Force Exchange System (AAFES) operates service stations that dispense fuel for passenger vehicles and other light duty vehicles. These stations are subject to Federal, state and local requirements for control of air pollution emissions from fuel storage and dispensing operations, and vehicle maintenance activities.

- The DEH, Environmental Management Division, is responsible for monitoring the ambient air quality and preparing the installation air emission inventory.

H. Key Compliance Definitions

These definitions were obtained from the various Federal, DOD, and ARs listed previously.

- *Annual Capacity Factor* - the ratio between the actual heat input to a steam generating unit from an individual fuel or combustion of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8700 h during that 12 mo period at the maximum design heat input capacity (40 CFR 60.41(c)).

- *Appliance* - any device which contains and uses a class I or class II substance as a refrigerant and which is used for household or commercial purposes, including any air conditioner, refrigerator, chiller, or freezer (82 CFR 152(a)).

- *Approved Equipment Testing Organization* - any organization which has applied for and received approval from the Administrator pursuant to 82 CFR 160 (82 CFR 152(b)).

- *Benzene Service* - a piece of equipment that either contains or contacts a fluid (liquid or gas) that is at least 10 percent benzene by weight (40 CFR 61.111).

- *Bulk Gasoline Terminal* - any gasoline facility that receives gasoline by pipeline, ship, or barge, and has a throughput of greater than 75,700 L/day (40 CFR 60.501).

- *Bulk Gasoline Plant* - any gasoline distribution facility that has a throughput less than or equal to 75,700 L (40 CFR 60.111(b)).

- *Cartridge Filter* - a discrete filter unit containing both filter paper and activated carbon that traps and removes contaminants from petroleum solvent, together with the piping and ductwork used in installing this device (40 CFR 60.621).

- *Certified Refrigerant Recovery Or Recycling Equipment* - equipment certified by an approved equipment testing organization to meet the standards in 82 CFR 158(b) or (d), equipment certified pursuant to 82 CFR 36(a), or equipment manufactured before 15 November 1993, that meets the standards in 82 CFR 152(c), (e), or (g) (82 CFR 152(c)).

- *Closed-vent System* - a system that is not open to the atmosphere and is composed of piping, connections, and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device (40 CFR 61.241).

- *Cofired Combustor* - a unit burning municipal-type solid waste or refuse derived fuel with a nonmunicipal solid waste fuel and is subject to a Federally enforceable permit limiting the unit to combusting a fuel feed stream, 30 percent or less of the weight of which is comprised, in aggregate, of municipal-type solid waste or refuse derived-fuel as measured on a 24 h basis (40 CFR 60.51(a)).

- *Cogeneration Steam Generating Unit* - a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source (40 CFR 60.41(c)).

- *Commercial Refrigeration* - means, for the purposes of 82 CFR 156(i), the refrigeration appliances utilized in the retail food and cold storage warehouse

sectors. Retail food includes the refrigeration equipment found in supermarkets, convenience stores, restaurants and other food service establishments. Cold storage includes the equipment used to store meat, produce, dairy products, and other perishable goods. All of the equipment contains large refrigerant charges, typically over 75 lb (33.75 kg) (82 CFR 152(d)).

- *Commercial/Retail Waste* - material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities (40 CFR 60.51(a)).

- *Continuous Emissions Monitoring Systems (CEMS)* - a monitoring system for continuously measuring the emissions of a pollutant from an affected facility (40 CFR 60.51(a)).

- *Designated Volatility Nonattainment Area* - any area designated as being in nonattainment with the National Ambient Air Quality Standard (NAAQS) for ozone pursuant to rulemaking under section 107(d)(4)(A)(ii) of the *CAA* (40 CFR 80.2).

- *Designated Volatility Attainment Area* - an area not designated as being in nonattainment with the NAAQS for ozone (40 CFR 80.2).

- *Diesel Fuel* - any fuel sold in any state and suitable for use in diesel motor vehicles and diesel motor vehicle engines, and which is commonly or commercially known or sold as diesel fuel (40 CFR 80.2).

- *Disposal* - the process leading to and including (82 CFR 152(e)):
    1. The discharge, deposit, dumping or placing of any discarded appliance into or on to any land or water
    2. The disassembly of any appliance for discharge, deposit, dumping or placing of its discarded component parts into or on to any land or water
    3. The disassembly of an appliance for reuse of its component parts.

- *Duct Burner* - a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit (40 CFR 60.41(c)).

- *Dryer* - a machine used to remove petroleum solvent from articles of clothing or other textile or leather goods, after washing and removing excess petroleum solvent, together with the piping and ductwork used in the installation of this device (40 CFR 60.621).

- *Emerging Technology* - any SO_2 control system that is not defined as a conventional technology and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology (40 CFR 60.41(c)).

- *Federally Enforceable* - all limitations and conditions enforceable by the Administrator, including those requirements developed pursuant to 40 CFR 60 and 61, requirements within any applicable state implementation plan, and any permit requirements established pursuant to 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24 (40 CFR 60.41(b)).

- *Fuel Pretreatment* - a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit (40 CFR 60.41(c)).

- *Fugitive Emissions* - air pollutants entering into the atmosphere from other than a stack chimney, vent, or other functionally equivalent opening. Example: vapors, dust, fumes (40 CFR 51.301(j)).

- *Gasoline Carrier* - any distributor who transports or stores, or causes the transportation or storage of gasoline or diesel fuel without taking title to or otherwise having any ownership of the gasoline, and without altering either the quality or quantity of the gasoline or diesel fuel (40 CFR 80.2).

- *Gasoline Distributor* - any person who transports or stores, or causes the transportation or storage of gasoline or diesel fuel at any point between any gasoline refinery or importer's facility and any retail outlet or wholesale purchaser consumer facility (40 CFR 80.2).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *Heat Input* - heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (40 CFR 60.41(c)).

- *High-Pressure Appliance* - an appliance that uses a refrigerant with a boiling point between -50 and 10 ^{o}C (-122.004 and 50.004 ^{o}F) at atmospheric pressure (29.9 in. (75.946 cm) of mercury). This definition includes but is not limited to appliances using refrigerants -12, -22, -114, -500, or -502 (82 CFR 152(f)).

- *Household Waste* - includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing (40 CFR 60.51(a)).

- *Incinerator* - any furnace used in the process of burning solid waste for the purpose of reducing the volume of the waste by removing combustible matter (40 CFR 60.51).

- *Industrial Process Refrigeration* - means, for the purposes of 82 CFR 156(i), complex customized appliances used in the chemical, pharmaceutical, petrochemical and manufacturing industries. This sector also includes industrial ice machines and ice rinks (82 CFR 152(g)).

- *Institutional Waste* - includes materials discarded by hospitals, schools, nonmanufacturing activities at prisons, and government facilities (40 CFR 60.51(a)).

- *Large Municipal Waste Combustor (MWC)* - a MWC plant with a capacity of greater than 225 megagrams (Mg)/day (250 tons/day) of municipal solid waste (40 CFR 60.51(a)).

- *Lignite* - coal that is classified as lignite A or B according to the American Society for Testing and Material (ASTM) (40 CFR 60.41(a)).

- *Low-Loss Fitting* - any device that is intended to establish a connection between hoses, appliances, or recovery or recycling machines and that is designed to close automatically or to be closed manually when disconnected, minimizing the release of refrigerant from hoses, appliances, and recovery or recycling machines (82 CFR 152(h)).

- *Low-Pressure Appliance* - an appliance that uses a refrigerant with a boiling point above 10 ^{o}C (50.004 ^{o}F) at atmospheric pressure (29.9 in. (75.946 cm) of mercury). This definition includes but is not limited to equipment utilizing refrigerants -11, -113, and -123 (82 CFR 152(i)).

- *Major Maintenance, Service, Or Repair* - any maintenance, service, or repair involving the removal of any or all of the following appliance components (82 CFR 152(j)):
    1. compressor
    2. condenser
    3. evaporator
    4. auxiliary heat exchanger coil.

- *Maximum Heat Input Capacity of a Steam Generating Unit* - is determined by operating the facility at maximum capacity for 24 h and using the heat loss method described in Sections 5 and 7.3 of the American Society of Mechanical Engineers (ASME) *Power Test Codes* 4.1 (see 40 CFR 60.17(h)) no later than

180 days after initial startup of the facility and within 60 days after reaching maximum production rate at which the facility will be operated (40 CFR 60.51(a)).

- *Medical Waste* - when defined as applicable to municipal waste combustors, it is any solid waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in production or testing of biologicals. Medical waste does not include any hazardous waste identified under RCRA-C or any household waste as defined in RCRA-C (40 CFR 60.51(a)).

- *Modification* - in relation to New Source Performance Standards (NSPS), any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies except:
  - maintenance, repair and replacement which the Administrator determines to be routine for a source category
  - an increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on that facility
  - an increase in the hours of operation
  - use of an alternate fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, the existing facility was designed to accommodate that alternate use. A facility will be designed to accommodate an alternative fuel an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as assessed prior to the change (40 CFR 60.14).

- *Motor Vehicle Air Conditioner (MVAC)* - any appliance that is a motor vehicle air conditioner as defined in 40 CFR 82, subpart B (82 CFR 152(k)).

- *Municipal Type Solid Waste* - household, commercial/retail, and/or institutional waste. Household, commercial/retail, and institutional wastes do not include sewage, wood pallets, construction and demolition wastes, or industrial process or manufacturing wastes. Municipal solid waste does include motor vehicle maintenance materials, limited to vehicle batteries, used motor oil, and tires.

  Municipal solid waste does not include wastes that are solely segregated medical wastes, but any mixture of segregated medical wastes and other wastes that contains more than 30 percent medical waste is considered municipal solid waste (40 CFR 60.51(a)).

- *Municipal Waste Combustor (MWC)* - any device that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected incinerators, modular incinerators, boilers, furnaces, and gasification/combustion

units. This does not include combustion units, engines, or other devices that combust landfill gases collected by landfill gas collection systems (40 CFR 60.51(a)).

- *MVAC-Like Appliance* - mechanical vapor compression, open-drive compressor appliances used to cool the driver or passenger compartment of a nonroad motor vehicle. This includes the air conditioning equipment found on agricultural or construction vehicles. This definition is not intended to cover appliances using HCFC-22 refrigerant (82 CFR 152(l)).

- *Nitric Acid Production Unit* - any facility producing nitric acid which is 30 to 70 percent in strength by either the pressure or atmospheric pressure process (40 CFR 60.70).

- *Normally Containing A Quantity Of Refrigerant* - containing the quantity of refrigerant within the appliance or appliance component when the appliance is operating with a full charge of refrigerant (82 CFR 152(m)).

- *Opacity* - the degree to which emissions reduce the transmission of light and obscure view of an object in the background (40 CFR 60.2).

- *Opening An Appliance* - any service, maintenance, or repair on an appliance that could be reasonably expected to release refrigerant from the appliance to the atmosphere unless the refrigerant were previously recovered from the appliance (82 CFR 152(n)).

- *Particulate Matter Emissions* - any airborne finely divided solid or liquid material except uncombined water, emitted to the ambient air (40 CFR 60.2).

- *Petroleum Dry Cleaner* - a dry cleaning facility that uses petroleum solvent in a combination of washers, dryers, filters, stills, and settling tanks (40 CFR 60.621).

- PM_{10} - particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (μm)(40 CFR 58.1).

- *Process Stub* - a length of tubing that provides access to the refrigerant inside a small appliance or room air conditioner and that can be resealed at the conclusion of repair or service (82 CFR 152(p)).

- *Publication Rotogravure Printing* - any number of rotogravure printing units capable of printing simultaneously on the same continuous web or substrate and includes any associated device for continuous cutting and folding the printed web, where the following sellable paper products are printed: catalogues; direct mail advertisements; display advertisements; magazines; miscellaneous

advertisements including brochures, pamphlets, catalogue sheets, circular folders, and announcements; newspapers; periodicals; and telephone and other directories (40 CFR 60.431).

- *Refuse Derived Fuel* - combustible or organic portion of municipal waste that has been separated out and processed for use as fuel (40 CFR 60.51(a)).

- *Reid Vapor Pressure* - the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquefied petroleum gases as determined by the ASTM, Part 17, 1973, D-323-72 (reapproved 1977) (40 CFR 60.111(a)).

- *Self-Contained Recovery Equipment* - refrigerant recovery or recycling equipment that is capable of removing the refrigerant from an appliance without the assistance of components contained in the appliance (82 CFR 152(u)).

- *Small Appliance* - any of the following products that are fully manufactured, charged, and hermetically sealed in a factory with 5 lb or less of refrigerant (82 CFR 152(v)):
    1. refrigerators designed for home use
    2. freezers designed for home use
    3. room air conditioners (including window air conditioners and packaged terminal air conditioners)
    4. packaged terminal heat pumps
    5. dehumidifiers
    6. under-the-counter ice makers
    7. vending machines
    8. drinking water coolers.

- *Stationary Gas Turbines* - any simple cycle gas turbine, regenerative cycle gas turbine, or any gas turbine portion of a combined cycle steam/electric generating system that is not self-propelled. It may be mounted on a vehicle for portability (40 CFR 60.331).

- *Sulfuric Acid Production Unit* - any facility producing sulfuric acids by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge, but does not include facilities where conversion to sulfuric acid is used primarily as a means of preventing emissions to the atmosphere of SO_2 or other sulfur compounds (40 CFR 60.81).

- *System-Dependent Recovery Equipment* - refrigerant recovery equipment that requires the assistance of components contained in an appliance to remove the refrigerant from the appliance (82 CFR 152(w)).

- *Technician* - any person who performs maintenance, service, or repair that could reasonably be expected to release class I or class II substances from appliances into the atmosphere, including but not limited to installers, contractor employees, in-house service personnel, and in some cases, owners. Technician also means any person disposing of appliances except for small appliances (82 CFR 152(x)).

- *True Vapor Pressure* - the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, *Evaporation Loss From Floating Roof Tanks*, 1962 (40 CFR 60.111(a)).

- *Very Low Sulfur Oil* - an oil that contains no more than 0.5 weight percent sulfur or SO_2 emission rate equal to or less than 0.5 lb/MBtu heat input (40 CFR 60.41(b)).

- *Very High-Pressure Appliance* - an appliance that uses a refrigerant with a boiling point below -50 ^{o}C (-122.004 ^{o}F) at atmospheric pressure (29.9 in. (75.946 cm) of mercury). This definition includes but is not limited to equipment utilizing refrigerants -13 and -503 (82 CFR 152(y)).

- *VHAP Service* - a piece of equipment that either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight a volatile hazardous air pollutant (VHAP) (40 CFR 61.241).

- *VOC Service* - in relationship to fugitive emissions, this is when a piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight (40 CFR 61.241).

- *Volatile Hazardous Air Pollutant (VHAP)* - a substance regulated under 40 CFR 61; Subpart V for which a standard for equipment leaks of the substance has been proposed and promulgated. Benzene and vinyl chloride are VHAPs (40 CFR 61.241).

- *Volatile Organic Compound (VOC)* - any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions (40 CFR 51.100).

CLEAN AIR ACT (CAA)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All installations	1-1 through 1-7	(1)(2)(3)(4)
If the installation operates a fuel burner (central steam plant, or hot water or steam boilers)	1-8 and 1-9	(2)(3)
Steam Generators	1-10 through 1-18	(1)(2)(9)
Gas Turbines	1-19	(1)(2)
Municipal Waste Combustors	1-20 and 1-21	(1)(2)(9)
Incinerators	1-22 through 1-24	(1)(2)(9)
Gasoline	1-25 through 1-30	(1)(6)(30)
Printing Presses	1-31	(1)(2)(6)
POL Storage Vessels	1-32 through 1-35	(1)(2)(6)(9)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(3) Preventive Medicine
(4) Safety and Health Officer
(6) Director of Logistics (DOL)
(9) Chief Operations and Maintenance (O&M)
(30) Army and Air Force Exchange Service (AAFES)

CLEAN AIR ACT (CAA)

GUIDANCE FOR WORKSHEET USERS
(continued)

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
Drycleaning	1-36	(1)(2)(9)
Acid Production Units	1-37 and 1-38	(1)(2)(9)
CFCs or Halons	1-39 through 1-45	(2)
Refrigerant	1-46 through 1-59	(2)
Recordkeeping	1-60 and 1-61	(2)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(3) Preventive Medicine
(4) Safety and Health Officer
(6) Director of Logistics (DOL)
(9) Chief Operations and Maintenance (O&M)
(30) Army and Air Force Exchange Service (AAFES)

CLEAN AIR ACT (CAA)

Plans and Maps to Review

- Plans and procedures applicable to air pollution control
- Emergency episode plan if required by the state
- Military Construction Army (MCA) development and construction plans for new facilities proposed and copies of air pollution abatement plans for these as well as existing sources requiring control. Mobile source data, number of vehicles, and traffic counts for major thoroughfares if available
- SPCC and ISCP Plan

Records to Review

- State and local air pollution control regulations
- State and local protocol supply
- Agency air pollution control regulations
- Emissions inventory (OMB Form 158-R75)
- All air pollution source permits
- Emission monitoring records and sampling data
- Opacity records
- Results of air sampling at the end of a response action
- Notifications of violations to regulatory authorities
- Instrument calibration and maintenance records
- Reports/complaints concerning air quality
- State and/or Federal regulatory inspections, inquiries, or other communications
- Regulatory inspection reports
- Documentation of preventive measure or action
- Results of air sampling at the conclusion of response action
- For installations with transportation control requirements, mobile source data, number of vehicles, and traffic counts for major thoroughfares

Physical Features to Examine

- All air pollution sources (fuel burners, incinerators, VOC sources, etc.)
- Air pollution monitoring and control devices
- Air emission stacks and POL storage tank vents
- Air intake vents
- Paint spray booth
- Maintenance shops (vehicle and aircraft)

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Preventive Medicine
- Safety and Health Officer
- Director of Logistics (DOL)
- Chief Operations and Maintenance (O&M)
- Army and Air Force Exchange Service (AAFES)
- Any tenant activity environmental coordinators

Air Pollution Sources Found at Army Installations

Heat/Steam/Energy Production
-coal-fired power plants
-package boilers
-diesel generators
-emergency generators
-peak shaving generators
-turbines

Petroleum Product Storage and Transport
-tank farms
-gasoline service stations
-loading racks
-tanker transfer
-underground storage tanks
-aboveground storage tanks

Graphic Arts
-letterpress
-rotogravure
-offset lithography
-silkscreening

Degreasing Operations (Opns)
-vapor degreasers
-cold solvent cleaning
-solvent dip tanks

Surface Coating Operations
-paint booths
-metal parts coating lines
-furniture refinishing
-architectural coatings
-traffic striping
Paint stripping operations
Drycleaning operations
Photoprocessing operations
Training aid support centers (TASC)
Chemical recycling and recovery

Waste Disposal
-incineration of medical/ pathological/hazardous waste
-open burning/open detonation
-landfills
-surface impoundments
-landfarms/bioremediation

Firing Ranges
-artillery
-small caliber weapons

Air-conditioning/refrigeration shops
Pesticide/herbicide applications
Asphalt production
Wastewater treatment plants
Controlled forest and agricultural burning
Firefighter training burns
Smoke generators
Engine test cells/dynamometers
Ethylene oxide sterilizers
Laboratory hood vents
Sandblasting operations
Woodworking operations
Quarries
Plastics production
Explosive and munitions production
Acid production
Forging and annealing operation
Metal treatment and plating
Waferboard manufacturing
Foam packing operations
Unpaved roads
Storage piles
Storage silos

(NOTE: Emission from some of these sources are not addressed under the CAA. Checklist items pertaining to emissions from source regulated by other laws or statutes are included in the sections concerning these laws.)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
1-1. Determine actions or changes since previous review of air emissions (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)(2)
...	...
1-2. Copies of all relevant Federal regulations, DOD, Army Regulations, and guidance documents on air emissions should be maintained at the installation (GMP).	Verify that copies of the following regulations, which are applicable, are maintained and kept current at the installation: (1)(2)(3)(4) 40 CFR 60, *Standards of Performance for New Stationary Sources.* - 40 CFR 61, *National Emission Standards for Hazardous Air Pollution.* - 40 CFR 80, *Regulation of Fuels and Fuel Additives.* - 40 CFR 82, *Protection of Stratospheric Ozones.* - EO 12088, *Federal Compliance with Pollution Standards.* - DOD 4120.14, *Environmental Pollution Prevention, Control, and Abatement.* - DOD 6050.9, *Chlorofluorocarbons (CFCs) and Halons.* - AR 40-5, *Preventive Medicine.* - AR 200-1, *Environmental Protection and Enhancement.* - AR 420-15, *Certification of Utility Plant Operators and Personnel Performing Inspection and Testing of Vertical Lift Devices.* - AR 420-49, *Heating, Energy Selection, Fuel Storage, Distribution, and Dispensing Systems.* - TB MED 502, *Occupational and Environmental Health: Respiratory Protection Program.* - TB MED 513, *Occupational and Environmental Health Guidelines for the Evaluation and Control of Asbestos Exposure.* - TM 5-815, *Air Pollution Control Systems for Boilers.* - OMB Form 158-R75, *USEPA Air Pollutant Emissions Report.* - Applicable state and local regulations.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-3. Installations are required to comply with all applicable state and local air quality requirements (CAA, 42 USC 7418(a)).	Verify that the installation is abiding by state and local air quality requirements. (1) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2) (NOTE: Issues typically regulated by state and local agencies include: - air pollution episode standby plans - permits for construction and operation of sources of emissions - placement of control devices on fuel burning sources - incinerators with less than 50 tons per day heat input - incinerations of medical, pathological, and infectious waste - open burning and detonation - fire fighting training - motor vehicle emissions and inspections - use of vapor control systems at gas dispensing facilities - transfer of fuel in tank trucks - solvent metal cleaners such as degreasers and cold cleaners - perchloroethylene drycleaners - fugitive dust emissions - control of particulate emissions from woodworking shops - transportation of refuse or materials in open vehicles - emissions and emission control requirements for the operation of existing fossil fuel-fired steam generators - the spray painting of vehicles, buildings, and/or furniture - certification of vehicles transporting VOC liquids - certification for operators of boilers - paving of roads and parking lots - toxic air pollutants - indoor air pollution.) (NOTE: Under 42 USC 7418(c) and 7418(d) each department, agency, and instrumentality of executive, legislative, and judicial branches of the Federal Government are required to comply with valid vehicle inspection and maintenance programs except for vehicles that are considered military tactical vehicles. Also, all employees operating vehicles on a property or a facility over which the Federal Government has jurisdiction are required to furnish proof of compliance with applicable requirements of any valid vehicle inspection and maintenance programs.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weaknesses in the overall operation of the program (GMP).	Determine what management systems are in place. (1) Verify that the existing system addresses the issues associated with the *CAA* by: (1) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)
...	...
1-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning air quality have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...
1-6. Preventive Medicine personnel at each installation are required to conduct and maintain an up-to-date emissions inventory listing all stationary sources of air pollution and inspect stationary air pollution sources periodically to assess compliance with applicable standards (AR 40-5, para 11-4b and AR 200-1, para 1-25c(1)).	Determine whether an emission inventory has been completed or updated recently. (3) Examine emission inventory for completeness and compare inventory to any permits issued to ensure all recent changes/modifications have been included. (1)(3) Verify that periodic updates of the air emissions inventory are conducted. (3) Verify that Preventive Medicine personnel inspect stationary air sources periodically to assess compliance. (3) Determine if all sources of contaminants are accounted for by comparing the site inventory with knowledge gained from site tour and field work. (3)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-7. An inventory of volatile organic compounds (VOCs) and hazardous air pollutants should have been done at the installation (GMP).	Verify that an inventory of VOCs and hazardous air pollutants has been done. (3)
...	...
FUEL BURNING FACILITIES	
1-8. All fuel burning facilities will be equipped with air pollution abatement equipment or will use the type of fuel necessary to achieve environmental pollution abatement (AR 420-49, para 2-2a).	Determine if the installation has any fuel burning facilities. (2)(3) Verify that fuel burning facilities are equipped with pollution abatement equipment or are operating with the cleanest possible fuel. (2)(3)
...	...
1-9. Operating engineers are required to be certified (AR 420-49, para 2-6b).	Verify that operating engineers in central heating plants are certified according to AR 420-15. (2)(3) Verify that operators of smaller boilers and heating equipment posses a valid DA Form 3941 (Certificate of Proficiency) of local equivalent certification approved by the DEH. (2)(3)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
STEAM GENERATORS	
1-10. Each fossil fuel fired steam generating unit of more than 250 MBtu/h (73 megawatts (MW)) per hour heat input rate and each fossil fuel and wood-residue fired steam generating unit capable of firing fossil fuel at a heat input rate of more than 250 MBtu/h (73 MW/h) heat input rate that started construction or modification after 17 August 1971 is required to meet specific emission standards (40 CFR 60.40 and 60.42 through 60.44).	Verify that: (2)(9) - opacity emissions are less than 20 percent except one 6-minute (min) period of no greater than 27 percent/h - particulate emissions are not in excess of 0.10 lb/MBtu - SO_2 emissions do not exceed levels outlined in Appendix 1-1 - NO_x emissions do not exceed levels outlines in Appendix 1-1. Verify that the individual conducting opacity monitoring is certified by the state. (1)(2) (NOTE: Any change to an existing fossil fuel fired steam generating unit to accommodate the use of combustible materials does not bring that unit under the application of these requirements.)
...	...
1-11. Each fossil fuel fired steam generating unit of more than 250 MBtu/h (73 MW) heat input rate and each fossil fuel and wood-residue fired steam generating unit capable of firing fossil fuel at a heat input rate of more than 250 MBtu/h (73 MW) heat input rate that started construction or modification after 17 August 1971 is required to have specific types of monitoring instruments installed (40 CFR 60.40 and 60.45).	Verify that the following monitors are in place: (9) - NO_2 continuous monitor - opacity monitor (except in gaseous fuel burners) - SO_2 monitor (except for fossil fuel-fired steam generators not using a fuel gas desulfurization device and gaseous fuel burners) - fuel sampling monitor when SO_2 monitor is not required - CO_2 or O_2 monitors (except when continuous monitoring systems are not required to be installed for SO_2 or NO_x). Examine the monitor recording charts for normal operational procedures. (1)(2)(9) Verify that fuel consumption and electrical steam output instruments are: (9) - correctly installed and operating - the instruments are calibrated every 24 h monitoring records are maintained for 2 yr. Verify that records of fuel analysis are maintained and contain: (9) - sulfur content - ash content - heating value. (NOTE: Any change to an existing fossil fuel fired steam generating unit to accommodate the use of combustible materials does not bring that unit under the application of these requirements.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-12. Lignite fired steam generating units that started construction or modification after 22 December 1976 are required to meet specific emissions limitation for NO_x (40 CFR 60.40(d), 60.44(a)(4), and 60.44 (a)(5)).	Verify that NO_x are not emitted in excess of 0.60 pounds (lb) per MBtu (260 nanograms per joule (ng/J)) heat input except for lignite mined in North Dakota, South Dakota or Montana which is burned in a cyclone fired unit which is allowed an emission rate of 0.80 lb per MBtu (340 ng/J) heat input. (9)
...	...

1-13. Steam generating units that started construction, modification (see definitions), or reconstruction after 19 June 1984 with a heat input capacity of greater than 100 MBtu/h shall meet specific emissions limitations for particulates and SO_2 (40 CFR 60.40(b) through 60.43(b) and 60.45(b) through 60.49(b)).	Determine if the facility burns coal, oil, wood, or a combination of fuels. (1)(2)
	
	Determine what percentage of the fuel mix each fuel type represents. (1)(2)
	
	Verify that facilities combusting coal or oil are not discharging gases into the atmosphere if the gases contain SO_2 in excess of 10 percent of the potential SO_2 emission rate (90 percent reduction) and that contain SO_2 in excess of the emission limit determined according to the formula in Appendix 1-2 unless: (1)(2)
	
	- the facility combusts coal refuse alone in a fluidized bed combustion steam generating unit whereby an 80 percent reduction is required
	- the facility combusts coal and oil, either alone or in combination with any other fuel, and uses emerging technology for SO_2 emissions control so that gases are not discharged that contain in excess of 50 percent of the potential SO_2 emission rate and that contain SO_2 in excess of the emission limit determined according to the formula in Appendix 1-2
	- they are in the following list whereby they cannot emit gases that contain SO_2 in excess of 1.2 MBtu heat input if the facility combusts coal or 0.5 lb/MBtu heat input if the affected facility combusts oil:
	  - facilities that have an annual capacity factor for coal or oil of 30 percent or less and are subject to a Federally enforceable permit limiting the operation of the facility to an annual capacity factor of 30 percent or less
	  - facilities located in noncontinental areas
	  - affected facilities combusting coal or oil, alone or in combination with any other fuel, in a duct burner as a part of a combined cycle system where 30 percent or less of the heat input to the steam generating unit is from combustion of coal and oil in the duct burner and 70 percent or more of the heat input to the steam generating unit if from the exhaust gases entering the duct burner.
	
	(NOTE: Typically, state regulations or state-issued permits set an emission limit for SO_2.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-13. (continued)	Verify that the particulate matter standards outlined in Appendix 1-3 are being met. (1)(2) (NOTE: These particulate standards also apply to: - coal-fired facilities with a heat input capacity 100 and 250 MBtu that were constructed, modified, or reconstructed after 19 June 1984 but before 19 June 1986 - coal-fired facilities with a heat input capacity greater than 250 MBtu/h that started construction, modification, or reconstruction between 19 June 1984 and 19 June 1986 - incinerators over 50 tons/day charging rate.) Verify that records are being kept of the amounts of each fuel combusted during each day and the emissions. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-14. Steam generating units that started construction, modification, or reconstruction after 19 June 1984 with a heat input capacity of greater than 100 MBtu/h shall meet specific emissions limitations for NO_x (40 CFR 60.40(b) through 60.44(b)).	Verify that facilities that combust only coal, oil, or natural gas meet the NO_x standards outlined in Appendix 1-4 unless the facility simultaneously combusts coal or oil in a mixture with natural gas, and wood, municipal solid waste, or any other fuel and has an annual capacity factor for coal or oil or a mixture of these fuels with natural gas of 10 percent or less, or the facility has a heat input capacity of 250 MBtu/h heat input or less that: (1)(2)(9) - only fires natural gas, distillate oil, or residual oil with a maximum nitrogen content of 0.30 percent weight - has a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less, and - are subject to a Federally enforceable requirement limiting operation of the facility to the firing of natural gas, distillate oil, and/or residual oil with a nitrogen content of 0.30 percent weight and limiting the operations to a combined annual capacity of 10 percent or less for natural gas, distillate oil, and residual oil and a nitrogen content of 0.30 percent weight. Verify that facilities that simultaneously combust mixtures of coal, oil, or natural gas do not discharge NO_x in excess of the limit determined by using the formula found in Appendix 1-2 unless the facility combusts simultaneously coal or oil, or a mixture of these fuels with natural gas, and wood, municipal solid waste, or any other fuel and has an annual capacity factor for coal or oil, or mixture of these fuels with natural gas of 10 percent or less. (1)(2)(9) Verify that NO_x are not discharged in excess of 0.30 lb/MBtu heat input if the facility simultaneously combusts natural gas with wood, municipal solid waste, or other solid fuel, except coal. Exempted are facilities that have an annual capacity factor for natural gas of 10 percent or less and are subject to a Federally enforceable requirements that limits operation of the affected facility to an annual capacity factor of 10 percent or less for natural gas. (1)(2)(9) Verify that facilities that simultaneously combust coal, oil, or natural gas with byproduct/waste do not discharge NO_x in excess of the limit determined by using the formula in Appendix 1-2 unless the facility has an annual capacity factor for coal, oil, and natural gas of 10 percent or less and is subject to a Federally enforceable requirement that limits the operation of the facility to an annual capacity factor of 10 percent or less. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-15. Steam generating units which started construction, modification, or reconstruction after 3 June 1989 with a maximum design heat input capacity of greater than or equal to 10 MBtu but less than 100 MBtu are required to meet specific standards for emissions of SO_2 (40 CFR 60.40(c) and 60.42(c)).	Determine if the installation operates steam generating units which started construction, modification, or reconstruction after 3 June 1989 with a maximum heat input capacity of greater than or equal to 10 MBtu but less than 100 MBtu. (1)(2)(9) Verify that facilities which combust only coal do not: (1)(2)(9) - discharge into the atmosphere gases containing SO_2 in excess of 10 percent of the potential SO_2 emission rate (a 90 percent reduction) - discharge gases containing SO_2 in excess of 520 ng/J (1.2 lb/MBtu) heat input. Verify that facilities which combust coal and use an emerging technology do not: (1)(2)(9) - discharge into the atmosphere gases containing SO_2 in excess of 50 percent of the potential SO_2 emission rate (a 50 percent reduction) - discharge gases that contain SO_2 in excess of 260 ng/J (0.60 lb/MBtu) heat input. Verify that facilities which combust coal in combination with other fuels do not: (1)(2)(9) - discharge into the atmosphere gases containing SO_2 in excess of 10 percent of the potential SO_2 emission rate (a 90 percent reduction) - discharge gases containing SO_2 in excess of the emissions limit determined by the formula outlined in Appendix 1-5. Verify that facilities which combust coal in combination with other fuels and use emerging technology do not: (1)(2)(9) - discharge gases containing SO_2 in excess of 50 percent of the potential SO_2 emission rate (a 50 percent reduction) - discharge gases containing SO_2 in excess of the emission limit determined by the formula outlined in Appendix 1-5. Verify that facilities which combust coal refuse alone or in a fluidized bed combustion steam generating unit do not: (1)(2)(9) - discharge gases containing SO_2 in excess of 20 percent of the potential SO_2 rate (an 80 percent reduction) - discharge gases containing SO_2 in excess of 520 ng/J (1.2 lb/MBtu) heat input. (NOTE: If the facility combusts coal with coal refuse the standards for facilities combusting coal are required to be met.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-15. (continued)	Verify that facilities which fire oil or any fuel other than coal with coal refuse do not: (1)(2)(9) - discharge into the atmosphere gases containing SO_2 in excess of 10 percent of the potential SO_2 emission rate (a 90 percent reduction) - discharge gases containing SO_2 in excess of the emissions limit determined by the formula in Appendix 1-5. Verify that a facility which meets one of the following criteria and combusts coal alone or in combination with any other fuel does not discharge SO_2 in excess of the emissions limit determined by the formula in Appendix 1-5: (1)(2)(9) - facilities with a heat input capacity of 75 MBtu or less - facilities that have an annual capacity for coal of 55 percent or less - facilities located in noncontinental areas - facilities that combust coal in a duct burner as a part of a combined cycle system where 30 percent or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent or more is from exhaust gases. Verify that facilities which combust oil meet one of the following: (1)(2)(9) - gases are not discharged that contain SO_2 in excess of 215 ng/J (0.50 lb/MBtu) heat input - no oil is combusted which contains greater than 0.5 weight percent sulfur.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-16. Steam generating units which started construction, modification, or reconstruction after 3 June 1989 with a maximum design heat input capacity of greater than or equal to 10 MBtu but less than 100 MBtu are required to meet specific standards for emissions of particulates (40 CFR 60.40(c) and 60.43(c)).	Verify that facilities which combust coal or mixtures of coal with other fuels and have a heat input capacity of 30 MBtu or greater do not discharge particulate matter in excess of the following: (1)(2)(9) - 22 ng/J (0.05 lb/MBtu) heat input if the facility combusts only coal or coal with other fuels and has an annual capacity factor for the other fuels of 10 percent - 43 ng/J (0.10 lb/MBtu) heat input if the facility combusts coal with other fuels, has an annual capacity factor greater than 10 percent for the other fuels. Verify that facilities which 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 the following: (1)(2)(9) - 43 ng/J (0.10 lb/MBtu) heat input if the facility has an annual capacity factor for wood greater than 30 percent - 130 ng/J (0.30 lb/MBtu) heat input if the facility has an annual capacity factor for wood of 30 percent or less. Verify that facilities that combust coal, wood, or oil with a heat input capacity of greater than 30 MBtu do not discharge gases with greater than 20 percent opacity (6 min average), except for one 6-min period per h of not more than 27 percent opacity. (1)(2)(9) (NOTE: Particulate matter and opacity standards apply at all times except during periods of startup shutdown, or malfunction.)
...	...
1-17. Steam generating units which started construction, modification, or reconstruction after 3 June 1989 with a maximum design heat input capacity of greater than or equal to 10 MBtu but less than 100 MBtu are required to meet specific monitoring standards for SO_2 and particulate matter (40 CFR 60.46(c) and 60.47(c)).	Verify that continuous emissions monitoring systems are installed, calibrated, maintained, and operated for measuring SO_2 concentrations and either oxygen or CO_2 concentrations at the outlet of the SO_2 control device or the outlet of the steam generating unit if no control device is used. (1)(2)(9) Verify that if continuous emissions monitoring systems for SO_2 are not used, the fuel is sampled prior to combustion. (1)(2)(9) Verify that a continuous monitoring system is installed, calibrated, maintained, and operated for measuring opacity. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-18. Steam generating units which started construction, modification, or reconstruction after 3 June 1989 with a maximum design heat input capacity of greater than or equal to 10 MBtu but less than 100 MBtu are required to meet specific reporting requirements (40 CFR 60.48(c)).	Verify that the installation submits excess emissions reports for any calendar quarter in which opacity limits are exceeded. (1)(2)(9) Verify that if there has been no excess opacity emissions, a semiannual report has been submitted stating there were no excess emissions. (1)(2)(9) Verify that facilities subject to the SO_2 emissions limits submit quarterly reports including: (1)(2)(9) - calendar dates covered in the report - each 30-day average SO_2 emission rate or 30-day average sulfur content - reasons for noncompliance - descriptions of any correction actions taken.
...	...
GAS TURBINES	
1-19. Stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules gJ/h, based on the lower heat value of the fuel fired, which started construction, modification, or reconstruction after 3 October 1977 are required to meet specific operations standards (40 CFR 60.330 through 60.335).	Verify that gases that contain NO_x are not emitted in excess of the amount calculated using Formula A in Appendix 1-6 from electric utility stationary gas turbines with a heat input at peak load greater than 100 MBtu/h heat input based on the lower heating value of the fuel fired. (1)(2) Verify that gases that contain NO_x are not emitted in excess of the amount calculated using Formula B in Appendix 1-6 from: (1)(2) - stationary gas turbines with a heat input at peak load equal to or greater than 10 MBtu/h heat input but less than or equal to 100 MBtu/h based on the lower heating value of the fuel fired except those with greater than 10 MBtu/h heat input that are fired with natural gas and are being fired in an emergency - stationary gas turbines with a manufacturer's rated base load at ISO conditions of 30 MW or less. Verify that gases are not discharged containing SO_2 in excess of 0.15 percent by volume at 15 percent oxygen and on a dry basis. (1)(2)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) *USA ECAS*	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-19. (continued) ...	(NOTE: The following sources are exempt from meeting the NO_x emissions limitations: - stationary gas turbines with a heat input at peak load greater than 10 MBtu/h input but less than or equal to 100 MBtu/h based on the lower heating value of the fuel fired and that started construction before 3 October 1982 - stationary gas turbines using water or steam injection for control of NO_x when ice fog is deemed a traffic hazard - emergency gas turbines, military gas turbines for use in other than a garrison facility, military gas turbines installed for use as military training facilities, and fire-fighting gas turbines - regenerative cycle gas turbines with a heat input less than or equal to 100 MBtu/h - stationary gas turbines, except electric utility stationary gas turbines, with a heat input at peak load of greater than 107.2 gJ/h that started construction, modification, or reconstruction between 3 October 1977 and 27 January 1982.) Verify that fuel stationary gas turbines using water injection to control NO_x emissions have installed and are operating a continuous monitoring system to monitor and record fuel consumption and the ratio of water to fuel being fired in the turbine. (1)(2) Verify that the sulfur content and nitrogen content of the fuel being fired is being monitored. (1)(2) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
MUNICIPAL WASTE COMBUSTORS **1-20.** Municipal waste combustors with a capacity greater than 225 Mg/day (250 tons/day) of municipal solid waste or refuse-derived fuel which started construction or modification after 20 December 1989 are required to meet specific operational standards (40 CFR 60.50(a) through 60.58(a)). ...	(NOTE: Exempted from these requirements are: - affected facilities that combust tires or fuel derived solely from tires and do not combust any other municipal solid waste or refuse derived fuel - cofired combustors - cofired combustors that are subject to a Federally enforceable permit limiting the operation of the combustor to no more than 225 Mg/day (250 tons) of municipal solid waste or refuse derived fuel - municipal waste combustors only combusting medical waste.) Verify that gases are not discharged that contain the following constituents in excess of the least stringent amount listed: (1)(2) - dioxin/furan in excess of 30 ng per dry standard cubic meter (m^3) (12 grains per billion dry standard cubic feet (cu ft)), corrected to 7 percent oxygen (dry basis) - SO_2 in excess of 20 percent of the potential SO_2 emission rate or 30 parts per million (ppm) by volume, corrected to 7 percent oxygen - 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 oxygen (dry basis) - NO_x emissions in excess of 180 ppm by volume corrected to 7 percent oxygen (dry basis). Verify that facilities meet the operating standards for CO emissions outlined in Appendix 1-7. (1)(2) Verify that the following operating practices are implemented: (1)(2) - 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 above the maximum demonstrated particulate matter control device temperature. Verify that actions are being taken to ensure that by 11 February 1993 or within 24 months (mo) after the startup of operation (whichever is later) each chief facility operator and shift supervisor is certified. (1)(2) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-21. Municipal waste combustors with a capacity greater than 225 Mg/day (250 tons/day) of municipal solid waste or refuse-derived fuel which started construction or modification after 20 December 1989 are required to meet specific notification and record keeping requirements (40 CFR 60.50(a) through 60.58(a)).	(NOTE: Exempted from these requirements are: - affected facilities that combust tires or fuel derived solely from tires and do not combust any other municipal solid waste or refuse derived fuel - cofired combustors - cofired combustors that are subject to a Federally enforceable permit limiting the operation of the combustor to no more than 225 Mg/day (250 tons/day) of municipal solid waste or refuse derived fuel - municipal waste combustors only combusting medical waste.) Verify that an operating manual is at the facility which is updated yearly and indicates: (1)(2) - applicable standards - procedures for receiving, handling, and feeding municipal solid waste - startup, shutdown, and malfunction procedures - operational provisions for meeting emission standards - response procedures for emergency situations - monitoring procedures - procedures for handling ash - reporting and recordkeeping requirements. Verify that if a new facility is starting to operate a notice to construct, planned startup date, and fuels to be used at the facility was provided to the USEPA. This notification requirement also applies to cofired combustors and facilities which burn tires only. (1)(2) Verify that the following reports are submitted to the USEPA Administrator: (1)(2) - quarterly compliance reports - quarterly excess emissions reports - annual performance tests results - quarterly reports of the daily weights of municipal solid waste and each other fuel fired when records of this information is required to be kept.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-21. (continued)	Verify that the following records are maintained for 2 yr: (1)(2) - emissions rates - dates when excess emissions were identified and reason for excess emissions - operating days when the minimum numbers of hours of SO_2 or NO_x emissions or 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 rates or parameters and the reason for exclusion - results of daily SO_2, NO_x, and CO continuous emission monitoring systems drift tests and accuracy assessments - results of all annual performance tests - continuous emissions monitoring data for opacity, SO_2, NO_x, and CO, load level data, and particulate matter control device temperature data - names of the persons who have completed the review of the operating manual - weights of municipal solid waste and other fuel combusted when being used in a cofired combustor with a municipal waste capacity greater than 225 Mg/day (250 tons) - the amount of nonmedical and medical waste combusted on a daily basis for combustors firing both medical waste and other municipal solid waste unless it is assumed that the total heat input to the combustor is from municipal solid waste with a design heating value of 10,500 kilojoules per kilogram (kJ/kg) (4500 Btu/lb).
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
INCINERATORS	
1-22. Incinerators over 50 tons/day charging rate that started construction or modification after 17 August 1971 are required to meet specific emission limitations (40 CFR 60.50 through 60.54).	Verify that the limitations outlined in Appendix 1-1 are met. (1)(2) Observe incinerator emissions and determine if further evaluation of the opacity may be required. (9)
...	...
1-23. Incinerators that started construction or modification after 11 June 1973 that combust waste containing more than 10 percent sewage sludge (dry basis) produced by municipal sewage treatment plants, or those that started construction or modification after 11 June 1973 which charge more than 1000 kg/day (2205 lb/day) municipal sewage sludge (dry basis) are required to meet specific emission standards (40 CFR 60.150 through 60.156).	Verify that particulate matter is not discharged in excess of 0.65 g/kg dry sludge input (1.30 lb/ton dry sludge input). (1)(2)(9) Verify that the opacity of emissions does not exceed 20 percent. (1)(2)(9) Verify that, except on multiple hearth, fluidized bed, or electric sludge incinerators with a particulate emission rate less than or equal to 0.38 g/kg (0.75 lb/ton) of dry sludge input, a continuously operating flow measuring device to determine either the mass or volume of sludge charged to the incinerator is in place, maintained, and properly calibrated. (1)(2)(9) Verify that a weighing device is available to determine the mass of any municipal solid waste charged to the incinerator when sewage sludge and municipal solid waste are incinerated together. (1)(2)(9) Verify that multiple hearth, fluidized bed, or electric sludge incinerators equipped with a wet scrubbing device have a continuously operating monitoring device that is calibrated annually to measure and record the pressure drop of the gas flow through the wet scrubbing device. (1)(2)(9) Verify that a monitoring device, which is calibrated at least once every 24 h, is in place and continuously measures and records the oxygen content of the multiple hearth, fluidized bed, or electric sludge incinerators exhaust gas. (1)(2)(9) Verify that at least one continuously operating temperature measuring device is installed on every hearth in the cooling and drying zones of multiple hearth furnaces and two thermocouples are installed in each hearth in the combustion zone. (1)(2)(9) Verify that at least one continuously operating temperature measuring device is installed in the drying zone and one on the cooling zone, and a minimum of two in the combustion zones of electric furnaces. (1)(2)(9)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-23. (continued)	Verify that a continuously operating fuel flow measuring device is operating on multiple hearth, fluidized bed, or electric sludge incinerators. (1)(2)(9) Verify that, for multiple hearth, fluidized bed, or electric sludge incinerators except those that emit particulates less than 0.38 g/kg (0.75 lb/ton) of dry sludge input, a grab sample of the sludge is collected and analyzed every day for the dry sludge content and the volatile solids content. (1)(2)(9) Verify that for multiple hearth, fluidized bed, or electric sludge incinerators, except for those that emit particulates less than 0.38 g/kg of dry sludge input (0.75 lb/ton), records are kept for 2 yr of the following: (1)(2) - the measured oxygen content of the exhaust gas - the rate of sludge charged, the temperatures, fuel flow, and total solids and volatile solids - the measured pressure drop of the gas flow through the wet scrubbing device (if present). Verify that the operator of any multiple hearth, fluidized bed, or electric sludge incinerator submits a report semiannually detailing the operations of the facility. (1)(2)
...	...
1-24. Incinerators that process beryllium-containing waste, beryllium, beryllium oxide, or beryllium alloys are required to meet specific standards (40 CFR 61.30 through 61.34).	Verify that emissions to the atmosphere do not exceed 10 g of beryllium over a 24-h period unless approval has been received for a larger quantity of emissions. (1)(2) Verify that emissions testing is done within 90 days of the startup of a new source. (1)(2) Verify that monitoring sites are operated continuously. (1)(2)(9) Verify that records of the emissions testing results are kept and made available for 2 yr. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
GASOLINE	
1-25. Leaded gasoline shall not be introduced into any motor vehicle that is labeled "unleaded gasoline only," or that is equipped with a gasoline tank filler inlet designed for introduction of unleaded gasoline (40 CFR 80.22(a)).	Interview DOL to determine what grades of gasoline are used, where they are dispensed, and what controls are in place to ensure proper fueling of vehicles. (6)
...	...
1-26. Fuel pumps are required to display specific signs (40 CFR 80.22(d) and 80.22(e)).	Inspect the installation gas stations to ensure that: (6)(30) - signs stating that only unleaded gas should be introduced into vehicles labeled unleaded are displayed at each pump stand - nozzles are properly sized - each fuel pump is labeled indicating the type of fuel, i.e., "unleaded gasoline" or "contains lead anti-knock compounds."
...	...
1-27. Gasoline pumps dispensing oxygenated gasoline are required to meet specific labeling requirements (40 CFR 80.35)	Determine if the installation is located in an area with an oxygenated gasoline program with a minimum oxygen content per gal or minimum oxygen content requirements in conjunction with a credit program. (6)(30) Verify that if the installation is located in such an area each gasoline pump dispensing oxygenated gasoline at a retail outlet has a label attached suring the control period that states *The gasoline dispensed from this pump is oxygenated and will reduce carbon monoxide pollution from motor vehicles.* (6)(30) Verify that if the installation is located in an area with an oxygenated gasoline program with a credit program and no minimum oxygen content requirement the fuel pump at a retail outlet in the control area has the following label *The fuel dispensed from this pump meets the requirements of the CAA as part of a program to reduce carbon monoxide pollution from motor vehicles.* (6)(30) (NOTE: Consult with state and local authorities concerning control areas and control periods.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-28. During 1992 and later high ozone seasons and regulatory control periods gasoline shall not be sold, offered for sale, imported, dispensed, supplied, or transported that exceeds specific Reid vapor pressure standards (40 CFR 80.27(a)(2) and 80.80(d)).	Identify the types of facilities to be monitored at the installation and verify that they are monitored as indicated: (6)(30) - retailers and wholesale purchaser-consumers: during the high ozone season (1 June to 15 September of any year) - importers, distributors, resellers, or carriers: during the regulatory control period (1 May to 15 September of any year). Verify that a standard of 9.0 psi is not exceeded for all designated volatility attainment areas. (6)(30) Verify that the standards outlined in Appendix 1-8 are met for any designated volatility nonattainment areas (see 40 CFR 81). (6)(30) (NOTE: Gasoline which contains denatured, anhydrous ethanol of at least 9 percent and no more than 10 percent may exceed the Reid vapor pressure standards outlined in Appendix 1-8 by 1 pound (lb).)
...	...
1-29. As of 1 October 1993 no diesel fuel shall be distributed, transported, offered for sale, or dispensed for use in motor vehicles unless it is free of the dye 1,4-dialkylamino-anthra quinone and has an octane index of at least 40 or a maximum aromatic content of 35 volume percent and a sulfur percentage less than 0.05 percent (40 CFR 80.24(a)(1) and 80.29(a)).	Verify that the dye, which is blue green, is not used in the fuel. (6)(30)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-30. Bulk gasoline terminals with greater than 75,000 gal gasoline throughput per day that deliver liquid product into greater tank trucks and that started construction or modification after 17 December 1980 are required to meet specific operating standards (40 CFR 60.500 through 60.506).	Verify that each facility has a vapor collection system designed to collect the total organic compound vapors displaced from tank trucks during product loading and to prevent the total organic compounds collected at on-loading rack from passing to another loading rack. (1)(6)(30) Verify that emissions from the vapor collection system do not exceed 35 mg of total organic compound per liter of gasoline loaded except that facilities with existing vapor processing systems that were constructed of refurbished before 17 December 1980 may emit 80 mg of total organic compounds per liter of gasoline loaded. (1)(6)(30) Determine if the following loading procedures are followed: (1)(6)(30) - vapor tightness documentation is available for each gasoline tank truck - the tank identification number is recorded as each gasoline tank truck is loaded - each tank identification number is cross-checked with the file of tank vapor tightness documentation within 2 weeks after the tank is loaded - steps are taken to ensure that only vapor-tight tanks are loaded and vapor collection systems are operational. Verify that the vapor collection and liquid loading equipment is designed and operated to prevent gauge pressure in the delivery tank from exceeding 4500 pascals (450 millimeters (mm) of water) during product loading. (1)(6)(30) Verify that pressure vacuum vents in the vapor collection system do not open at a system pressure of less than 4500 pascals (450 mm of water). (1)(6)(30) Verify that a monthly inspection of the vapor collection system, the vapor processing system, and each loading rack handling gasoline is done during loading and inspection records are kept on file for 2 yr. (1)(6)(30) Verify that leaks are repaired within 15 calendar days after detection. (1)(6)(30) Verify that records of all replacements or additions of components performed on existing vapor processing systems are kept for at least 3 yr. (1)(6)(30)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PRINTING PRESSES	
1-31. Publication rotogravure printing presses, except for proof presses, that started construction, modification, or reconstruction after 28 October 1980 are required to meet specific standards concerning VOC emissions (40 CFR 60.430 through 60.435).	Determine if the installation operates any publication rotogravure printing presses. (1)(2) Verify that gases are not being discharged containing VOC equal to more than 16 percent of the total mass of VOC solvent and water used at that facility during any one performance averaging period. (1)(2) (NOTE: Each performance averaging period is 30 consecutive calendar days.) Verify that facilities using waterborne ink systems or solvent-borne ink systems with solvent recovery systems record the amount of solvent and water used, solvent recovered, and estimated emission percentage for each calendar month and maintain these record for 2 yr. (1)(2)(6)
...	...
POL STORAGE VESSELS	
1-32. Storage vessels for petroleum liquids with a storage capacity greater than 40,000 gal but less than 65,000 gal, that started construction or modification after 8 March 1974 but before 19 May 1978, or with a capacity greater than 65,000 gal and started construction or modification after 11 June 1973 but before 19 May 1978, are required to meet specific standards for emissions and monitoring (40 CFR 60.110 through 60.113).	Determine whether or not the installation has any petroleum storage tanks meeting these parameters. (1)(2)(6) Determine the vapor pressure of the petroleum liquids being stored. (1)(2)(6) Verify that if the true vapor pressure of the petroleum stored is equal to or greater than 1.5 pounds square inch absolute (psia) but not greater than 11.1 psia, the storage vessel is equipped with a floating roof and a vapor recovery system or their equivalents. (1)(2)(6) Verify that if the true vapor pressure of the petroleum liquid being stored is greater than 11.1 psia, the storage vessel is equipped with a vapor pressure recovery system or its equivalent. (1)(2)(6) Verify that if proper vapor recovery and return or disposal systems are not in place, a record is maintained of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of the liquid during the storage period. (1)(2)(6) (NOTE: Facilities storing petroleum liquids with a Reid Vapor pressure of less than 1.0 psia are not required to keep records.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-33. Storage vessels for petroleum liquids with a storage capacity greater than 40,000 gal constructed after 18 May 1978 are required to meet specific standards (40 CFR 60.110(a) through 60.115(a)).	Determine whether the installation has any liquid petroleum storage vessels meeting these parameters. (1)(2) Determine the true vapor pressure of the liquids stored. (1)(2) Verify that vessels storing petroleum liquid with a true vapor pressure equal to or greater than 1.5 psia but less than 11.1 psia are equipped with one of the following: (1)(2) - an external floating roof meeting design requirements outlined in 40 CFR 60.112(a) - 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 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. (1)(2) Verify that the following testing is done: (1)(2) - gap measurement for primary seals of external floating roofs shall be measured at least once every 5 yr - gap measurement for secondary seals of external floating roofs shall be measured at least once every year. Verify that the following records are kept: (1)(2) - records of gap measurement are to be kept 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.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-34. Storage vessels for volatile organic liquids (VOLs) having a capacity of greater than or equal to 40 cubic meter (m^3) for which construction, reconstruction, or modification was started after 23 July 1984 are required to meet specific standards (40 CFR 60.110(b) through 60.115(b)).	Determine if any of the storage vessels on the installation meet these parameters. (1)(2)(6) Determine the vapor pressure of the liquids being stored in the vessels. (1)(2)(6) Verify that storage vessels with a design capacity greater than or equal to 151 m^3 containing VOL with a vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or storage vessels with a capacity greater than or equal to 75 m^3 but less than 151 m^3 containing VOL that has a maximum vapor pressure equal to or greater than 27.6 m^3 but less than 76.6 kPa are equipped with one of the following: (1)(2)(6) - 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 - an approved equivalent system. Verify that storage vessels with a design capacity greater than or equal to 75 m^3 containing a VOL with a maximum true vapor pressure greater than or equal to 76.6 kPa is equipped with one of the following: (1)(2)(6) - a closed vent system and control device that reduces emissions by 95 percent by weight - an approved equivalent alternative method. Verify that the accumulated areas or gaps do not exceed: (1)(2)(6) - 212 cm^2/m of tank diameter between the tank wall and the primary seal and the width of any portion of any gap does not exceed 3.81 cm - 21.2 cm^2/m of tank diameter between the tank wall and the secondary seal and the width of any portion of any gap does not exceed 1.27 cm. (NOTE: These standards do not apply to pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere, vessels which are permanently attached to mobile vehicles, vessels located at bulk gasoline plants, vessels located at gasoline service stations.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

1-35. Storage vessels for VOLs having a capacity of greater than or equal to 40 m^3 for which construction, reconstruction, or modification was started after 23 July 1984 are required to meet specific inspection, documentation, and notification requirements standards (40 CFR 60.110(b) through 60.115 (b)).	Verify that the following inspections are made: (1)(2)(9)
	- internal floating roofs, primary seals, and secondary seals shall be inspected for holes, tears, or defects before filling the tank
	- vessels with a liquid-mounted or mechanical shoe primary seal shall have the internal floating roof and primary or secondary seals visually inspected at least once every 12 mo after the initial fill
	- verify that as problems are found, the vessel is either repaired or removed from service within 45 days
	- vessels with a double-seal system are inspected at least every 5 yr
	- internal floating roofs, primary seals, secondary seals, gaskets, slotted membranes, and sleeve seals are to be inspected each time the storage vessel is emptied and degassed
	- when control equipment is installed, measurement of gap areas is done:
	  - at least once every 5 yr for gaps between the tank wall and the primary seal
	  - at least once a year for gaps between the tank wall and the secondary seal.
	
	Verify that a procedure is in place to notify the USEPA in advance of performing gap measurement and provide them, upon request, with copies of the following records which are to be maintained for 2 yr: (1)(2)
	
	- inspection records
	- repair or removal of a vessel from service
	- operating plans
	- monitoring records
	- records showing the dimensions and capacity of storage vessels.
	
	Verify that for vessels with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3, storing a liquid with a true vapor pressure greater than or equal to 15.0 kPa, a record is kept of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the storage period. (1)(2)
	
	(NOTE: This does not apply to vessels storing a waste mixture of indefinite or variable composition or vessels equipped with a closed vent system and control device.)
	
	(NOTE: These standards do not apply to pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere, vessels which are permanently attached to mobile vehicles, vessels located at bulk gasoline plants, vessels located at gasoline service stations.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-35. (continued)	Verify that, except for vessels equipped with a closed vent system and control device, a procedure exists to notify the USEPA within 30 days if the maximum true vapor pressure of a liquid exceeds the following limits for the capacities listed: (1)(2) - vessels with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum vapor pressure that is normally less than 5.2 kPa - vessels with a design capacity greater than 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa, notify the USEPA within 30 days when the maximum true vapor pressure of the liquid exceeds the allowed maximum true vapor pressure according to capacity.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DRY CLEANING	
1-36. Petroleum solvent dry cleaning dryers, washers, filters, stills, and settling tanks at petroleum dry cleaning plants with a total manufacturers' rated dryer capacity equal to or greater than 38 kg (84 lb) that started construction or modification after 14 December 1982, are required to meet specific standards of operation (40 CFR 60.620 through 60.625).	Verify that dryers are solvent recovery dryers. (1)(2)(9) Verify that the petroleum solvent filters are cartridge filters that are drained in their sealed housing for at least 8 h before their removal. (1)(2)(9) Determine if the facility has been granted approval from the USEPA to use alternate equipment or procedures to reduce VOC emissions. (1)(2)(9) Verify that a clearly visible label is posted regarding fire protection and inspection on the dryer. (1)(2)(9) (NOTE: Perchloroethylene drycleaners are regulated by some states.) (NOTE: Dryers installed between 14 December 1982 and 21 September 1984 in a plant with an annual solvent consumption level less than 4700 gal are exempt.)
...	...
ACID PRODUCTION UNITS	
1-37. Nitric acid production units that started construction or modification after 17 August 1971 are required to meet specific standards (40 CFR 60.70 through 60.74).	Verify that gases are not discharged that contain NO_x in excess of 1.5 kg per metric ton (3 lb/ton) of acid produced when the production is expressed as 100 percent nitric acid. (1)(2)(9) Determine if a continuous monitoring system for the measurement of NO_x is in place. (1)(2)(9)
...	...
1-38. Sulfuric acid production units which started construction or modification after 17 August 1971 are required to meet specific standards (40 CFR 60.80 through 60.85).	Verify that these facilities do not emit gases that contain SO_2 in excess of 2 kg per metric ton (4 lb/ton) of acid produced when the production is expressed as percent H_2SO_4. (1)(2)(9) Verify that the gases emitted do not exhibit 10 percent opacity or greater and they do not contain sulfuric acid mist, expressed as H_2SOs_4, in excess of 0.075 kg per metric ton (0.15 lb/ton) of acid produced when the production is expressed as 100 percent H_2SO_4. (1)(2)(9) Determine if a continuous monitoring system is in place for the measurement of SO_2. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
CHLOROFLUORO-CARBONS AND HALONS	
1-39. Installations that procure and store chlorofluorocarbons (CFCs) and halons for mission critical applications when substitutes are not available, or use them to service equipment, are required to produce a *CFC and Halon Report* (DOD Directive 6050.9, para E3).	Determine if the *CFC and Halon Report* (DD Form 2530) has been completed. (2) Verify that the form indicates the following: (2) - aggregate procurement (by thousand lb) of CFCs and halons for which they are the integrated item manager - data on significant noncentralized CFC and halon procurement. Verify that in areas where CFCs and halons are used or stored the following is being done: (2) - dependence on CFCs and halons is reduced - emissions are being minimized - conservation practices have been implemented. Verify that the installation is working toward the goals in Appendix 1-9. (2)
...	...
1-40. In order to minimize atmospheric emissions of ozone-depleting substances, specific good management practices should be instituted at the installation (GMP).	Verify that ozone-depleting substances are procured only in the absence of suitable alternatives. (2) Verify that there is no disposal of ozone-depleting substance by direct release to the atmosphere. (2) Verify that ozone-depleting substances are recycled. (2)
...	...
1-41. In order to protect the ozone, no person repairing or servicing motor vehicles for payment can service a motor vehicle air conditioner (MVAC) in any way that affects the refrigerant unless they have been trained and certified and are using approved equipment (40 CFR 82.34(a), 82.42(a), 82.42(b)(1), 82.42(b)(2), and 82.42 (b)(4)).	Determine if the hobby shop or AAFES gas station services MVAC for payment. (2) Verify that the individual who does the repair is certified and that the equipment being used is approved by the USEPA. (2) Verify that the USEPA Administration has been notified that there is an individual onsite who has been trained and certified that is performing MVAC repair. (2) Verify that the facility keeps records of where the refrigerant is sent and personnel certification for 3 yr. (2) (NOTE: These restrictions do not become effective until 1 January 1993 when less than 100 MVACs were serviced or repaired in calendar year 1990 and the USEPA Administrator was notified of the number of vehicles serviced by 13 August 1992.) (NOTE: Certifications are not transferable.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-42. As of 15 November 1992 no Class I or Class II substances suitable for use in motor vehicles as a refrigerant (see Appendix 1-10) can be sold or distributed in any container that is less than 20 lb to any person unless that person is trained and certified (40 CFR 82.34(b) and 82.42(b)(3)).	Determine if Supply or the AAFES gas station carries any of the Class I or Class II substances listed in Appendix 1-10. (2) Verify these substances are only sold or distributed to certified individual by reviewing records of sales. (2) Verify that distribution and sales records for these substances are kept for 3 yr. (2) (NOTE: Sales of these substances can be made to an uncertified individual if the purchaser is purchasing small containers for resale only.)
...	...
1-43. Facilities such as the AAFES gas station which sell Class I or Class II substances suitable for use as a refrigerant in containers of less than 20 lb are required to display a specific sign (40 CFR 82.42(c)).	Verify that a sign is displayed stating the following: (2) - "It is a violation of Federal laws to sell containers of Class I and Class II refrigerant of less than 20 lb of such refrigerant to anyone who is not properly trained and certified to operate approved refrigerant recycling equipment."
...	...
1-44. No person may, in the course of maintaining, servicing, or disposing of an appliance or industrial process, knowingly vent, release, or dispose of any Class I or Class II substances used as a refrigerant in an appliance or industrial process refrigeration in a manner that the substance enters the environment (42 USC 7671g(c)).	Verify that Class I or Class II substances are not knowingly vented, released, or disposed of in the environment. (2) (NOTE: Minimal releases associated with good faith attempts to recapture and recycle or safely disposes of Class I or Class II substances are exempted.) (NOTE: As of November 1995, this prohibition also applies to the venting, release, or disposal of any substitute substances for Class I or II substance by any person maintaining, servicing, repairing or disposing of an appliance or industrial process refrigeration which contains and uses a substitute substance unless the USEPA decides that this does not pose a threat to the environment.)
...	...
1-45. As of 1 January 2015 the use of Class II substances (see Appendix 1-10) is forbidden except in certain situations (42 USC 7671d(a)).	Verify that a program is underway to eliminate the use of Class II substances unless: (2) - the substance has been reused or recycled - it is used and entirely consumed (except for trace quantities) in the production of other chemicals - it is used as a refrigerant in appliances manufactured prior to 1 January 2020.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
REFRIGERANTS	
1-46. No person maintaining, servicing, repairing, or disposing of appliances can knowingly vent or release to the environment any class I or class II substance used as a refrigerant (40 CFR 82.150 and 82.154(a)).	Determine if the installation is maintaining, servicing, repairing, or disposing of appliances containing refrigerants. (2) Verify that class I or II substances are not being vented to the atmosphere. (2) (NOTE: *De minimis* releases that are associated with good faith attempts to recycle or recover refrigerants are not considered a violation.) (NOTE: These requirements apply to the following: - any person servicing, maintaining, or repairing appliances except for MVACs - persons disposing of appliances, including MVACs - refrigerant reclaimers, appliance owners, recycling and recovery equipment.)
...	...
1-47. No person can open appliances, except MVACs, for maintenance, service, or repair and no person can dispose of appliances except small appliances, MVACs, and MVAC-like appliances unless specific requirements are met (40 CFR 82.154(b) and 82.156(a)(5)).	Verify that the required practices outline in 40 CFR 82.156 (see checklist items 1-50 through 1-59) are met. (2) Verify that equipment is used that is certified for the appliance in question. (2)
...	...
1-48. Installations maintaining, servicing, or repairing appliances except for MVACs and installations disposing of appliances except for small appliances and MVACs are required to submit certification to the USEPA (40 CFR 82.162 (a)).	Verify that the installation has submitted certification to the USEPA that it has acquired certified recovery or recycling equipment and is in compliance applicable requirements. (2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-49. Installations recovering refrigerant from small appliances, MVACs, and MVAC-like appliances for purpose of disposal of these appliances are required to certify to the USEPA appropriate recovery equipment has been acquired (40 CFR 82.162 (c)).	Verify that the installation has submitted certification to the USEPA that it has acquired appropriate recovery equipment. (2)
...	...
1-50. Installations opening appliances, except for small appliances and MVACs for maintenance, service, or repair and all persons disposing of appliances except for small appliances must have at least one piece of certified, self-contained recovery equipment available (40 CFR 82.156(b) and 82.156(e)).	Verify that the installation has at least one available piece of equipment. (2) (NOTE: Refrigerant may be returned to the appliance from which it is recovered or to another appliance without being recycled or reclaimed, unless the appliance is a MVAC-like appliance.)
...	...
1-51. System dependent equipment must not be used with appliances normally containing more than 15 lb of refrigerant (40 CFR 82.156(c)).	Verify that system dependent equipment is not used with appliances normally containing more than 15 lb of refrigerant. (2)
...	...
1-52. When appliances are opened for service, maintenance or repair, except for MVACs, the refrigerant must be evacuated in either the entire unit or the part to be serviced, if the part can be isolated, to a system receiver or a certified recovery or recycling machine (40 CFR 82.150 and 82.156(a)).	Verify that refrigerant is evacuated to either a system receiver or certified recovery or recycling machine. (2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-53. When appliances, except for small appliances, MVACs and MVAC-like appliance are disposed of, the refrigerant must be evacuated from the entire unit to a certified recovery or recycling machine (40 CFR 82.150 and 82.156(a)).	Verify that if disposal is occurring, the refrigerant is being evacuated to a certified recovery or recycling machine. (2)
...	...
1-54. When appliances, except for small appliance, MVAC and MVAC-like appliances, are opened for maintenance, service or repair, they must be evacuated to specific levels before the appliance is opened (40 CFR 82.150 and 82.156(a)(1) and 82.156 (a)(2)).	Verify that evacuation is done to the levels in Appendix 1-11 prior to opening the appliance unless one of the following is met: (2) - evacuation of the appliance is not to be done after completion of the maintenance service, or repair and the maintenance service or repair is not major - the evacuation limits in Appendix 1-11 are not possible because of leaks in the equipment or the refrigerant being recovered would be substantially contaminated. Verify that if evacuation is not to be done after completion of the maintenance, service, or repair and the maintenance, service, or repair is not major, the appliance is: (2) - evacuated to a pressure no higher than 0 pounds per square inch gauge (psig) before it is opened if it is a high or very high-pressure appliance - pressurized to 0 psig before it is opened if it is a low pressure appliance, without using methods, such as nitrogen, that require subsequent purging. Verify that if the evacuation limits in Appendix 1-11 are not possible because of leaks in the equipment or the refrigerant being recovered would be substantially contaminated, the person opening the appliance: (2) - isolates leaking from nonleaking components whenever possible - evacuates leaking components to be opened to the lowest level that can be attained without substantially contaminating the refrigerant, in no case exceeding 0 psig.
...	...
1-55. Appliances, except for small appliances, MVACs and MVAC-like appliances, that are being disposed of must be evacuated to the levels in Appendix 1-11 (40 CFR 82.150 and 82.156(a)(3)).	Verify that appliances are evacuated to the levels listed in Appendix 1-11 prior to disposal. (2)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-56. Specific evacuation limits must be met when opening small appliances for maintenance, service, or repair (40 CFR 82.150 and 82.156(a)(4)).	Verify that when recycling and recovery equipment manufactured prior to 15 November 1993 is used, 80 percent of the refrigerant is recovered or the small appliance is evacuated to 4 in. of mercury vacuum. (2) Verify that when recycling and recovery equipment manufactured on or after 15 November 1993 is used, 90 percent of the refrigerant in the appliance is recovered when the compressor in the appliance is operating or 80 percent of the refrigerant when the compressor is not operating or the small appliance is evacuated to 4 in. of mercury vacuum. (2)
...	...
1-57. Installations which take the final step in the disposal process of a small appliance, room air conditioning, MVACs, or MVAC-like appliances must meet specific standards (40 CFR 82.156(f), 82.166(i) and 82.166(m)).	(NOTE: This includes but is not limited to scrap recyclers and landfill operators.) Verify that installations: (2) - recover any remaining refrigerant from the appliance - check that the refrigerant has been evacuated from the appliance or shipment of appliances previously by reviewing a signed statement from the person from whom the appliance or shipment of appliances is obtained that all refrigerant has been recovered. Verify that copies of signed statements are retained for 3 yr. (2)
...	...
1-58. Installations recovering refrigerant for purpose of disposal must meet specific standards (40 CFR 82.156(g) and 82.156(h)).	Verify that if the installation recovers refrigerant from MVACs and MVAC-like appliances for purpose of disposal of the appliance, the system pressure is reduced to or below 102 mm of mercury vacuum. (2) Verify that installations recovering refrigerant from small appliances for the purpose of disposal of the appliance does one of the following: (2) - recover 90 percent of the refrigerant when the compressor in the appliance is operating - recover 80 percent of the refrigerant in the appliance when the compressor in the appliance is not operating - evacuate the small appliance to 4 in. of mercury vacuum.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-59. Leaking appliances must be repaired when specific limits are exceeded (40 CFR 82.156(i)).	Verify that if the installation owns commercial and industrial process refrigeration equipment, all leaks are repaired if the equipment is leaking at a rate such that the loss of refrigerant will exceed 35 percent of the total charge during a 12 mo period. (2) Verify that other appliances normally containing more than 50 lb of refrigerant are repaired if the appliance is leaking at a rate such that the loss of refrigerant will exceed 15 percent of the total charge during a 12 mo period. (2) (NOTE: Leaks are not required to be repaired if, within 30 days, the installation has developed a 1-yr retrofit or retirement plan for the leaking equipment. The plan, or a legible copy, must be kept at the site of the equipment.) Verify that leaks have been repaired within 30 days of discovery or within 30 days of when the leak should have been discovered, if the installation intentionally shielded themselves from information which would have revealed a leak. (2)
...	...
Recordkeeping	
1-60. Facilities on installations that sell or distribute any class I or class II substance for use as a refrigerant are required to retain invoices (40 CFR 82.166(a) and 82.166(m)).	Verify that facilities on the installation that sell or distribute any class I or class II substance for use as a refrigerant retains invoices indicating the name of the purchaser, the date of sale, and the quantity or refrigerant purchased. (2) Verify that records are retained for 3 yr. (2)
...	...
1-61. Facilities at the installation servicing appliances normally containing 50 or more pounds of refrigerant are required to supply the owner of the appliance with documentation as to how much refrigerant was added and the owner of the appliance must retain the servicing records (40 CFR 82.166(j) and 82.166(k)).	Verify that documentation of servicing and amounts of refrigerant added is provided to the appliance owner and retained for 3 yr. (2)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army/Air Force Exchange Service (AAFES)

Appendix 1-1

Standards of Performance, 40 CFR Part 60

Source Category	Fuel Type	Pollutant	Emission Level	Monitoring Requirement
		Subpart D		
Steam generators* (> 250 MBtu/h) constructed or modified 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 1.2 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
	Gaseous 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
		Subpart E		
Incinerators (> 50 tons/day) constructed or modified after 8/17/71	Inciner-ators	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 unit that started construction or modification after 18 September 1978.**

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

Appendix 1-2

Formulas for Calculating Emissions Limitations (40 CFR 60.42(b) and 60.44(b))

Steam generating units that started construction, modification, or reconstruction after 19 June 1984 with a heat input capacity of greater than 100 MBtu/h.

SULFUR DIOXIDE from facilities combusting coal or oil:

$$E = \frac{(K_a H_a + K_b H_b)}{(H_a + H_b)}$$

where:

- E - the sulfur dioxide emission limit
- K_a - 1.2 lb/MBtu
- K_b - 0.80 lb/MBtu heat input
- H_a - the heat input from the combustion of coal
- H_b - the heat input from the combustion of oil

SULFUR DIOXIDE from facilities combusting coal or oil alone or with other fuel while using emerging technology:

$$E_s = \frac{(K_c H_c + K_d H_d)}{(H_c + H_d)}$$

where:

- E_s - the sulfur dioxide emission limit (expressed in NO_2), ng / J (lb /MBtu) heat input
- K_c - 260 ng / J (0.60 lb/MBtu)
- K_d - 170 ng / J (0.40 lb/MBtu)
- H_c - the heat input from the combustion of coal, J (MBtu)
- H_d - the heat input from the combustion of oil, J (MBtu)

NITROGEN OXIDE EMISSIONS from facilities simultaneously combusting coal, oil, or natural gas with by-products/waste:

$$E_n = \frac{[(EL_{go} H_{go}) + (EL_{ro} H_{ro}) + (EL_c H_c)]}{(H_{go} + H_{ro} + H_c)}$$

where:

- E_n - the nitrogen oxides emission limit (expressed as NO_2), ng / J (lb /MBtu)
- EL_{go} - the appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng / J (lb /MBtu)
- H_{go} - the heat input from combustion of natural gas or distillate oil and gaseous by-product /waste, ng / J (lb /MBtu)
- EL_{ro} - the appropriate emission limit from paragraph (a)(2) for combustion of residual oil, ng / J (lb /MBtu)
- H_{ro} - the heat input from combustion of residual oil and/or liquid by-product/waste
- EL_c - the appropriate emission limit from paragraph (a)(3) for combustion of coal
- H_c - the heat input from combustion of coal.

NITROGEN OXIDE EMISSIONS from facilities simultaneously combusting mixtures of coal, oil, or natural gas:

$$E_n = \frac{[(EL_{go} H_{go}) + (EL_{ro} H_{ro}) + (EL_c H_c)]}{(H_{go} + H_{ro} + H_c)}$$

where:

- E_n - the nitrogen oxides emission limit (expressed as NO_2), ng / J (lb /MBtu)
- EL_{go} - the appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng / J (lb /MBtu)
- H_{go} - the heat input from combustion of natural gas or distillate oil
- EL_{ro} - the appropriate emission limit from paragraph (a)(2) for combustion of residual oil
- H_{ro} - the heat input from combustion of residual oil
- EL_c - the appropriate emission limit from paragraph (a)(3) for combustion of coal
- H_c - the heat input from combustion of coal.

Appendix 1-3

Particulate Emission Standards
(40 CFR 60.43(b))

Steam generating units with a heat input capacity of greater than 100 MBtu/h that started construction, modification, or reconstruction after 19 June 1984.

FACILITY TYPE	PARTICULATE EMISSIONS
Combusts only coal or coal and other fuels with an annual capacity factor for the other fuels of 10 percent or less.	0.05 lb/MBtu heat input
Combusts coal and other fuels and has an annual capacity factor greater than 10 percent and is subject to federally enforceable requirements limiting operations to an annual capacity factor greater than 10 percent for fuels other than coal.	0.10 lb/MBtu heat input
Combusts coal or coal and other fuels, was constructed after 19 June 1984 but before 25 November 1986 and has: a. an annual capacity factor for coal and coal and other fuels of 30 percent or less b. has a maximum heat input capacity of 250 MBtu c. has a federally enforceable requirement limiting operation of affected facility to an annual capacity factor of 30 percent or less for coal or coal and other solid fuels.	0.20 lb/MBtu heat input
Combusts oil or mixture of oil and uses a conventional or emerging technology to reduce SO_2 emissions.	0.10 lb/MBtu heat input
Combusts wood or wood with other fuels except coal and has an annual capacity factor greater than 30 percent for wood.	0.10 lb/MBtu heat input
Combusts wood or wood with other fuels, except coal, with a maximum heat input capacity of 250 MBtu/h and has an annual capacity factor of 30 percent or less for wood and is subject to a federally enforceable requirement limiting operation to an annual capacity factor of 30 percent or less.	0.20 lb/MBtu heat input

Appendix 1-3 (continued)

FACILITY TYPE	PARTICULATE EMISSIONS
Combusts municipal-type solid waste or mixtures of municipal-type solid waste with other fuels with an annual capacity factor of 10 percent or less for other fuels.	0.10 lb/MBtu heat input
Combusts municipal-type solid waste or mixtures of municipal-type solid waste with other fuels with an annual capacity factor of 30 percent or less for other fuels and has a maximum heat input capacity of 250 MBtu/h or less, constructed between 19 June 1984 and 25 November 1986, with a federally enforceable requirements limiting operating to an annual capacity factor of 30 percent.	0.20 lb/MBtu heat input

Appendix 1-4

Emissions Standards For Nitrogen Oxides (40 CFR 60.44(b))

Fuel burning sources greater than 100 MBtu/h heat input that started construction, modification, or reconstruction after 19 June 1984.

FUEL/STEAM GENERATING UNIT TYPE	NITROGEN OXIDE EMISSION LIMIT lb/MBtu (NO_2) HEAT INPUT
1. Natural gas and distillate oil except for	
low heat release rate	0.10
high heat release rate	0.20
2. Residual oil	
low heat release rate	0.30
high heat release rate	0.40
3. Coal	
mass feed stoker	0.50
spreader-stoker and fluid bed combustion	0.60
pulverized coal	0.70
lignite	0.60
lignite mined in ND, SD, or MT, and combusted in a slag tap furnace	0.80
coal derived synthetic fuels	0.50
4. Duct burner used in combined cycle system	
natural gas and distillate oil	0.20
residual oil	0.40

Appendix 1-5

Formula for Calculating Sulfur Dioxide Emissions Limitations (40 CFR 60.42c(e)(2))

The following applies to steam generating units for which construction, modification, or reconstruction started after 9 June 1989 with a maximum design heat input capacity of 29 megawatts (MW) (100 MBtu/h) or less, but greater than or equal to 2.9 MW (10 MBtu/h).

$$E = \frac{(K_a H_a + K_b H_b + K_c H_c)}{H_a + H_b + H_c}$$

where:

E = the SO_2 emission limit expressed in ng/Joule or lb/MBtu heat input
K_a = 520 ng/Joule (1.2 lb/MBtu)
K_b = 260 ng/Joule (0.60 lb/MBtu)
K_c = 215 ng/Joule (0.50 lb/MBtu)
H_a = the heat input from the combustion of coal, except coal combusted in a facility that combusts only coal and uses emerging technology, in Joules (MBtu).
H_b = the heat input from the combustion of coal, except coal combusted in a facility that combusts only coal and uses emerging technology, in Joules (MBtu).
H_c = the heat input from the combustion of oil, in Joules (MBtu).

Appendix 1-6

Nitrogen Oxide Emissions From Stationary Gas Turbines (40 CFR 60.332)

Formula A:

$$STD = 0.0075 \frac{(14.4)}{Y} + F$$

Formula B:

$$STD = 0.0150 \frac{(14.4)}{Y} + F$$

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kJ/watt hour.

F = NO_x emission allowance for fuel-bound nitrogen, defined as follows:

Fuel-Bound Nitrogen (% by weight)	F
$N < 0.015$	0
$0.015 < N < 0.1$	0.04(N)
$0.1 < N < 0.25$	0.004 + 0.0067(N - 0.1)
$N > 0.25$	0.0025

N is the nitrogen content of the fuel (percent by weight)

Appendix 1-7

Municipal Waste Combustor Operating Standards for CO (40 CFR 60.56(a), 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
RDF stoker	150
Bubbling fluidized bed combustor	100
Circulating fluidized bed combustor	100
Coal/RDF mixed fuel fired combustor	150

Appendix 1-8

Reid Vapor Pressure (RVP) for Installation Geographic Area (40 CFR 80.27)

Applicable Standards[1] 1992 and Beyond

State	May	June	July	August	September
Alabama	9.0	7.8	7.8	7.8	7.8
Arizona	9.0	7.8	7.8	7.8	7.8
Arkansas	9.0	7.8	7.8	7.8	7.8
California	9.0	7.8	7.8	7.8	7.8
Colorado*	9.0	7.8	7.8	7.8	7.8
Connecticut	9.0	9.0	9.0	9.0	9.0
Delaware	9.0	9.0	9.0	9.0	9.0
District of Columbia	9.0	7.8	7.8	7.8	7.8
Florida	9.0	7.8	7.8	7.8	7.8
Georgia	9.0	7.8	7.8	7.8	7.8
Idaho	9.0	9.0	9.0	9.0	9.0
Illinois	9.0	9.0	9.0	9.0	9.0
Indiana	9.0	9.0	9.0	9.0	9.0
Iowa	9.0	9.0	9.0	9.0	9.0
Kansas	9.0	7.8	7.8	7.8	7.8
Kentucky	9.0	9.0	9.0	9.0	9.0
Louisiana	9.0	7.8	7.8	7.8	7.8
Maine	9.0	9.0	9.0	9.0	9.0
Maryland	9.0	7.8	7.8	7.8	7.8
Massachusetts	9.0	9.0	9.0	9.0	9.0
Michigan	9.0	9.0	9.0	9.0	9.0
Minnesota	9.0	9.0	9.0	9.0	9.0
Mississippi	9.0	7.8	7.8	7.8	7.8
Missouri	9.0	7.8	7.8	7.8	7.8
Montana	9.0	9.0	9.0	9.0	9.0
Nebraska	9.0	9.0	9.0	9.0	9.0
Nevada	9.0	7.8	7.8	7.8	7.8
New Hampshire	9.0	9.0	9.0	9.0	9.0
New Jersey	9.0	9.0	9.0	9.0	9.0
New Mexico	9.0	7.8	7.8	7.8	7.8
New York	9.0	9.0	9.0	9.0	9.0
North Carolina	9.0	7.8	7.8	7.8	7.8
North Dakota	9.0	9.0	9.0	9.0	9.0
Ohio	9.0	9.0	9.0	9.0	9.0
Oklahoma	9.0	7.8	7.8	7.8	7.8
Oregon	9.0	7.8	7.8	7.8	7.8

Appedix 1-8 (continued)

Applicable Standards

State	May	June	July	August	September
Pennsylvania	9.0	9.0	9.0	9.0	9.0
Rhode Island	9.0	9.0	9.0	9.0	9.0
South Carolina	9.0	7.8	7.8	7.8	7.8
South Dakota	9.0	9.0	9.0	9.0	9.0
Tennessee	9.0	7.8	7.8	7.8	7.8
Texas	9.0	7.8	7.8	7.8	7.8
Utah	9.0	7.8	7.8	7.8	7.8
Vermont	9.0	9.0	9.0	9.0	9.0
Virginia	9.0	7.8	7.8	7.8	7.8
Washington	9.0	9.0	9.0	9.0	9.0
West Virginia	9.0	9.0	9.0	9.0	9.0
Wisconsin	9.0	9.0	9.0	9.0	9.0
Wyoming	9.0	9.0	9.0	9.0	9.0

* The standard for 1992 and 1993 in the Denver-Boulder nonattainment area will be 9.0 for 1 June through 15 September.

Appendix 1-9

Department of Defense Goals For Reduction, Releases, Procurement, and Use of Ozone-Depleting Substances

Phase I	Phase II	Phase III	Phase IV	Phase V
Institute plans to reduce unnecessary releases during operation, maintenance, and training.	Institute plans to eliminate procurement and use.	Stop use in new procurements.	Phaseout of current applications to 50 percent of 1986 levels.	Reduce use in all applications to zero.

Goals for CFCs

	Phase I	Phase II	Phase III	Phase IV	Phase V
[3]Category III	Oct. '90	Oct. '92	Oct. '96	Oct. '96	Oct. 2000
[2]Category II	Oct. '90	Oct. '93	Oct. '97	Oct. '97	Oct. 2000*
[1]Category I	Oct. '90	Oct. '93	Oct. '98	Oct. '98	Upon available substitutes

Goals for Halons

Category III	Oct. '90	Oct. '90	Oct. '90	---	Oct. '95
Category II	Oct. '90	Oct. '90	Oct. '90	Oct. '95	Oct. 2000*
Category I	Oct. '90	Oct. '90	Oct. '95	Oct. '95	Upon available substitutes

*Meet requirement from recycle or inventory.

NOTE: All phaseout goals are dependent on development of suitable substitutes for ozone-depleting substances in a timely manner. To prevent interruption of supplies for mission-critical uses (Category I), these uses will be identified and plans initiated not later than October 1990 to recycle existing stocks and to initiate stockpiling of sufficient quantities of ozone-depleting substances to allow operation for the useful life of the weapons system.

[1]Category I: *Mission-Critical Uses* - The highest priority uses will be those that are mission critical. Mission-critical uses have a direct impact on combat mission capability and include uses that are integral to combat mission assets or affect operability of these assets. Mission-critical uses include cooling operational suppression systems in tactical vehicle crew compartments to protect the lives of mission-critical personnel.

[2]Category II: *Essential Uses* - Essential uses include those applications that have an indirect effect on combat mission assets and play an auxilliary role in ensuring the operability of those assets. Essential uses include process cooling applications and charging portable fire extinguishers for electronic area protection.

[3]Category III: *NonEssential Uses* - This category includes all nonessential uses. Nonessential uses include methods of comfort cooling in family housing and installation support activities.

Appendix 1-10

Controlled Substances and Ozone Depletion Weights (40 CFR 82, Appendix A and Appendix B)

Controlled Substance	Ozone Depletion Weight
Class I	
Group I	
$CFCl_3$ - Trichlorofluoromethane (CFC-11)	1.0
CCl_2F_2 - Dichlorodifluoromethane (CFC-12)	1.0
CCl_2F-$CClF_2$ - Trichlorotrifluoroethane (CFC-113)	0.8
CF_2Cl-$CClF_2$ - Dichlorotetrafluoroethane (CFC-114)	1.0
$CClF_2$-CF_3 - (Mono)chloropenthafluoroethane (CFC-115)	0.6
All isomers of the above chemicals	
Group II	
CF_2BrCl - Bromochlorodifluoromethane (Halon 1211)	3.0
CF_3Br - Bromotrifluoromethane (Halon 1301)	10.0
$C_2F_4Br_2$ - Dibromotetrafluoroethane (Halon 2402)	6.0
All isomers of the above chemicals	
Group III	
CF_3Cl - Chlorotrifluoromethane (CFC-13)	1.0
C_2FCl_5 - (CFC-111)	1.0
$C_2F_2Cl_4$ - (CFC-112)	1.0
C_3FCl_7 - (CFC-211)	1.0
$C_3F_2Cl_6$ - (CFC-212)	1.0
$C_3F_3Cl_5$ - (CFC-213)	1.0
$C_3F_4Cl_4$ - (CFC-214)	1.0
All isomers of the above chemicals	

Appendix 1-10 (continued)

Controlled Substance	Ozone Depletion Weight
Group III (continued)	
$C_3F_5Cl_3$ - (CFC-215)	1.0
$C_3F_6Cl_2$ - (CFC-216)	1.0
C_3F_7Cl - (CFC-217)	1.0
Group IV	
CCl_4 - Carbon Tetrachloride	1.1
Group V	
$C_2H_3Cl_3$ - 1,1,1-Trichloroethane (Methyl Chloroform)	0.1
Class II	
$CHFCl_2$ - Dichlorofluoromethane (HCFC-21)	*[res.]
CHF_2Cl - Chlorodifluoromethane (HCFC-22)	0.05
CH_2FCl - Chlorofluoromethane (HCFC-31)	[res.]
C_2HFCl_4 - (HCFC-121)	[res.]
$C_2HFCl_2Cl_3$ - (HCFC-122)	[res.]
$C_2HF_3Cl_2$ - (HCFC-123)	0.02
C_2HF_4Cl - (HCFC-124)	0.02
$C_2H_2FCl_3$ - (HCFC-131)	[res.]
$C_2H_2F_2Cl_2$ - (HCFC-132b)	[res.]
$C_2H_2F_2Cl$ - (HCFC-133a)	[res.]
$C_2H_3FCl_2$ - (HCFC-141b)	0.12
$C_2H_3F_2Cl$ - (HCFC-142b)	0.06
C_3HFCl_6 - (HCFC-221)	[res.]

Appendix 1-10 (continued)

Controlled Substance	Ozone Depletion Weights
Class II (continued)	
$C_3HF_2Cl_5$ - (HCFC-222)	[res.]
$C_3HF_3Cl_4$ - (HCFC-223)	[res.]
$C_3HF_4Cl_3$ - (HCFC-224)	[res.]
$C_3HF_5Cl_2$ - (HCFC-225ca)	[res.]
(HCFC-225cb)	[res.]
C_3HF_6Cl - (HCFC-226)	[res.]
$C_3H_2FCl_5$ - (HCFC-231)	[res.]
$C_3H_2F_2Cl_4$ - (HCFC-232)	[res.]
$C_3H_2F_3Cl_3$ - (HCFC-233)	[res.]
$C_3H_2F_4Cl_2$ - (HCFC-234)	[res.]
$C_3H_2F_5Cl$ - (HCFC-235)	[res.]
$C_3H_3FCl_4$ - (HCFC-241)	[res.]
$C_3H_3F_2Cl_3$ - (HCFC-242)	[res.]
$C_3H_3F_3Cl_2$ - (HCFC-243)	[res.]
$C_3H_3F_4Cl$ - (HCFC-244)	[res.]
$C_3H_4FCl_3$ - (HCFC-251)	[res.]
$C_3H_4F_2Cl_2$ - (HCFC-252)	[res].
$C_3H_4F_3Cl$ - (HCFC-253)	[res.]
$C_3H_5FCl_2$ - (HCFC-261)	[res.]
$C_3H_5F_2Cl$ - (HCFC-262)	[res.]
C_3H_6FCl - (HCFC-271)	[res.]
All isomers of the above chemicals	[res.]

***[res.] means reserve. It designates that the ozone depletion weight number has been reserved for a future rating.**

Appendix 1-11

Required Levels of Evacuation for Appliances (Except for small appliances, MVACS, and MVAC-like appliances) (40 CFR 82.156, Table 1)

Type of Appliance	Inches of Hg vacuum (relative to standard and atmospheric pressure of 29.9 in. Hg)	
	Using recovery or recycling equipment manufactured or imported before 15 November 1993	Using recovery or recycling equipment manufactured or imported on or after 15 November 1993
HCFC-22 appliance, or isolated component of such appliance, normally containing less than 200 lb of refrigerant	0	0
HCFC-22 appliance, or isolated component of such appliance, normally containing less than 200 lb of refrigerant	0	0
HCFC-22 appliance, or isolated component of such appliance, normally containing 200 lb or more of refrigerant	4	10
Other High-pressure appliance, or isolated component of such appliance, normally containing less than 200 lb of refrigerant	4	10
Other High-pressure appliance, or isolated component of such appliance, normally containing 200 lb or more of refrigerant	4	15
Very High-pressure appliance	0	0
Low-pressure appliance	25	25 mm Hg absolute

INSTALLATION:	COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) USA ECAS	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine (4) Safety and Health Officer (6) Director of Logistics (DOL) (9) Chief Operations and Maintenance (O&M) (30) Army and Air Force Exchange Service (AAFES)

Section 2

CLEAN WATER ACT (CWA)

SECTION 2

CLEAN WATER ACT (CWA)

A. Applicability of this Protocol

This protocol includes regulations, responsibilities and compliance requirements associated with wastewater discharge at Army installations.

- Wastewater discharge can include, but is not limited to, any of the following:
  - Sanitary or industrial wastewater discharge directly to a receiving stream, or through an onsite treatment facility
  - Sanitary or industrial wastewater discharge to an offsite publicly owned treatment works (POTW), Federally owned treatment works (FOTW), or to a treatment plant of another Department of Defense (DOD) or Federal activity
  - Stormwater discharge associated with industrial activity on the installation going to a receiving stream or water body.
  - Industrial or storm wastewater drained to an industrial waste reservoir.

Most Army installations have wastewater discharge of one type or another, and therefore this protocol will be applicable to most installations.

Wastewater discharge is primarily regulated on the Federal level by the United States Environmental Protection Agency (USEPA) and/or by state regulatory agencies. This protocol integrates all wastewater related compliance requirements from Federal, state, DOD, and Army Regulations (ARs). However, because the focus of wastewater discharge compliance is an installation's specific permits, many of the review items in this protocol are presented in a generic manner.

It also contains information on petroleum, oil, and lubricant (POL) regulations and requirements. This protocol applies to Army installations which store, transport, dispose, or utilize POL aboveground. The protocol presents review action items that correspond to regulations, procedures, and organizational mechanisms designed to prevent or limit the accidental release of POL materials to surface water, groundwater, or soils.

This protocol covers management of aboveground POL bulk storage tanks, organizational tanks, pipeline delivery systems, truck fill stands, immediate operating storage areas, and fueling/defueling flight line operations. POL materials addressed include jet fuel (JP-4), AVGAS, MOGAS, diesel fuel, and lubricating oils.

POL Management is regulated by Federal USEPA and state regulatory agencies. The implementation of the required regulatory responses at the installation level are based on DOD and U.S. ARs and technical orders. The primary focus of the review protocol worksheets is the organizational mechanisms which control or prevent environmental releases at the source.

B. Federal Legislation

- *The Federal Water Pollution Control Act*, commonly known as the *CWA*, as amended 4 February 1987, 33 U.S. Code (USC) 1251-1387, Public Law (PL) 100-4, governs the control of water pollution in the nation.

  The objective of the *CWA* is to restore and maintain the chemical, physical and biological integrity of the nation's waters. To achieve this objective, the following must be done:

  - the discharge of pollutants into the navigable waters be eliminated by 1985
  - wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by 1 July 1983
  - the discharge of toxic pollutants in toxic amounts be prohibits
  - Federal financial assistance be provided to construct POTWs
  - areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each state
  - a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and the oceans
  - programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution (33 USC 1251).

  Each department, agency, or instrument of the executive, legislative, and judicial branches of the Federal Government, and each officer, agent, or employee

of such organization, must comply with all Federal, state, interstate, and local requirements, administrative authority, and process and sanctions regarding the control and abatement of water pollution in the same manner and to the same extent as any nongovernmental entity including the payment of reasonable service charges (33 USC 1323(a)).

The USEPA will coordinate with the head of each department, agency, or instrument of the Federal Government to develop a program of cooperation for utilizing wastewater control systems using those innovative treatment processes and techniques. Such program will include an inventory of property and facilities which could use such processes and techniques (33 USC 1323(b)(1)).

- *The Water Quality Improvement Act of 1974* is the primary Federal law governing the discharge of oil into navigable waters. This regulation prohibited the discharge of "harmful quantities of oil into navigable waters. 40 CFR 110, *Protection of Environment - Discharge of Oil*, defines "harmful" quantities as those discharges which will cause a sheen or discoloration of the surface of the water or on adjoining shorelines, or a sludge or emulsion to be deposited beneath the surface of the water or violates a regulatory water quality standard.

- *The Oil Pollution Act of 1990.* This law, PL 301-308 (33 USC 2701-2761, et. al.) as amended, requires the prevention of oil pollution into navigable waters by tank vessels.

C. State/Local Requirements

- States normally have wastewater discharge legislation and regulations that require permitting similar to the National Pollution Discharge Elimination System (NPDES) program. The state is often delegated the authority to administer the NPDES permits for discharges in their state. These permits are often joint permits issued pursuant to both Federal CWA and state legislation. In some cases, the state will not administer the NPDES program and will issue a state permit (SPDES) even though a NPDES permit has been issued by the USEPA. The states and the USEPA normally cooperate in the permit issuance process to ensure that the two permits are consistent, but there may be differences in monitoring requirements and the number of pollutants limited. These requirements normally do not conflict, but may require additional sampling and dual reporting.

  States may also have more stringent requirements for wastewater treatment plant operations. Some states have sanitary treatment plant (STP) operator licensing and certification programs that require operators to pass an exam and have a required level of experience.

Local entities (counties, cities) also may have enforceable wastewater discharge limitations that regulate discharges to an offsite POTW. Local limitations often include pH, temperature, and concentrations of various organic and inorganic compounds. Major industrial operations which discharge to an offsite POTW will be subject to pretreatment permits issued by the POTW, state, or USEPA as appropriate. In some cases, another DOD activity may stipulate effluent discharge limitations for discharges to their treatment plant if the Army installation discharges to the DOD facility.

Many states and some major metropolitan and regional planning agencies have developed legislation and implemented regulations which closely parallel the Federal statutes. Some, however, may differ in important ways, and the evaluator should obtain copies of the state or local requirements for Oil and Hazardous Substances Pollution Contingency (OHSPC) and Spill Prevention Control and Countermeasure (SPCC) plans, where appropriate, and review them for those differences before conducting the evaluations. In particular, the evaluator should check for differences in the definitions of reportable quantities and the specific procedures for reporting spills that may exist in state/local regulations. In all cases the most stringent regulations should be followed.

D. DOD Regulations

- DOD Instruction 4120.14, *Policies for Improvements Needed to Abate Water Pollution Emanating from DOD Facilities* (NOTAL), implements within DOD policies provided by Executive Order (EO) 12088, *Federal Compliance with Pollution Standards*, and OMB Circular A-106, and establishes policies for developing and submitting plans for installing improvements needed to abate water pollution emanating from DOD facilities.

- DOD Directive 4140.25M, *Procedures for the Management of Petroleum Products*, describes procedures for the management of petroleum products on military installations.

- DOD Directive 5030.41, *Oil and Hazardous Substances Pollution Prevention and Contingency Program*, addresses requirements for compliance with the National OHSPC Plan.

- Defense Environmental Quality Program Policy Memorandum (DEQPPM) 79-3, *Management of Recoverable and Waste Liquid Petroleum Products*, addresses the management of recoverable and waste liquid petroleum products.

E. U.S. ARs

- AR 200-1, *Environmental Protection and Enhancement*, directs all Army facilities to comply with the provisions of the CWA. Chapter 3 outlines the Water Resources Management Program, which includes regulation and guidance beyond the limits of the CWA and the Safe Drinking Water Act (SDWA) (discussed in Section 3 of this manual). The Water Resources Management Program requires the Army to conserve all water resources, control or eliminate all sources of pollutants, cooperate with Federal, state, regional, and local authorities in forming and carrying out water pollution control plans, control runoff and erosion, and consider nonpoint source abatement in all construction, operation, and land management activities.

  The paragraph on the CWA (para 3-3) provides specific instructions for meeting compliance requirements. It covers discharge permits under NPDES, site inspections, connection to municipal/regional wastewater systems, pretreatment standards, investigation of complaints, and notification procedures.

  Chapter 8 of AR 200-1 addresses Oil and Hazardous Substances Spill Contingency Planning, Control, and Emergency Response. It prescribes the policy and procedure for prevention and control of spills of oil and hazardous substances, and sets out guidance in accordance with regulations implemented by the CWA.

- AR 420-46, *Water and Sewage*, establishes policies and procedures governing facilities that supply water and dispose of sewage and industrial waste. It requires that cooperation be given to Federal, state, and local regulatory authorities in the abatement and control of pollution of surface and underground waters by sewage and industrial wastes from installations and activities.

F. Key Compliance Requirements

- Discharge Permits - NPDES permits are required for all point source discharges to "navigable waters." Discharges shall comply with all terms and conditions of an USEPA or state issued permit under the SPDES. Stormwater permits issued under the NPDES program are often needed for maintenance facilities.

- Monitoring, Recordkeeping, and Reporting - Discharge permits usually require monitoring that includes the installation, use, and maintenance of equipment for influent and effluent and receiving water sampling. Recordkeeping and reporting, including scheduled discharge monitoring reports (DMR), are also required.

- Discharges to Army POTWs/FOTWs or treatment plant of another DOD activity - Discharges to offsite treatment facilities shall meet all applicable general and categorical pretreatment standards in 40 CFR 401-471. Army installations that discharge to offsite treatment facilities must adhere to the discharge limitations that are stipulated in local ordinances. However, many local POTW/FOTW authorities have not yet developed pretreatment programs.

- Industrial Pretreatment - The USEPA has set effluent standards for many industries that discharge to POTWs/FOTWs. These categorical standards are contained in 40 CFR 404 to 471, and are implemented through local pretreatment programs established by POTWs/FOTWs. In some instances, a state may assume this local responsibility. Industrial discharge limitations may also be stipulated in local ordinances. Installations can control discharges and impose their own pretreatment requirements on discharges to their collection s. m through the installation wastewater regulation.

  Industrial activities on Army installations which may be subject to categorical discharge limitations are:
  -electroplating (40 CFR 413)
  -steam electric power generating (40 CFR 423)
  -metal finishing (40 CFR 433)
  -a hospital (40 CFR 460).

- Operator Certification/Training - state regulatory agencies require all superintendents and operators of waste treatment facilities to be certified by the state. Periodic refresher training is also required of treatment plant personnel to maintain their certification.

- Sludge Disposal - Sludge from wastewater treatment plants and pretreatment septics must be disposed of in accordance with state regulations. Normally, testing of sludge is required to ensure that it does not have heavy metal concentrations that would render it a hazardous waste. Permits are normally required to dispose of sludge by land application.

- Bulk aboveground storage tanks (over 660 gallons (gal)) are required to have secondary containment under 40 CFR 112.7(e). This secondary containment is required to be managed so that accumulated rainwater is tested prior to discharge and all discharges of petroleum products are avoided.

- SPCC Plan - Army installations that operate POL facilities are required to prepare a SPCC Plan (40 CFR 112). This plan must be prepared in accordance with the guidelines set forth in 40 CFR 112.7, and the plan must be reviewed every 3 years (yr) and modified within 6 months (mo) of significant changes in POL facilities, or if new, field proven technology has been developed which will significantly reduce the likelihood of a spill (40 CFR 112.5).

- Spill Response Training - All Army personnel involved with the management and handling of oil and hazardous substances must take part in periodic spill prevention and response training programs (40 CFR 112.7).

- Land Application of Sludge - 40 CFR 503 details the pollutant concentrations, cumulative loading rates, and other restrictions pertinent to the land application of sludge that is generated during the treatment of domestic sewage in a treatment works.

G. Responsibility for Compliance

- The Directorate of Engineering and Housing (DEH) is responsible for monitoring wastewater discharge and stream water quality at selected locations around the installation. This responsibility may also fall to the Directorate of Environmental Quality (DEQ).

- The Spill Response Team (SRT) is tasked to respond to spills when requested by an On-Scene Coordinator (OSC) and to perform spill containment, recovery, cleanup, disposal and restoration activities as directed by the OSC. The SRT is a multidisciplinary team often including the following persons: Facilities Engineer, Environmental Coordinator, Director of Safety and Health, Fire Chief, Military Police, Public Affairs Officer (PAO), Safety Officer, and Staff Judge Advocate.

- The Fire Department provides support in emergency response, spill events, exercises, and fire protection activities. In addition, the department will be responsible to make periodic fire safety inspections of flammable/combustible storage and handling areas, hazardous waste storage areas, and accumulation points on the installation.

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

- Fuels Management Officer of DEH is responsible for the safe and efficient receipt, storage, handling, issuing, and accounting of all petroleum products to include all general operations and inspections.

- DEH 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 DEH also is responsible for the calibration of permanently installed meters.

H. Key Compliance Definitions

These definitions were obtained from the Federal, DOD, and U.S. ARs cited previously, and from 40 CFR 122 and Section 402 of the CWA.

- *Active Sewage Sludge Unit* - a sewage sludge unit that has not closed (40 CFR 503.21(a)).

- *Aerobic Digestion* - the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air (40 CFR 503.31(a)).

- *Agricultural Land* - land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture (40 CFR 503.11(a)).

- *Agronomic Rate* - the whole sludge application rate (dry weight basis) designed (40 CFR 503.11(b)):
  1. to provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land
  2. to minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the groundwater.

- *Air Pollution Control Device* - one or more processes used to treat the exit gas from a sewage sludge incinerator stack (40 CFR 503.41(a)).

- *Anaerobic Digestion* - the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air (40 CFR 503.31(b)).

- *Annual Pollutant Loading Rate* - the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period (40 CFR 503.11(c)).

- *Annual Whole Sludge Application Rate* - the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period (40 CFR 503.11(d)).

- *Apply Sewage Sludge or Sewage Sludge Applied To The Land* - means land application of sewage sludge (40 CFR 503.9(a)).

- *Aquifer* - a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding groundwater to wells or springs (40 CFR 503.21(b)).

- *Auxiliary Fuel* - fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel (40 CFR 503.41(b)).

- *Base Flood* - a flood that has a 1 percent chance of occurring in any given year (i.e., a flood with a magnitude equaled once in 100 yr) (40 CFR 503.9(b)).

- *Blowdown* - the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by best engineering practices (40 CFR 401.11(p)).

- *Bulk Sewage Sludge* - sewage sludge that is not sold or given away in a bag or other container for application to the land (40 CFR 503.11(e)).

- *CN,A* - cyanide amenable to chlorination (40 CFR 413.02).

- *CN,T* - cyanide, total (40 CFR 413.02).

- *Chemical Metal Cleaning Waste* - any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning (40 CFR 423.11).

- *Class 1 Sludge Management Facility* - any POTW/FOTW, as defined in 40 CFR 501.2, required to have an approved pretreatment program under 40 CFR 403.8(a) (including any POTW/FOTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR 403.10(e)) and any treatment works treating domestic sewage. as defined in 40 CFR 122.2, classified as a Class 1 sludge management facility by the Environmental Protection Agency (EPA) Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

- *Class A Sludge* - when one of the following method is used, it is considered Class A with respect to pathogens:

- Alternative 1. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number/gram (g) of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per 4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10 (b), (c), (e), or (f).

The temperature of the sewage sludge that is used or disposed shall be maintained at a specific value for a period of time. When the percent solids of the sewage sludge is 7 percent or higher, the temperature of the sewage sludge shall be 50 degrees Celsius (^{o}C) or higher; the time period shall be 20 minutes (min) or longer; and the temperature and time period shall be determined using the following equation, except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

$$D = \frac{131{,}700{,}000}{10^{\,0.1400t}} \qquad \text{Eq. (2)}$$

Where, D=time in days. t=temperature in ^{o}C.

When the percent solids of the sewage sludge is 7 percent or higher and small particles of sewage sludge are heated by either warmed gases or an immiscible liquid, the temperature of the sewage sludge shall be 50 ^{o}C or higher; the time period shall be 15 seconds (s) or longer; and the temperature and time period shall be determined using the above equation.

When the percent solids of the sewage sludge is less than 7 percent and the time period is at least 15 s, but less than 30 min, the temperature and time period shall be determined using the above equation.

When the percent solids of the sewage sludge is less than 7 percent; the temperature of the sewage sludge is 50 ^{o}C or higher; and the time period is 30 min or longer, the temperature and time period shall be determined using the below equation.

$$D = \frac{50{,}070{,}000}{10^{\,0.1400t}} \qquad \text{Eq. (3)}$$

Where D=time in days. t=temperature in ^{o}C.

- Alternative 2. Either the density of fecal coliform in the sewage sludge is less than 1000 Most Probable Number/g of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number per 4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10 (b), (c), (e), or (f).

The pH of the sewage sludge that is used or disposed shall be raised to above 12 and shall remain above 12 for 72 hour (h).

The temperature of the sewage sludge shall be above 52 ^{o}C for 12 h or longer during the period that the pH of the sewage sludge is above 12.

At the end of the 72 h period during which the pH of the sewage sludge is above 12, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50 percent.

- Alternative 3. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number/g of total solids (dry weight basis), or the density of Salmonella sp. bacteria in sewage sludge shall be less than three Most Probable Number per 4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10 (b), (c), (e), or (f).

The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses.

When the density of enteric viruses in the sewage sludge prior to pathogen treatment is less than one Plaque-forming Unit per 4 g of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses until the next monitoring episode for the sewage sludge.

When the density of enteric viruses in the sewage sludge prior to pathogen treatment is equal to or greater than one Plaque-forming Unit per 4g of total

solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses when the density of enteric viruses in the sewage sludge after pathogen treatment is less than one Plaque-forming Unit per 4 g of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the enteric virus density requirement are documented.

After the enteric virus reduction is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented.

The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains viable helminth ova.

When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is less than 1 per 4 g of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova until the next monitoring episode for the sewage sludge.

When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is equal to or greater than 1 per 4 g of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova when the density of viable helminth ova in the sewage sludge after pathogen treatment is less than 1 per 4 g of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the viable helminth ova density requirement are documented.

After the viable helminth ova reduction is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to viable helminth ova when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented.

- Alternative 4. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge shall be less than three Most Probable Number/4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10 (b), (c), (e), or (f).

The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per 4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10 (b), (c), (e), or (f), unless otherwise specified by the permitting authority.

The density of viable helminth ova in the sewage sludge shall be less than one per 4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10 (b), (c), (e), or (f), unless otherwise specified by the permitting authority.

- Alternative 5. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number/g of total solids (dry weight basis), or the density of Salmonella, sp. bacteria in the sewage sludge shall be less than three Most Probable Number per 4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), (c), (e), or (f).

Sewage sludge that is used or disposed shall be treated in one of the Processes to Further Reduce Pathogens described in appendix B of 40 CFR 503.

- Alternative 6. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number/g of total solids (dry weight basis), or the density of Salmonella, sp. bacteria in the sewage sludge shall be less than three Most Probable Number per 4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), (c), (e), or (f).

Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Further Reduce Pathogens, as determined by the permitting authority.

- *Class B Sludge* - when one of the following methods is used, it is considered Class A with respect to pathogens:

- Alternative 1. Seven samples of the sewage sludge are collected at the time the sewage sludge is used or disposed. The geometric mean of the density of fecal coliform in the samples must be less than either 2,000,000 Most Probable Number/g of total solids (dry weight basis) or 2,000,000 Colony Forming Units/g of total solids (dry weight basis).
- Alternative 2. Sewage sludge that is used or disposed shall be treated in one of the Processes to Significantly Reduce Pathogens described in appendix B of 40 CFR 503.
- Alternative 3. Sewage sludge that is used or disposed of is treated in a process that is equivalent to a Process to Significantly Reduce Pathogens, as determined by the permitting authority.

• *Contaminate An Aquifer* - to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR 141.11 to be exceeded in groundwater or that causes the existing concentration of nitrate in groundwater to increase when the existing concentration of nitrate in the groundwater exceeds the maximum contaminant label for nitrate in 40 CFR 141.11 (40 CFR 503.21(c)).

• *Contiguous Zone* - the entire zone established or to be established by the United States under Article 24 of the Convention on the Territorial Sea and Contiguous Zone (40 CFR 110.1).

• *Continuous Discharge* - a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities (40 CFR 123.3).

• *Control Efficiency* - the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator (40 CFR 503.41(c)).

• *Cover* - soil or other material used to cover sewage sludge placed on an active sewage sludge unit (40 CFR 503.21(d)).

• *Cover Crop* - a small grain crop, such as oats, wheat, or barley, not grown for harvest (40 CFR 503.9(d)).

• *Cumulative Pollutant Loading Rate* - the maximum amount of an inorganic pollutant that can be applied to an area of land (40 CFR 503.11(f)).

• *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 (40 CFR 122.2).

- *Density Of Microorganisms* - the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge (40 CFR 503.31(c)).

- *Direct Discharge* - the discharge of a pollutant (40 CFR 122.2).

- *Discharge* - when used in relation to Section 311 of the Act, includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping, but excludes:
    1. discharges in compliance with a permit
    2. discharges resulting from circumstances identified and reviewed and made a part of the public record with respect to an issued permit and subject to a condition in the permit
    3. continuous or anticipated intermittent discharges from a point source, identified in a permit application that are caused by events occurring within the scope of relevant operating or treatment systems (40 CFR 110.1).

- *Dispersion Factor* - the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack (40 CFR 503.41(d)).

- *Displacement* - the relative movement of any two sides of a fault measured in any direction (40 CFR 503.21(e)).

- *Domestic Septage* - either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receive either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant (40 CFR 257.2).

- *Domestic Sewage* - waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works (40 CFR 503.9(g)).

- *Effluent Limitation* - any restriction established by the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources, other than new sources, into navigable waters, the waters of the contiguous zone or the ocean (40 CFR 401.11(i)).

- *Environmentally Sensitive Area* - an area of environmental importance which is in or adjacent to navigable waters (49 CFR 194.5).

- *Excluded Sludge* - The following are types of sludge and activities which are exempted from meeting the requirements outlined in 40 CFR 503:
    1. processes used to treat domestic sewage or processes used to treat sewage sludge prior to final use except for the standards on pathogen and vector reduction in 40 CFR 503.32 and 503.33
    2. sewage sludge co-fired in an incinerator with other wastes or for the incinerator in which sewage sludge and other waste are co-fired
    3. sludge generated at an industrial facility during the treatment of industrial wastewater, including sewage sludge generated during the treatment of industrial wastewater combined with domestic sewage
    4. sewage sludge determined to be hazardous
    5. sewage sludge with a concentration of PCBs equal to greater than 50 milligrams per kilograms (mg/kg) of total solids (dry weight basis)
    6. ash generated during the firing of sewage sludge in a sewage sludge incinerator
    7. grit (i.e., sand, gravel, cinders, or other material with high specific gravity) or screenings (i.e., relatively large materials such as rags) generated during preliminary treatment of domestic sewage in a treatment works
    8. sludge generated during the treatment of either surface water or groundwater used for drinking water
    9. commercial septage, industrial septage, a mixture of domestic septage and commercial septage, or a mixture of domestic septage and industrial septage (40 CFR 503.6).

- *Fault* - a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to strata on the other side (40 CFR 503.21(f)).

- *Feed Crops* - crops produced primarily for consumption by animals (40 CFR 503.9(j)).

- *Fiber Crops* - crops such as flax and cotton (40 CFR 503.9(k)).

- *Final Cover* - the last layer of soil or other material placed on a sewage sludge unit at closure (40 CFR 503.21(g)).

- *Fluidized Bed Incinerator* - an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas (40 CFR 503.41(e)).

- *Food Crops* - crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco (40 CFR 503.9(l)).

- *Forest* - a tract of land thick with trees and underbrush (40 CFR 503.11(g)).

- *FOTW* - Federally-Owned Treatment Works.

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *Holocene Time* - the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present (40 CFR 503.21(h)).

- *Hourly Average* - the arithmetic mean of all measurements, taken during an hour. At least two measurements must be taken during the hour (40 CFR 503.41(f)).

- *Indirect Discharge* - the introduction of pollutants into a POTW/FOTW from any non-domestic source regulated under Section 307(b), (c), or (d) of the Act (40 CFR 403.3(g)).

- *Industrial Activities* - in relation to stormwater runoff, industrial activities include:
    1. facilities subject to stormwater effluent limitations guidelines, new source performance standards under 40 CFR subchapter N
    2. facilities classified as Standard Industrial Classification 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323) 35, 344, 373
    3. facilities classified as Standards Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations and oil and gas explorations, production, processing, or treatment operations, or transmission facilities that discharge stormwater contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate product, finished products, byproducts or waste products located on the site of such operations
    4. hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Resource Conservation and Recovery Act, Subtitle C (RCRA C)
    5. landfills, land application sites, and open dumps that receive or have received industrial wastes, including those sites that are subject to Federal regulation
    6. facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but no limited to those classified as Standard Industrial Classification 5015 and 5093
    7. steam electric power generating facilities, including coal handling sites
    8. transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-25, 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport de-icing operations
    9. treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment,

recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludges that are located within the confines of the facility with a design flow of 1.0 mg per day or more, or required to have an approved pretreatment program. Not included are farmlands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the *CWA*

10. construction activity including clearing, grading, and excavation activities except operations that result in the disturbance of land less than 5 acres of total land area which are not part of a larger common plan of development or sale
11. facilities under Standard Industrial Classifications 20 ,21 ,22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-25, (and which are not otherwise included in categories 1 to 10) (40 CFR 122.26(b)(14)(i) through 122.26(b)(14)(xi)).

- *Industrial User* - a source of indirect discharge (40 CFR 403.3(h)).

- *Industrial Wastewater* - wastewater generated in a commercial or industrial process (40 CFR 503.9(n)).

- *Integrated Facility* - a facility that performs electroplating as only one of several operations necessary for manufacture of a product at a single physical location and has significant quantities of process wastewater from non-electroplating sources (40 CFR 413.02).

- *Interference* - a discharge that, alone or in conjunction with one or more discharges from other sources, inhibits or disrupts the POTW/FOTW and causes a violation of any requirement of the POTW's/FOTW's NPDES permit (40 CFR 403.3(j)).

- *Job Shop* - a facility which owns not more than 50 percent (annual area basis) of the materials undergoing metal finishing (40 CFR 433.11).

- *Land Application* - the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil (40 CFR 503.11(h)).

- *Land With A High Potential For Public Exposure* - land that the public uses frequently. This includes, but is not limited to, a public contact site and a reclamation site located in a populated area (i.e., a construction site located in a city) (40 CFR 503.31(d)).

- *Land With A Low Potential For Public Exposure* - land the the public uses infrequently. This includes, but is not limited to, agricultural land, forest, and a reclamation site located in an unpopulated area (i.e., a strip mine located in a rural area) (40 CFR 503.31(e)).

- *Leachate Collection System* - a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit (40 CFR 503.21(i)).

- *Liner* - soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second (cm/s) or less (40 CFR 503.21(j)).

- *Lower Explosive Limit For Methane Gas* - the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 ^{o}C (77 ^{o}F) and atmospheric pressure (40 CFR 503.21(k)).

- *Metal Cleaning Wastes* - any wastewater resulting from cleaning (with or without chemical cleaning compounds) any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning (40 CFR 423.11).

- *Monthly Average* - the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month (40 CFR 503.41(h)).

- *Monthly Average* - the arithmetic mean of all measurements taken during the month (40 CFR 503.11(i)).

- *Municipality* - a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities: created by or under state law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201(e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use, or disposal of sewage sludge (40 CFR 503.9(o)).

- *National Pretreatment Standard* - any regulation containing pollutant discharge limits promulgated by the USEPA (40 CFR 403.3(j)).

- *Navigable Waters* - the waters of the United States, including the territorial seas. The terms includes:
  1. all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide
  2. interstate waters, including interstate wetlands
  3. all other waters such as intra-state lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands, the use, degradation, or destruction or which would affect or could affect interstate or foreign commerce including any such waters:
     -that are or could be used by interstate of foreign travelers for recreational or other purposes
     -from which fish or shellfish are or could be taken and sold in interstate or foreign commerce
     -that are used or could be used for industrial purposes by industries in interstate commerce.
  4. all impoundments of waters otherwise defined as navigable waters under this section
  5. tributaries of waters identified above, including adjacent wetlands
  6. wetlands adjacent to waters identified above (40 CFR 110.2).

- *New Source* - in relation to NPDES permits, any building, structure, facility, or installation from which there is or may be a "discharge of pollutants" the construction of which commenced: - after promulgation of standards of performance under Section 306 of CWA which are applicable to such sources, or - after proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

  The following are the criteria for new source determination:
  - it is constructed at a site at which no other source is located, or
  - it totally replaces the process or production equipment that causes the discharge of pollutants at an existing sources, or
  - its processes are substantially independent of an existing source at the same site (40 CFR 122.2 and 122.29(b)).

- *New Source* - any building, structure, facility, or installation from where there is or may be the discharge of pollutants, the construction of which is commenced after the publication of proposed regulations prescribing a standard of performance under Section 306 of the Act, which will be applicable to such source if such standard is thereafter promulgated in accordance with Section 305 of the Act (40 CFR 401.11(e)).

- *Noncontact Cooling Water* - water used for cooling which does not come into direct contact with any raw material, intermediate product, waste product, or finished product (40 CFR 401.44(o)).

- *NPDES Permit* - a permit issued to a POTW/FOTW pursuant to Section 402 of the Act. NPDES means National Pollutant Discharge Elimination system (40 CFR 403.3(l)).

- *Oil* - when used in relation to Section 311 of the Act, means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil (40 CFR 110.2).

- *Onshore Oil Pipeline Facilities* - new and existing pipe, rights of way and any equipment, facility, or building used in the transportation of oil located in, on, or under, any land within the United States other than submerged land (49 CFR 194.5).

- *Operator* - in relationship to onshore oil pipeline facilities, a person who owns or operates onshore oil pipeline facilities (49 CFR 194.5).

- *Other Container* - either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of 1 metric ton (1.1 short tons) or less (40 CFR 503.11(j)).

- *pH* - the logarithm of the reciprocal of the hydrogen ion concentration (40 CFR 503.31(g)).

- *Pass Through* - a discharge which exits the POTW/FOTW into waters in quantities or concentrations which, alone or in conjunction with a discharge from other sources, is a cause of a violation of any requirement of the POTW's/FOTW's NPDES permit (40 CFR 403.3(n)).

- *Pasture* - land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover (40 CFR 503.11(k)).

- *Pathogenic Organisms* - disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova (40 CFR 503.31(f)).

- *Person* - an individual, association, partnership, corporation, municipality, state or Federal agency, or an agent or employee thereof (40 CFR 503.9(q)).

- *Person Who Prepares Sewage Sludge* - either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge (40 CFR 503.9(r)).

- *Pipeline* - all parts of an onshore pipeline facility through which oil moves, including, but not limited to, line pipe, valves, and other appurtenances connected to the line pipe, pumping units, fabricated assemblies associated with pumping units, metering and delivery stations and fabricated assemblies therein, and breakout tanks (49 CFR 194.5).

- *Place Sewage Sludge or Sewage Sludge Placed* - means disposal of sewage sludge on a surface disposal site (40 CFR 503.9(s)).

- *Point Source* - any discernible confined and discrete conveyance including but not limited to a pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater (40 CFR 122.2 and 40 CFR 401.11(d)).

- *Pretreatment* - the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW/FOTW (40 CFR 403.3(q)).

- *Process Wastewater* - any water which 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 (40 CFR 401.44(q)).

- *Public Contact Site* - land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses (40 CFR 503.11(l)).

- *POTW* - a treatment works which is owned by the state or a municipality. This includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey waste to a POTW (40 CFR 403.3(o)).

- *Qualified Individual* - an English-speaking representative of an operator, located in the United States, available on a 24 h basis, with full authority to: activate and contract with required oil spill removal organizations; activate personnel and equipment maintained by the operator; act as liaison with the On Scene Coordinator; and obligate any funds required to carry out all required or directed oil response activities (49 CFR 194.5).

- *Qualified Groundwater Scientist* - an individual with a baccalaureate or postgraduate degree in the natural sciences or engineering who has sufficient

training and experience in groundwater hydrology and related fields, as may be demonstrated by state registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding groundwater monitoring, pollutant fate and transport, and corrective action (40 CFR 503.21(l)).

- *Range Land* - open land with indigenous vegetation (40 CFR 503.11(m)).

- *Reclamation Site* - drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites (40 CFR 503.11(n)).

- *Response Activities* - the containment and removal of oil from the water and shorelines, the temporary storage and disposal of recovered oil, or the taking of other actions as necessary to minimize or mitigate damage to the environment (49 CFR 194.5).

- *Response Area* - the inland zone or coastal zone, as defined in the National Contingency Plan, in which response activity is occurring (49 CFR 194.5).

- *Response Plan* - the operator's core plan and the response zone appendices for responding, to the maximum extent practicable, to a worst case discharge of oil, or the substantial threat of such a discharge (49 CFR 194.5).

- *Response Zone* - a geographic area, either along a length of pipeline or including multiple pipelines, containing one or more adjacent line sections, for which the operator must plan for the deployment of, and provide, spill response capabilities (49 CFR 194.5).

- *Risk Specific Concentration* - the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of the site where the sewage sludge incinerator is located (40 CFR 503.41(i)).

- *Runoff* - rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off of the land surface (40 CFR 503.9(v)).

- *Seismic Impact Zone* - an area that has a 10 percent or greater probability that the horizontal ground level acceleration of the rock in the area exceeds 0.10 gravity once in 250 yr (40 CFR 503.21(m)).

- *Sewage Sludge* - solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage, scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from

sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludges in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewerage in a treatment works (40 CFR 257.2)

- *Sewage Sludge Feed Rate* - either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located (40 CFR 503.41(j)).

- *Sewage Sludge Incinerator* - an enclosed device in which only sewage sludge and auxiliary fuel are fired (40 CFR 503.41(k)).

- *Sewage Sludge Unit* - land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR 122.2 (40 CFR 503.21(n)).

- *Sewage Sludge Unit Boundary* - the outermost perimeter of an active sewage sludge unit (40 CFR 503.21(o)).

- *Sheen* - an iridescent appearance on the surface of the water (40 CFR 110.2).

- *Sludge* - an aggregate of oil or oil and other matter of any kind in any form other than dredged spoil having a combined specific gravity equivalent to or greater than water (40 CFR 110.2).

- *Specific Oxygen Uptake Rate (SOUR)* - the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in the sewage sludge (40 CFR 503.31(h)).

- *Spill Event* - a discharge of oil into or upon the navigable waters of the United States or adjoining shorelines in harmful quantities (40 CFR 112.3).

- *SPCC Plan* - The SPCC plan shall be a carefully thought-out plan prepared in accordance with good engineering practices, and which has the full approval of management at a level with authority to commit the necessary resources (40 CFR 112.3).

- *Stack Height* - the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack

when the difference is equal to or less than 65 m (214.5 feet (ft)). When the difference is greater than 65 m (214.5 ft), stack height is the creditable stack height determined in accordance with 40 CFR 51.100(ii) (40 CFR 503.41(l)).

- *Store or Storage Of Sewage Sludge* - the placement of sewage sludge on land on which the sewage sludge remains for 2 yr or less. This does not include the placement of sewage sludge on land for treatment (40 CFR 503.9(y)).

- *Stormwater Discharge Associated with an Industrial Activity* - the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw materials storage areas at any industrial plant. This does not include discharges from facilities excluded from the NPDES program. For the categories of industries identified in the definition for *Industrial Activities*, the item numbers 1 through 10, the term includes, but is not limited to stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste wastes; sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater. For item number 11 in the definition for *Industrial Activities* the term includes only stormwater discharges from all the areas (except access roads and rail lines) that are listed in the previous sentence where materials handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to stormwater (40 CFR 122.26(b)(14)).

- *Strong Chelating Agents* - all compounds which, by virtue of their chemical structure and amount present, form soluble metal complexes which are not removed by subsequent metals control techniques such as pH adjustment followed by clarification or filtration (40 CFR 413.02).

- *Surface Disposal Site* - an area of land that contains one or more active sewage sludge units (40 CFR 503.21(p)).

- *Total Toxic Organics* - TTO (40 CFR 413.02).

- *Total Hydrocarbons* - the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane (40 CFR 503.41(m)).

- *Total Metal* - the sum of the concentrations of mass of copper, nickel, chromium, and zinc (40 CFR 413.02).

- *Total Solids* - the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 ^{o}C (217.4 to 221 ^{o}F) (40 CFR 503.31(i)).

- *Treat or Treatment Of Sewage Sludge* - the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge (40 CFR 503.9(z)).

- *Treatment Works* - either a Federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature (40 CFR 503.9(aa)).

- *Unstable Area* - land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement (40 CFR 503.21(q)).

- *Unstabilized Solids* - organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process (40 CFR 503.31(j)).

- *Vector Attraction* - the characteristic of sewage sludge that attracts rodents, flies, mosquitos, or other organisms capable of transporting infectious agents (40 CFR 503.31(k)).

- *Volatile Solids* - the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 ^{o}C (1022 ^{o}F) in the presence of excess air (40 CFR 503.31(l)).

- *Wet Electrostatic Precipitator* - an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack (40 CFR 503.41(n)).

- *Wetlands* - those areas that are inundated or saturated by surface water or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (40 CFR 503.9(bb)).

- *Wetlands* - those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in

saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds (40 CFR 110.2).

- *Wet Scrubber* - an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack (40 CFR 503.41(o)).

- *Worst Case Discharge* - the largest foreseeable discharge of oil, including a discharge from fire or explosion, in adverse weather conditions (49 CFR 194.5).

CLEAN WATER ACT (CWA)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All installations	2-1 through 2-6	(1)(2)(3)(9)(21)(22)
Wetland	2-7 and 2-8	(1)(2)
NPDES permits	2-9 through 2-16	(1)(2)(9)(14)(22)
POTWs/FOTWs		
Discharges	2-17 through 2-23	(1)(9)(14)
Operations	2-24 through 2-26	(1)(9)(14)
Effluent Limitations:		
Steam electric generating sources	2-27 through 2-33	(2)(9)(14)
New sources	2-34 through 2-38	(2)(9)(14)
Existing sources	2-39	(2)(9)(14)
Electroplating point sources	2-40 through 2-46	(2)(9)(14)
Metal finishing point sources	2-47 through 2-49	(2)(9)(14)
Existing Metal finishing point sources	2-50	(2)(9)(14)
New metal finishing point sources	2-51 and 2-52	(2)(9)(14)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(3) Preventive Medicine Officer
(5) Fire Department
(6) Director of Logistics (DOL)
(7) Fuels Management Officer (DOL/DEH)
(9) Chief of Operations and Maintenance (O&M)
(13) Engineering, Plans, and Services (EP&S)
(14) Wastewater Treatment Plant Supervisor (O&M)
(16) Building and Grounds Division (DEH)
(17) Entomology Shop (DEH)
(18) TSDF Operators (DEH,DOL,DRMO)
(21) Public Affairs Office (PAO)
(22) Staff Judge Advocate

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
Photo labs	2-53	(2)(9)(14)
Hospital	2-54	(2)(9)(14)
Petroleum Products	2-55 through 2-68	(2)(4)(6)(9)(13)
Discharges/Spills	2-69 through 2-71	(1)(2)(5)(7)(16)(17)(18)
Petroleum Products Storage/Containment	2-72 through 2-81	(1)(2)(5)(6)(7)(9)(13)(16)(17)(18)
Pipelines	2-82 through 2-84	(1)(2)(5)(6)(9)
Land Application of Sludge		
General	2-85 through 2-91	(1)(2)(9)(14)(16)
Vectors and Pathogens	2-92 through 2-96	(1)(2)(9)(14)(16)
Notification	2-97 through 2-101	(1)(2)(9)(14)(16)
Monitoring	2-102 and 2-103	(1)(2)(9)(14)(16)
Recordkeeping and Reporting	2-104 through 2-111	(1)(2)(9)(14)(16)
Surface Disposal of Sludge		
General	2-112 through 2-118	(1)(2)(9)(14)(16)
Monitoring and Documentation	2-119 through 2-124	(1)(2)(9)(14)(16)
Sludge Incineration	2-125 through 2-132	(1)(2)(9)(14)(16)
Swimming Pools	2-133 and 2-134	(1)(2)(3)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(3) Preventive Medicine Officer
(5) Fire Department
(6) Director of Logistics (DOL)
(7) Fuels Management Officer (DOL/DEH)
(9) Chief of Operations and Maintenance (O&M)
(13) Engineering, Plans, and Services (EP&S)
(14) Wastewater Treatment Plant Supervisor (O&M)
(16) Building and Grounds Division (DEH)
(17) Entomology Shop (DEH)
(18) TSDF Operators (DEH,DOL,DRMO)
(21) Public Affairs Office (PAO)
(22) Staff Judge Advocate

CLEAN WATER ACT (CWA)

Plans and Maps to Review

- Spill Prevention Control and Countermeasure (SPCC) Plan
- Sewer and storm drain layout
- Design plans for wastewater and industrial waste treatment plants, including treatment basins
- Utility and general site maps, diagrams - plumbing (maintenance shops)
- Stormwater pollution prevention plans
- Pollution prevention plans

Records to Review

- NPDES/SPDES Permits
- NPDES/SPDES Permit renewal applications (if expire within 180 days)
- Discharge monitoring reports for the past 2 yr
- Laboratory records and procedures and USEPA QA results
- 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
- Special reports, certifications, etc., required by NPDES permit
- All records required by SPCC Plan
- Oil transfer manual (33 CFR 154 and 156)
- All notices of noncompliance
- All notices of violations
- NPDES state or Federal inspection reports and citations/violations
- Sewage treatment plant operator certification
- Administrative orders
- Local sewer ordinance
- Local service use permit
- Notification to local POTW/FOTW
- Old spill reports
- Repair/Maintenance records for the wastewater treatment system
- Names and phone numbers of operator of sewage treatment plant/central vehicle wash facilities
- Lab operators (wastewater analysis)
- Stormwater permits
- Federal facilities compliance agreements
- Pretreatment permits
- Facility response pland required by the Oil Pollution Act
- Swimming pool/beaches operator

Physical Features to Examine

- Discharge to POTW/FOTW
- Discharge/outfall pipes (i.e., maintenance shops, hardstands, parking lots)
- Wastewater treatment facilities
- Industrial treatment facilities (from inlet to outfall)
- Stormwater ditches around motor pools
- Streams, rivers, open waterways
- Floor & sink drains (especially in industrial and maintenance areas)
- Stormwater collection points (especially in industrial and maintenance areas)
- POL storage tanks

- Oil/water separators and other pretreatment devices such as sand and grit traps, grease traps, and sand interceptors
- Fire Training Pit
- Nonpoint source discharge areas (parking lots and vehicle/aircraft hardstands)
- Motor pools and vehicle maintenance stands, plumbing, drains, and discharges (end of pipe)
- Wash racks (centralized facilities, individual and areas in vicinity of maintenance shop)
- Catch basins, drop inlets, holding/retention ponds
- Wastewater generation points/sources
- Electrical grease racks and inspection racks
- Waste and sump collection points
- Detention ponds from vehicle washing operations (especially I.D. POL products)
- Vehicle maintenance inspection pits and ramps
- Sludge disposal areas (especially from vehicle wash racks and central facilities)
- Battery and radiator repair operations
- Ash disposal areas from incinerators (i.e. pathological)

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Preventive Medicine Officer
- Fire Department
- Director of Logistics (DOL)
- Chief of Operations and Maintenance (O&M)
- Engineering, Plans, and Services (EP&S)
- Wastewater Treatment Plant Supervisor (O&M)
- Public Affairs Office (PAO)
- Staff Judge Advocate
- Central Vehicle Wash Facility Operating Supervisor
- Maintenance Officers (Company, Battalion, Brigade Site Units)
- Fuels Management Officer (DOL/DEH)
- Building and Grounds Division (DEH)
- Entomology Shop (DEH)
- TSDF Operators (DEH,DOL,DRMO)
- Safety
- Spill Response Team
- DRMO Personnel

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
2-1. Determine actions or changes since previous review of wastewater discharges (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)(2)
...	...
2-2. The installation should maintain current and effective regulations on wastewater discharge requirements (GMP).	Verify current copies of the following, which are applicable, are maintained at the installation: (1)(2)(3)(22) - 40 CFR 110, *Discharge of Oil.* - 40 CFR 112, *Oil Pollution Prevention.* - 40 CFR 122, *The National Pollutant Discharge Elimination System.* - 40 CFR 136, *Test Procedures for the Analysis of Pollutants.* - 40 CFR 141, *National Primary Drinking Water Regulations.* - 40 CFR 257, *Criteria for Classification of Solid Waste Disposal Facilities and Practices.* - 40 CFR 323, *Permits for Discharges of Dredged or Fill Material Into Waters of the United States.* - 40 CFR 401, *General Provisions.* - 40 CFR 403, *General Pretreatment Regulations for Existing and New Sources.* - 40 CFR 413, *Electroplating Point Source Category.* - 40 CFR 423, *Steam Electric Power Generating Point Source Category.* - 40 CFR 433, *Metal Finishing Point Source Category.* - 40 CFR 459, *Photographic Point Source Category.* - 40 CFR 460, *Hospital Point Source Category.* - 40 CFR 503, *Standards for Use or Storage of Sewage Sludge.* - EO 12088, *Federal Compliance with Pollution Standards.* - DOD Instruction 4120.14, *Policies for Improvements Needed to Abate Water Pollution Emanating from DOD Facilities.* - DOD Directive 4140.25M, *Procedures for the Management of Petroleum Products.* - DOD Directive 5030.41, *Oil and Hazardous Substances Pollution Prevention and Contingency Program.* - AR 200-1, *Environmental Protection and Enhancement.* - TM 5-665, *Operations and Maintenance of Domestic and Industrial Wastewater Systems.* - *Standard Methods for Water/Wastewater Analysis.* - Applicable state and local regulations. Determine if current state/local wastewater discharge regulations are maintained and followed at the installation. (1)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-3. Installations are required to comply with all applicable state and local requirements (EO 12088, Section 1-1).	Verify that the installation is complying with state and local requirements. (1)(2) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2) (NOTE: Issues which are typically regulated by state and local agencies include: - nonpoint sources - wastewater - monitoring and recordkeeping for NPDES permitted sources - certification requirements for laboratories analyzing samples - wastewater treatment plant operator certification - sludge disposal - pretreatment standards - discharges to sewage treatment facilities - industrial wastewater - septic tanks - stormwater discharge - stormwater pollution prevention plan - certification requirements for employees.)
...	...
2-4. *Management of* paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weakness in the overall operation (GMP).	*Determine what management systems* are in place. (1)(2) Verify that the existing system addresses the issues associated with the *CWA* by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)
...	...
2-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning the *CWA* have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the regulatory requirement and the basis of the finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-6. Each installation is required to have a system for investigating water pollution complaints and allegations from individuals and water pollution control authorities (AR 200-1, para 3-3g(1) and 3-3g(2)).	Determine if there are procedures for investigating water pollution complaints and allegations. (1)(2)(9)(21)(22) Verify that any cases of legal or potential legal action were reported immediately through Judge Advocate channels to Army Headquarters. (1)(2)(9)(21)(22)
...	...
WETLANDS	
2-7. Department of the Army (DA) permits are required for the discharge of dredged or fill material into waters of the United States (33 CFR 323.3 (a)(b)).	Determine if the installation has wetlands. (1)(2) Verify that any activities involving dredging and filling wetlands are permitted by the Army Corps of Engineers (COE). (1)(2) (NOTE: "Fill material" means any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a waterbody. The term does not include any pollutant discharged into the water primarily to dispose of waste, as that activity is regulated under section 402 of the CWA.)
...	...
2-8. Wetlands and waters of the United States should be noted in installation planning maps (GMP).	Verify that wetlands and waters of the United States are noted on installation planning maps. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
NPDES PERMITS	
2-9. Installations with point source discharges and/or treatment works treating domestic sewage are required to have a Federal NPDES permit if located in states without an USEPA approved NPDES permit program (40 CFR 122.1(b)(3)).	Determine if the facility is located in a state with an USEPA approved NPDES permit program. (1)(2)(22) Verify that the facility has obtained the proper permits for point source discharges and/or treatment works treating domestic sewage. (1)(2) Verify that the facility is operating according to permit requirements such as: (1)(2) - monitoring/sampling - concentrations of discharge constituents - recordkeeping - reports. (NOTE: The Regional Administrator may require the facility to have a permit for the use/disposal of sewage sludge as necessary to protect public health.) (NOTE: The NPDES permit may also address issues of stormwater runoff.)
...	...
2-10. Installations which are dischargers of stormwater associated with an industrial activity (see definitions) are required to apply for an individual permit, apply for a permit through a group application, or seek coverage under a promulgated stormwater general permit (40 CFR 122.26 (c)).	Determine if the installation is discharging stormwater associated with an industrial activity. (1)(2)(22) Verify that an application has been submitted for a permit. (1)(2)
...	...
2-11. Samples required by the NPDES permit must be processed using proper collection, preservation, testing, and shipping procedures (40 CFR 136.1 through 136.4).	Verify the following: (2)(9)(14) - proper sample containers are used - samples are refrigerated during compositing - proper preservation techniques are used - proper test procedures are used.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-12. Analytical testing must be done in accordance with USEPA approved analytical procedures (40 CFR 136.3).	Determine if: (2) - a USEPA approved analytical testing lab was used - proper approval was obtained from state/USEPA if alternate analytical procedures are used - parameters other than those required by the permit are analyzed - satisfactory calibration and maintenance of instruments and equipment is done - quality control procedures are used - duplicate samples are analyzed - spiked samples are used - a commercial laboratory is used - the commercial laboratory is state certified (states with formal certification program).
...	...
2-13. Each permitted discharge point should be free from contaminants/ pollutants (GMP).	Check each permitted effluent discharge point on the installation. Note appearance, odors, or other observed characteristics (oil sheen, visible foam, visible floating solids, color). (2)(9)(14)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-14. Installations with NPDES permits are required to meet specific reporting requirements (40 CFR 122.41(l)).	Verify that the installation gives notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility when: (2)(22) - the alteration or addition might meet one of the criteria for determining if the facility is a new source (see definitions) - the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged (this applies to pollutants which are not subject to requirements on the permit or other notifications) - the alteration or addition results in a significant change in the installation's sludge use or disposal practices. Verify that the installation notifies the Director of any planned changes at the permitted facility or activity which may result in noncompliance with permit requirements. (2) Verify that monitoring is reported as required on the permit. (2) Determine if the installation is monitoring more frequently than required. (2) Verify that if the installation is monitoring more frequently than required by permit these results are also being reported. (2) Verify that reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule on the permit are submitted no later than 14 days following each specified date. (2) Verify that noncompliance which might endanger health or the environment is reported as follows: (2) - orally within 24 h from the time the facility becomes aware of noncompliance - in writing within 5 days of the time the facility becomes aware of noncompliance.
...	...
2-15. Noncompliance must be reported (AR 200-1, para 3-3a(4)).	Determine if potential problems that might cause installation to be in noncompliance with permits are reported. (2)(9) Verify that NOV reports are sent through command channels to USAEC, ATTN: SFIM-AEC-ECS. (2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-16. Even where not covered by NPDES permit, stormwater discharge on the installation should be uncontaminated and periodic surveillance of these discharges should be completed (GMP).	Check stormwater surveillance locations. (9) Determine if there have been any instances of elevated readings for any parameters by reviewing the analytical records. (9) Check the plans for the storm sewer system and locations of all outfalls and discharge points. (9) Check areas of stormwater discharge physically for evidence of contamination (oil sheen, discoloration, etc.). (9) Verify that oil/water separators on the installation that discharge into the storm sewer are operating properly and are being maintained. (9) Check major industrial shops or industrial areas physically and look for evidence of contaminated waste streams discharging to floor drains, to storm system, or to catch basins. Key shops to be visited include: (9) - battery shop - corrosion control - engine shop - motor pool - paint shop - plating shop - petroleum, oils, and lubricant (POL) area - pesticide shop - DRMO.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DISCHARGES TO POTWs/FOTWs **2-17.** Installations must not discharge into a POTW/FOTW any pollutant which would cause "pass through" or "interference" (40 CFR 403.5(a) and 403.5(c)(2)). ...	Determine the following: (1)(9)(14) - what point source discharges are at the installation - what drains in the installation lead to the treatment works - what personnel pour down the drains leading to the treatment works - what types of materials are located in areas where spills may reach the drains to the treatment works. Verify that the installation is not discharging to a POTW/FOTW pollutants which would cause a "pass through" or "interference" (see definitions). (9)(14) Determine if the POTW/FOTW has imposed any pretreatment or reporting requirements on the installation. (9)(14) Verify that any pretreatment standards or reporting requirements imposed upon the installation by the POTW/FOTW are being met. (9)(14) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-18. Installations shall not introduce specific pollutants into a POTW/FOTW (40 CFR 403.5(b)).	Verify that pollutants which create a fire or explosion hazard in the POTW/FOTW, including but not limited to waste streams with a closed cup flashpoint of less than 140 ^{0}F, are not being discharged from the installation to a POTW/FOTW. (1)(9)(14) Verify that pollutants which will cause corrosive structural damage to the POTW/FOTW are not being discharged from the installation to a POTW/FOTW. (9)(14) Verify that in no case are discharges below a pH of 5.0 released. (9)(14) Verify that solid or viscous pollutants in amounts which will cause obstruction to the flow are not being discharged to the POTW/FOTW. Examples are: (9)(14) - fish cleaning stations - pieces of metals, rubber, and wood from shops - sand and sediment. Verify that no pollutants, including oxygen demand pollutants, are released at a flow rate or concentration that will cause interference with the POTW/FOTW. (9)(14) Verify that heat in amounts that would inhibit biological activity at the POTW/FOTW resulting in interference is not discharged. Examples are: (9)(14) - scrubber water - boiler blow down. (NOTE: In no case will the temperature of a discharge result in a temperature at the POTW/FOTW of greater than 104 ^{0}F.) Verify that petroleum, oil, nonbiodegradable cutting oil, or products of mineral oil origin are not discharged in amounts that would result in a pass through or interference (specifically check maintenance areas and oil/ water separators hooked up to the sanitary sewer). (9)(14) Verify that pollutants which would result in the presence of toxic gases, vapors, or fumes within the POTW/FOTW in quantities that would cause acute worker health and safety problems are not discharged. (9)(14) Verify that no trucked or hauled pollutants are discharged except at discharge points designated by the POTW/FOTW. (9)(14) Determine if the installation has been granted any exemptions or variances concerning its discharges. (9)(14) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-19. Installations are required to notify the POTW/FOTW immediately of any discharge, including slug loading, that could cause problems to the POTW/FOTW (40 CFR 403.12 (f)).	Verify that personnel at the installation are aware of the need to notify the POTW/FOTW of any discharge that would cause problems. (1)(9)(14)
...	...
2-20. Industrial users that are not required to meet a categorical pretreatment standard are required to submit specific reports (40 CFR 403.12(h)).	Verify that if the installation is a significant noncategorical industrial user, it submits a description of the nature, concentration, and flow of the pollutants required by the Control Authority to the Control Authority. (1)(9)(14) (NOTE: The Control Authority is 1) the POTW/FOTW if the POTW's/FOTW's submission for its pretreatment program has been approved, 2) the Approval Authority if the submission has not been approved.)
...	...
2-21. Industrial users are required to notify the POTW/FOTW, the USEPA Regional Waste Management Division Director and State hazardous waste authorities in writing of any discharge into the POTW/FOTW of a substance which would be a hazardous waste (40 CFR 403.12(p)).	Determine if the installation is discharging any substance to a POTW/FOTW which would be classified as a hazardous waste if disposed of by any other method. (1)(9)(14) Verify that if they are discharging a hazardous waste to the POTW/FOTW, the correct people have been notified of the following: (1)(9)(14) - the name of the waste - the type of discharge (batch, continuous, or other). Verify that if the discharge is more than 100 kg/mo the following information is also included to the extent that it is known and readily available: (1)(9)(14) - identification of the hazardous constituents - an estimate of the mass and concentrations of the constituents in the waste discharges during the calendar month.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-22. All industrial users are required to notify the POTW/FOTW in advance of any substantial change in the volume of character of pollutants in their discharge (40 CFR 403.12(j)).	Verify that sources of industrial discharge on the installation notify the POTW/FOTW in advance of any substantial change in the volume or character of pollutants in their discharge, including the listed or characteristic hazardous wastes for which the industrial user has submitted an initial notification under 40 CFR 403.12(p). (1)(9)(14)
...	...
2-23. Industrial users and POTWs/FOTWs are required to keep specific reports (40 CFR 403.12(o)).	Verify that the installation and the POTW/FOTWs keeps records of all information resulting from monitoring activities. (1)(9)(14) Verify that the records include for all samples the following information: (1)(9)(14) - the date, exact place, methods, and time of sampling and the names of the person or persons taking the samples - the dates analyses were performed - who performed the analyses - the analytical techniques/methods used - the results of the analyses. Verify hat records are kept for 3 yrs. (1)(9)(14)
...	...
FOTWS OPERATIONS	
2-24. Personnel engaged or employed in operation and maintenance of water pollution control facilities must be trained (AR 200-1, para 3-6).	Verify that periodic training is conducted by interviewing operating/maintenance staff at plant and reviewing the operating staff training records. (1)(9)(14)
...	...
2-25. Supervisors at Army treatment plants are required to provide training in safety and occupational hazards to operating staff (TM 5-665, para 17-1).	Verify that safety and occupational hazards instructions are posted around the plant or readily available to plant personnel. (1)(9)(14) Verify that continual training is conducted on proper safety practices at the plant. (9)(14)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-26. Treatment plant supervisors are required to maintain certain operating logs and records (TM 5-665, para 16-3).	Verify that logs and records of the plant supervisor of the domestic wastewater plant are present. (1)(9)(14) Verify that forms are posted daily and are neat and legible. (9)(14) Check with treatment plant supervisor and compare industrial wastewater effluent with permit limitation. (9)(14) Verify that copies are distributed as follows: (9)(14) - original retained by DEH - duplicate to MACOM - required copies are submitted to state.
...	...
EFFLUENT LIMITATIONS **Steam Electric Power Generating Sources**	
2-27. Installations that have steam electric power generating point sources are subject to certain point source effluent limitations (40 CFR 423.12 (b)(1) through 423.12 (b)(2) and 423.12(b)(12)).	Determine whether the installation engages in the generation of electricity using fossil fuel sources and employing the steam water system as the thermodynamic medium. (2)(9)(14) Verify that the following limitations for steam generation point source effluent are met: (2)(9)(14) - pH of all discharges, except once through cooling water, is in the range of 6.0 to 9.0 - there is no discharge of polychlorinated biphenyl (PCB) compounds. (NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the limitations listed here.) (NOTE: This applies to electric power generating facilities utilizing fossil-type fuel or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-28. Installations that have steam electric power generating point sources are subject to certain point source effluent limitations (40 CFR 423.12 (b)(3) through 423.12(b) (7) and 423.12(b) (12)).	Verify that the quantity of pollutant discharged from low volume waste sources and in fly ash and bottom ash transport water do not exceed the quantity determined by multiplying the flow of either source times the concentration listed in Table 1 of Appendix 2-1. (2)(9)(14) Verify that the quantity of pollutants discharged in metal cleaning wastes do not exceed the quantity determined by multiplying the flow of metal cleaning wastes times the concentration listed in Table 2 of Appendix 2-1. (2)(9)(14) Verify that the quantity of free available chlorine discharged in once through cooling water or in cooling tower blow down does not exceed the quantity determined by multiplying the flow of either source times the concentration listed below: (2)(9)(14) - Maximum Concentration (mg/liter (L)) = 0.5 - Average Concentration (mg/L) = 0.2. (NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the limitations listed here.) (NOTE: This applies to electric power generating facilities utilizing fossil-type fuel or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium.)
...	...
2-29. Installations discharging free available chlorine and total residual chlorine are subject to certain point source effluent limitations (40 CFR 423.12(b)(8) and 423.12(b)(12)).	Verify that neither free available chlorine nor total residual chlorine are discharged from any unit for more than 2 h per day and not more than one unit in any plant discharges at a time unless permission to do so has been granted by the appropriate authority. (2)(9)(14) (NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the limitations listed here.)
...	...
2-30. Installations discharging coal pile runoff are subject to certain point source effluent limitations (40 CFR 423.12 (b)(9) through 423.12 (b)(11) and 423.12 (b)(12)).	Determine whether the installation is discharging coal pile runoff. (2)(9)(14) Verify that the maximum concentration for any time of total suspended solids (TSS) does not exceed 50 mg/L. (2)(9)(14) (NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the limitations listed here.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-31. Installations that have steam electric power generating point sources are subject to certain best available technology (BAT) point source effluent limitations (40 CFR 423.13(a), 423.13 (d), 423.13(e), and 423.13 (h)).	Determine whether the installation has steam electric power generating point sources. (2)(9)(14) Verify that there is no discharge of PCB compounds. (2)(9)(14) Verify that the quantity of pollutants discharged in cooling tower blow down do not exceed the quantity determined by multiplying the flow of cooling tower blow down times the concentrations listed in Table 3 of Appendix 2-1. (2)(9)(14) Verify that neither free available chlorine nor total residual chlorine is discharged from any unit for more than 2 h in any 1 day and not more than one unit at a time in any plant discharges these compounds, unless the utility has a permit to do so from the appropriate authority. (2)(9)(14) Verify that the quantity of pollutants discharged in chemical metal cleaning wastes does not exceed the quantity determined by multiplying the flow of chemical metal cleaning wastes times the concentration lists in Table 4 of Appendix 2-1. (2)(9)(14) (NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the effluent limitations listed here.)
...	...
2-32. Installations that have steam electric power generator facilities rated at a capacity of 25 or more megawatts (MW) are subject to certain point source effluent limitations (40 CFR 423.13 (b)).	Determine whether the installation has steam electric power generators rated at a capacity of 25 or more MW. (2)(9)(14) Verify that the quantity of total residual chlorine discharged in once through cooling water from each discharge point does not exceed the quantity determined by multiplying the flow of once through cooling water from each discharge point times a maximum concentration (mg/L) of 0.20. (2)(9)(14) Verify that total residual chlorine is not discharged from any single generating unit for more than 2 h per day, unless permits to do so have been obtained from the appropriate authority. (2)(9)(14)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-33. Installations that have steam electric power generator facilities rated at a capacity of 25 or fewer MW are subject to certain point source effluent limitations (40 CFR 423.13(c)).	Determine whether the installation has steam electric power generators rated at a capacity of 25 or fewer MW. (2)(9)(14) Verify that the quantity of free available chlorine discharged in once through cooling water does not exceed the quantity determined by multiplying the flow of once through cooling water sources times the concentration listed: (2)(9)(14) - Maximum concentration (mg/L) = 0.5 - Average concentration (mg/L) = 0.2. Verify that neither free available chlorine nor total residual chlorine is discharged from any unit for more than 2 h in any 1 day and not more than one unit at a time in any plant discharges these compounds, unless the utility has a permit to do so from the appropriate authority. (2)(9)(14)
...	...
New Sources	
2-34. Installations that have new steam electric power generator point sources are subject to New Source Performance Standards (NSPS) (40 CFR 423.15(a) through 423.15(d), 423.15(f), 423.15(j), and 423.15(n)).	Determine whether the installation has any new steam electric power generator point sources. (2)(9)(14) Verify that the quantity of pollutants discharged from low volume waste sources and bottom ash transport water do not exceed the quantity determined by multiplying the flow of these sources times the concentration listed in Table 1 of Appendix 2-1. (2)(9)(14) Verify that the quantity of pollutant discharged in chemical metal cleaning wastes does not exceed the quantity determined by multiplying the flow of chemical metal cleaning wastes times the concentration listed in Table 5 in Appendix 2-1. (2)(9)(14) Verify that there is no discharge of wastewater pollutants from fly ash transport water. (2)(9)(14) Verify that the quantity of free available chlorine discharged in cooling tower blow down does not exceed the quantity determined by multiplying the flow of cooling tower blow down times the concentration listed below: (2)(9)(14) - Maximum concentration (mg/L) = 0.5 - Average concentration (mg/L) = 0.2. Verify that the quantity of pollutants discharged in cooling tower blow down does not exceed the quantity determined by multiplying the flow of cooling tower blow down times the concentration listed in Table 3 of Appendix 2-1. (2)(9)(14)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-34. (continued)	(NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the limitations listed here.) Verify that the pH of all discharges, except once through cooling water, is within the range of 6.0 to 9.0. (2)(9)(14) Verify that there is no discharge of PCBs. (2)(9)(14)
...	...
2-35. Installations that introduce pollutants from new sources into a publicly owned treatment works are subject to certain pretreatment standards (40 CFR 423.17).	Determine whether the installation introduces pollutants from new sources into a publicly owned treatment works. (2)(9)(14) Verify that there is no discharge of PCB compounds from new sources into publicly owned treatment works. (2)(9)(14) Verify that discharge of copper (total) in chemical metal cleaning wastes from new sources into publicly owned treatment works does not exceed the concentration listed: (2)(9)(14) - Maximum for 1 day (mg/L) = 1.0. Verify that pollutants discharge in cooling tower blow down from new sources does not exceed the concentration listed in Table 7 of Appendix 2-1. (2)(9)(14) Verify that there is no discharge of wastewater pollutants from fly ash transport water from new sources into publicly owned treatment works. (2)(9)(14)
...	...
2-36. Installations that have new steam electric power generator facilities having a total rated electric generating capacity of 25 or more MW are subject to certain point source effluent limitations (40 CFR 423.15(h)).	Determine whether the installation has facilities having a total rated electric generating capacity of 25 or more MW. (2)(9)(14) Verify that the quantity of total residual chlorine discharged in once through cooling water from each discharge point does not exceed the quantity determined by multiplying the flow of once through cooling water from each discharge point times the concentration listed: (2)(9)(14) - Maximum concentration (mg/L) = 0.20. Verify that total residual chlorine is not discharged from any single generating unit for more than 2 h per day, unless permitted to do so by the appropriate authority. (2)(9)(14) (NOTE: Simultaneous multi-unit chlorination is permitted.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-37. Installations that have new steam electric power generator facilities having a total rated electric generating capacity of 25 or fewer MW are subject to certain point source effluent limitations (40 CFR 423.15(i)).	Determine whether the installation has steam electric power generator facilities having a total rated electric generating capacity of 25 or fewer MW. (2)(9)(14) Verify that the quantity of free available chlorine discharge in once through cooling water does not exceed the quantity determined by multiplying the flow of once through cooling water sources times the concentration listed: (2)(9)(14) - Maximum concentration (mg/L) = 0.5 - Average concentration (mg/L) = 0.2. Verify that neither free available chlorine nor total residual chlorine is discharged at any one time, unless the utility has been permitted to do so by the appropriate authority. (2)(9)(14)
...	...
2-38. Installations discharging coal pile runoff are subject to certain point source effluent limitations (40 CFR 423.15(k) and 423.15(n)).	Determine whether the installation has coal pile storage areas. (2)(9)(14) Verify that the quantity of TSS discharged in coal pile runoff do not exceed the limitations listed: (2)(9)(14) - NSPS effluent limitations for any time = not to exceed 50 mg/L. (NOTE: Any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff resulting from a 10 year (yr), 24 h rainfall event is not subject to this limitation.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Existing Sources	
2-39. Installations that introduce pollutants from existing sources into a POTWs/FOTWs are subject to certain pretreatment standards (40 CFR 423.16).	Determine whether the installation introduced pollutants from existing sources into a POTW/FOTW. (2)(9)(14) Verify that there is no discharge of polychlorinated biphenyl (PCB) compounds from existing sources into POTWs/FOTWs. (2)(9)(14) Verify that copper (total) discharged in chemical metal cleaning wastes from existing sources into POTWs/FOTWs does not exceed the concentration listed: (2)(9)(14) - Maximum for 1 day (mg/L) = 1.0. Verify that the pollutants discharged in cooling tower blow down from existing sources into POTWs/FOTWs does not exceed the concentration listed in Table 6 of Appendix 2-1. (2)(9)(14)
...	...
Electroplating Point Sources	
2-40. Installations that have electroplating operations are subject to certain point source effluent limitations (40 CFR 413.01(a) through 413.01 (c), and 413.04).	Determine whether the installation has electroplating operations. (2)(9)(14) (NOTE: See Appendix 2-2 for similar but excepted operations.) Verify that pretreated pollutants standards are measured by determining the relevant subcategory from the corresponding daily and 4 day average values listed in Table 1 in Appendix 2-2. (2)(9)(14) Verify that where electroplating process wastewaters are combined with regulated wastewaters that have 30 days average standards, the corresponding 30 day average standard for electroplating is used. (2)(9)(14)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-41. Installations that have existing sources that introduce pollutants into a POTW/FOTW that discharges less than 38,000 L (10,000 gallons (gal)) per calendar day of process wastewaters resulting from the electroplating of common metals, are subject to certain pretreatment standards (40 CFR 413.10, 413.14(a), 413.14 (b), and 413.14(f)).	Determine whether the installation has existing sources that introduce pollutants into a POTW/FOTW that discharges less than 38,000 L (10,000 gal) per calendar day of process wastewaters resulting from the electroplating of common metals. (2)(9)(14) Verify that the source's wastewater meets the limitations listed in Table 2 of Appendix 2-2. (2)(9)(14) Verify that the installation does not augment the use of process wastewater or otherwise dilute it as a partial or total substitute for adequate treatment to achieve compliance with the limitations. (2)(9)(14) Verify that the source's wastewater total toxic organics (TTO) is limited to 4.57 mg/L maximum for any 1 day. (2)(9)(14) (NOTE: Electroplating of common metals refers to electroplating with copper, nickel, chromium, zinc, tin, lead, cadmium, iron, aluminum, or any combination of these.)
...	...
2-42. Installations that have existing sources that introduce pollutants into a POTW/FOTW that discharges 38,000 L (10,000 gal) or more per calendar day of process wastewaters resulting from the electroplating of common metals, are subject to certain pretreatment (40 CFR 413.10, 413.14(a), 413.14(c) through 413.14 (e), and 413.14(g)).	Determine whether the installation has existing sources that introduce pollutants into a POTW/FOTW that discharges 38,000 L (10,000 gal) or more per calendar day of process wastewaters resulting from the electroplating of common metals. (2)(9)(14) Verify that the sources of wastewater meet the limitations listed in Table 3 of Appendix 2-2. (2)(9)(14) (NOTE: Mass-based standards are equivalent to and may be applied in place of those listed in Table 3 upon prior agreement between the installation and the POTW/FOTW receiving the wastes.) Verify that the installation does not augment the use of process wastewater or otherwise dilute it as a partial or total substitute for adequate treatment to achieve compliance with the limitations. (2)(9)(14) Verify that if there is an absence of chelating agents in the pretreatment process, that after reduction of hexavalent chromium wastes, and after neutralization using calcium oxide (or hydroxide), the limitations listed in Table 4 of Appendix 2-2 are met. (2)(9)(14) Verify that the source wastewater TTO is limited to 2.13 mg/L maximum for any 1 day. (2)(9)(14) (NOTE: Electroplating of common metals refers to electroplating with copper, nickel, chromium, zinc, tin, lead, cadmium, iron, aluminum, or any combination of these.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DFH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-43. Installations that have existing sources that introduce pollutants into a POTW/FOTW that discharges less than 38,000 L (10,000 gal) per calendar day of process wastewaters resulting from chromating, phosphating or immersion plating on ferrous or nonferrous materials, are subject to certain pretreatment standards (40 CFR 413.50, 413.54(a), 413.54(b), and 413.54(f)).	Determine whether the installation has existing sources that introduce pollutants into a POTW/FOTW that discharges less than 38,000 L (10,000 gal) per calendar day of process wastewaters resulting from chromating, phosphating, or immersion plating on ferrous or nonferrous materials. (2)(9)(14) Verify that the source's wastewater meets the limitations listed in Table 2 of Appendix 2-2. (2)(9)(14) Verify that the installation does not augment the use of process wastewater or otherwise dilute it as a partial or total substitute for adequate treatment to achieve compliance with the limitations. (2)(9)(14) Verify that the source's wastewater TTO is limited to 4.57 mg/L maximum. (2)(9)(14)
...	...
2-44. Installations that have existing sources that introduce pollutants into a POTW/FOTW that discharges 38,000 L (10,000 gal) or more per calendar day of in process wastewaters resulting from chromating, phosphating or immersion plating on ferrous or nonferrous materials, are subject to certain pretreatment standards (40 CFR 413.50, 413.54(a), 413.54(c) through 413.54(e), and 413.54(g)).	Determine whether the installation has existing sources that introduce pollutants into a POTW/FOTW that discharges 38,000 L (10,000 gal) or more per calendar day of process wastewaters resulting from chromating, phosphating or immersion plating into POTWs/FOTWs. (2)(9)(14) Verify that the source's wastewater meets the limitations listed in Table 3 of Appendix 2-2. (2)(9)(14) (NOTE: Mass-based standards are equivalent to and may be applied in place of those listed in Table 3 upon prior agreement between the installation and the POTW/FOTW receiving the wastes.) Verify that the installation does not augment the use of process wastewater or otherwise dilute it as a partial or total substitute for adequate treatment to achieve compliance with the limitations. (2)(9)(14) Verify that if there is an absence of chelating agents in the pretreatment process, that after reduction of hexavalent chromium wastes, and after neutralization using calcium oxide (or hydroxide) the limitations listed in Table 4 of Appendix 2-2 are met. (2)(9)(14) Verify that the source's wastewater TTO is limited to 2.13 mg/L maximum for any 1 day. (2)(9)(14)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-45. Installations that have existing sources that introduce pollutants into a POTW/FOTW that discharges less than 38,000 L (10,000 gal) per calendar day of pollutants in process wastewaters resulting from electroless plating, are subject to certain pretreatment standards (40 CFR 413.70, 413.74(a), 413.74(b), and 413.74(f)).	Determine whether the installation has existing sources that introduce pollutants into a POTW/FOTW that discharges less than 38,000 L (10,000 gal) per calendar day of pollutants in process wastewaters resulting from the electroless plating. (2)(9)(14) Verify that the source's wastewater meets the limitations listed in Table 2 of Appendix 2-2. (2)(9)(14) Verify that the installation does not augment the use of process wastewater or otherwise dilute it as a partial or total substitute for adequate treatment to achieve compliance with the limitations. (2)(9)(14) Verify that the source's wastewater total toxic organics (TTO) is limited to 4.57 mg/L maximum. (2)(9)(14) (NOTE: Electroless plating refers to electroless plating of a metallic layer on a metallic or nonmetallic substrate.)
...	...
2-46. Installations that have existing sources that introduce pollutants into a POTW/FOTW that discharges 38,000 L (10,000 gal) or more per calendar day of pollutants in process wastewaters resulting from electroless plating, are subject to certain pretreatment standards (40 CFR 413.70, 413.74(a), 413.74(c) through 413.74 (e), and 413.74(g)).	Determine whether the installation has existing sources that introduce pollutants into a POTW/FOTW that discharges 38,000 L (10,000 gal) or more per calendar day of pollutants in process wastewaters resulting from electroless plating. (2)(9)(14) Verify that the source's wastewater meets the limitations listed in Table 3 of Appendix 2-2. (2)(9)(14) (NOTE: Mass-based standards are equivalent to and may be applied in place of those listed in Table 3 upon prior agreement between the installation and the POTW/FOTW receiving the wastes.) Verify that the installation does not augment the use of process wastewater or otherwise dilute it as a partial or total substitute for adequate treatment to achieve compliance with the limitations. (2)(9)(14) Verify that if there is an absence of chelating agents in the pretreatment process, that after reduction of hexavalent chromium wastes, and after neutralization using calcium oxide (or hydroxide) the limitations listed in Table 4 of Appendix 2-2 are met. (2)(9)(14) Verify that the source's wastewater TTO is limited to 2.13 mg/L maximum for any 1 day. (2)(9)(14) (NOTE: Electroless plating refers to electroless plating of a metallic layer on a metallic or nonmetallic substrate.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Metal Finishing Point Sources	
2-47. Installations that have shops performing electroplating, electroless plating, anodizing, coating (chromating, phosphating, and coloring), chemical etching and milling, and printed circuit board manufacture are subject to certain point source effluent limitation (40 CFR 433.10 through 433.12(c)).	Determine whether the installation has shops performing electroplating, electroless plating, anodizing, coating (chromating, phosphating; and coloring), chemical etching and milling, and printed circuit board manufacture. (2)(9)(14) (NOTE: If any of the listed processes are performed, then refer to Appendix 2-3 for an additional listing of process operations subject to limitations under this regulation.) Verify that self-monitoring of cyanide is conducted after cyanide treatment and before dilution with other streams. (2)(9)(14)
...	...
2-48. Installations that have shops performing electroplating, electroless plating, anodizing, coating (chromating, phosphating; and coloring), chemical etching and milling, and printed circuit board manufacture are subject to certain Best Practical Technology (BPT) point source effluent limitation (40 CFR 433.13).	Verify that the pollutants discharged from metal finishing point sources meets the limitations listed in Table 1 of Appendix 2-3. (2)(9)(14) Verify that oil and grease does not exceed the following: (2)(9)(14) - maximum for any 1 day of 52 mg/L - monthly average of 26 mg/L Verify that TSS does not exceed the following: (2)(9)(14) - maximum for any 1 day of 60 mg/L - monthly average of 31 mg/L. Verify that the installation does not augment the use of process wastewater or otherwise dilute the wastewater as a partial or total substitute for adequate treatment to achieve compliance. (2)(9)
...	...
2-49. Installations that have shops performing electroplating, electroless plating, anodizing, coating (chromating, phosphating; and coloring), chemical etching and milling, and printed circuit board manufacture are subject to certain BAT point source effluent limitation (40 CFR 433.14).	Determine whether the installation has shops performing electroplating, electroless plating, anodizing, coating (chromating, phosphating; and coloring), chemical etching and milling, and printed circuit board manufacture. (2)(9)(14) Verify that the pollutants in discharge from metal finishing point sources meet the limitations listed in Table 1 of Appendix 2-3. (2)(9)(14) (NOTE: Alternately, if the installation has facilities with cyanide treatment and if permitted by the appropriate authority, the following amenable limits may apply for cyanide: Maximum for any 1 day = 0.86 (mg/L); Maximum monthly average = 0.32 (mg/L).) Verify that the installation does not augment the use of metal finishing process wastewater or otherwise dilute it as a partial or total substitute for adequate treatment to achieve compliance with the limitations (2)(9)(14)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Existing Metal Finishing Point Sources	
2-50. Installations that introduce pollutants from existing metal finishing point sources into POTWs/FOTWs are subject to certain pretreatment standards (40 CFR 433.15).	Determine if the installation introduces pollutants from existing metal finishing point sources into POTWs/FOTWs. (2)(9)(14) Verify that pollutants introduced from existing metal finishing point sources (except from job shops and independent printed circuit board manufacturers) into POTWs/FOTWs meet the standards listed in Table 1 of Appendix 2-3. (2)(9)(14) (NOTE: Alternately, if the installation has facilities with cyanide treatment and if permitted by the appropriate authority, the following amenable limits may apply for cyanide: Maximum for any 1 day = 0.86 (mg/L); Maximum monthly average = 0.32 (mg/L).) Verify that the installation does not augment the use of metal finishing process wastewater or otherwise dilute it as a partial or total substitute for adequate treatment to achieve compliance with the limitations. (2)(9)(14) Verify that any existing source subject to the criteria listed here meets the daily maximum pretreatment standard for TTO of 4.57 mg/L. (2)(9)(14)
...	...
New Metal Finishing Point Sources	
2-51. Installations that introduce pollutants from new metal finishing point sources into POTWs/FOTWs are subject to certain performance standards (40 CFR 433.16).	Determine if the installation introduces pollutants from new metal finishing point sources into POTWs/FOTWs. (2)(9)(14) Verify that pollutants introduced from new metal finishing point sources into POTWs/FOTWs meet the standards listed in Table 2 of Appendix 2-3. (2)(9)(14) (NOTE: Alternately, if the installation has facilities with cyanide treatment and if permitted by the appropriate authority, the following amenable limits may apply for cyanide: Maximum for any 1 day = 0.86 (mg/l); Maximum monthly average = 0.32 (mg/l).) Verify that the installation does not augment the use of metal finishing process wastewater or otherwise dilute it as a partial or total substitute for adequate treatment to achieve compliance with the limitations. (2)(9)(14)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-52. Installations that introduce pollutants from new metal finishing point sources into POTWs/FOTWs are subject to certain pretreatment standards (40 CFR 433.17).	Determine if the installation introduces pretreated pollutants from new metal finishing point sources into POTWs/FOTWs. (2)(9)(14) Verify that the pretreated pollutants introduced from new metal finishing point sources into POTWs/FOTWs meet the standards listed in Table 3 of Appendix 2-3. (2)(9)(14) (NOTE: Alternately, if the installation has facilities with cyanide treatment and if permitted by the appropriate authority, the following amenable limits may apply for cyanide: Maximum for any 1 day = 0.86 (mg/L); Maximum monthly average = 0.32 (mg/L).) Verify that the installation does not augment the use of metal finishing process wastewater or otherwise dilute it as a partial or total substitute for adequate treatment to achieve compliance with the limitations. (2)(9)(14)
...	...
Photo labs	
2-53. Installations that have point source discharges resulting from the development or printing of paper prints, slides, negatives, enlargements, movie film, and other sensitized materials are subject to certain limitations (40 CFR 459.10 and 459.12).	Determine whether the installation has point source discharges resulting from the development or printing of paper prints, slides, negatives, enlargements, movie film, and other sensitized materials. (2)(9)(14) Verify that the photographic processing point source effluent is limited according to the specifications in Appendix 2-4. (2)(9)(14) (NOTE: Facilities processing 150 meters squared (m^2) (16,000 sq ft) per day or less are not covered.)
...	...
Hospitals	
2-54. Installations that have hospital point source effluents are subject to certain discharge standards (40 CFR 460.10).	Determine whether the installation has a hospital point source. (2)(9)(14) Verify that the hospital point source effluent is limited in the quality or quantity of pollutants discharged as described in Appendix 2-4. (2)(9)(14) (NOTE: The standards apply to discharge after application of BAT.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PETROLEUM PRODUCTS	
2-55. *Installations* which store, transport, or dispense petroleum products are required to prepare a Spill Prevention Control and Countermeasure (SPCC) Plan (40 CFR 112.3).	Verify that the installation has a SPCC. (2)(6)(9)(13) (NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if: - the installation, equipment, or operation is not subject to the jurisdiction of the USEPA as follows: - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the Department of Transportation (DOT) - both of the following criteria are met: - the underground buried storage capacity of the installation is 159,000 L (42,000 gal) or less of oil - the storage capacity which is not buried at the installation is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).) (NOTE: This apples to onshore and offshore facilities, including onshore and offshore mobile or portable facilities, such as onshore drilling or work-over rigs, barge mounted offshore drilling or work-over rigs, and portable fueling facilities.)
...	...
2-56. The DOD requires SPCC plans to be developed for a broader range of activities than the *Code of Federal Regulations* (DOD Directive 5030.41, para D; AR 200-1, para 8-4a).	Verify that a SPCC plan has been developed for each installation or activity, including government-owned contractor-operated (GOCO) facilities, which has discharged or could reasonable discharge oil in harmful quantities into or upon the waters of the United States or its shorelines. (2)(6)(9)(13) Verify that a SPCC Plan has been developed if the installation: (2)(6)(9)(13) - has the potential to spill oil or hazardous substance in a quantity that would be harmful to human health or welfare or to the environment - meets at least one of the following criteria: - aggregate aboveground oil storage on the installation is greater than 5003 L (1320 gal) - any single aboveground oil storage tank on the installation exceed 2501 L (660 gal) - total underground oil storage on the installation is greater than 159,180 L (42,000 gal) - one or more hazardous substance is stored in quantities that would be harmful to human health or welfare, or to the environment if a spill were to occur.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

2-57. The SPCC Plan is required to contain specific information (40 CFR 112.7).	Determine if the SPCC plan has been prepared and reviewed for the following: (2)
	
	- command approval
	- spill reporting procedures
	- prespill planning for major potential spill areas
	- spill containment and cleanup equipment/facilities
	- oil spill contingency plan
	- training procedures
	- spill response exercises
	- plan review and update procedures.
	
	Verify that the SPCC Plan contains: (2)
	
	- general information about the installation including:
	  - name
	  - type of function
	  - location of installation drainage patterns
	  - location maps
	- name and title of designated coordinator
	- inventory of all storage, handling, and transfer facilities that could produce a significant spill. For each listing include:
	  - prediction of direction and rate of flow
	  - total quality of oil that could be spilled as a result of major failure.

...	...

2-58. Each SPCC plan must be reviewed at least once every 3 yr (40 CFR 112.5(b)).	Verify that the SPCC plan has been reviewed at least once every 3 yr. (2)
	
	(NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if:
	- the installation, equipment, or operation is not subject to the jurisdiction of the USEPA as follows:
	  - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines
	  - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT
	- both of the following criteria are met:
	  - the underground buried storage capacity of the installation is 159,180 L (42,000 gal) or less of oil
	  - the storage capacity which is not buried at the installation is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-59. Army installations are required to review the SPCC Plan every 2 yr or when there is a change in facility design, construction, operation, or maintenance that affects the potential for spills of oils or hazardous substances (AR 200-1, para 8-4c(4)).	Verify that the SPCC Plan is reviewed every 2 yr. (2)
...	...
2-60. The SPCC must be reviewed and/or amended under specific circumstances (40 CFR 112.4 and 112.5(a)).	Verify that the plan was amended if there was a material change in facility design, construction, operations, or maintenance that alters the potential for an oil spill. (2) Verify that the plan was sent to the USEPA for review if: (2) - there was a discharge of more than 3790 L (1000 gal) into navigable waters in a single spill event - oil was discharged in harmful quantities into navigable waters in two reportable spill events within any 12-mo period. Verify that the plan was amended and recertified by a professional engineer. (2) (NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if: - the installation, equipment, or operation is not subject to the jurisdiction of the USEPA as follows: - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT - both of the following criteria are met: - the underground buried storage capacity of the installation is 159,180 L (42,000 gal) or less of oil - the storage capacity which is not buried at the installation is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-61. Each SPCC Plan and any amendments must be certified by a professional engineer and the plan and each amendment must be prepared according to sound engineering practices (40 CFR 112.3(d) and 112.5(c)).	Verify that the SPCC Plan has been certified. (2) (NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if: - the installation, equipment, or operation is not subject to the jurisdiction of the USEPA as follows: - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT - both of the following criteria are met: - the underground buried storage capacity of the installation is 159,180 L (42,000 gal) or less of oil - the storage capacity which is not buried at the installation is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).)
...	...
2-62. A copy of the SPCC plan is required to be available at sites that are normally have personnel onsite at least 8 h per day, and where there is a potential for a discharge (40 CFR 112.3(e)).	Verify that a copy of the SPCC is available at facilities that have personnel onsite at least 8 h a day. (2)(4)(6)(9)(13) (NOTE: If personnel are not onsite for 8 h a day the plan may be kept at the nearest field office and the plan should be made available to the Regional Administrator.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-63. The installation must have a spill contingency plan (ISCP) that addresses specific issues (AR 200-1, para 8-5a through 8-5c).	Verify that the ISCP contains the following: (2)(4) - provisions specifying the responsibilities, duties, procedures and resources to be used to contain and cleanup spills - a description of immediate response actions that should be taken when a spill is discovered - identification of resources for possible use - the name, responsibilities, and duties of the IOSC - the specifications, composition and training of the IRT - procedures for IRT alert and mobilization - a current list of persons and alternates who are on call to receive notice of an oil or hazardous substance spill - surveillance procedures for early detection of discharges - quantities and locations of personnel equipment, vehicles, supplies and material resources - additional resources available for spill cleanup - procedures and techniques used to identify, contain, disperse, reclaim, and remove oil and hazardous substances used in bulk quantity on the installation - procedures for reporting by telephone and in writing - a description of safety precautions for known hazardous substances on the installation - a public affairs appendix that describes the procedures, responsibilities, and methods for releasing information in the event of a spill. Verify that copies of the ISCP are kept on file at the DEH, the emergency operations center, Preventive Medicine, the safety office, the security office, the Public Affairs Office (PAO), and each site that stores, handles, or transfers oil or hazardous substances for which there is a reasonable possibility of a significant spill. (2)(4)
...	...
2-64. The ISCP is required to be updated every 3 yr and approved by a professional engineer (AR 200-1, para 8-5d(1)).	Verify that the ISCP portion of any spill response documentation is updated every 3 yr. (2)(6) Verify that the ISCP has been approved by a professional engineer. (2)(6)
...	...
2-65. An IOSC and an IRT must be appointed by the IC (AR 200-1, para 1-25(i)(13)).	Verify that IOSC and IRT have been appointed. (2)(6) Verify that they are trained and knowledgeable of the contingency plan. (2)(6)
...	...
2-66. Installations should have a process for the management of reclaimed, recoverable, and waste liquid petroleum products (GMP).	Verify that the installation has identified sources of reclaimed, recovered, and waste liquid petroleum products and are managing these products appropriately. (2)(6)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-67. All installation personnel involved with the management and handling of oil must take part in periodic training in spill prevention and response (40 CFR 112.7e(10)).	Verify that proper training has been conducted by reviewing training records and interviewing the staff. (2)(6)(9)(13) Verify that training addresses the procedures to follow when a spill occurs, such as: (2)(6) - notification - containment - safety practices. (NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if: - the installation, equipment, or operation is not subject to the jurisdiction of the USEPA as follows: - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT - both of the following criteria are met: - the underground buried storage capacity of the facility is 159,180 L (42,000 gal) or less of oil - the storage capacity which is not buried at the installation is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).)
...	...
2-68. Yearly training is required to test the effectiveness of ISCP personnel and equipment (AR 200-1, para 5-4d(2)).	Verify that yearly training is being done. (2)(6)(9)(13)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	***REVIEWER CHECKS:***
DISCHARGES/SPILLS	
2-69. Discharges of oil into or upon the navigable waters of the United States or adjoining shorelines or intro or upon the waters of the contiguous zone or into areas that may affect natural resources belonging to, or under the exclusive management authority of the United States must be reported (40 CFR 110.2 through 110.10).	Determine if the facility has had any discharges of oils. (1)(2)(5)(7)(16)(17)(18) (NOTE: Discharges of oil are defined as those which violate applicable water quality standards or cause a film or a sheen upon or discoloration of the surface of the water or adjoining shoreline or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shores.) Verify that the National Response Center (NRC) was notified as soon as possible after discovery of a discharge as defined in the above NOTE. (1)(2)(5)(7)(16)(17)(18) (NOTE: If direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or USEPA predesignated OSC.) (NOTE: Discharges of oil from a properly functioning vessel engine are not considered harmful but, discharges from vessel's bilge are not allowed.) (NOTE: See definition "navigable waters.")
...	...
2-70. Any spill of petroleum products must be reported to the IOSC immediately (AR 200-1, para 8-3(a)).	Verify that spills of petroleum products have been reported to the IOSC. (1)(2)(5)(7)(16)(17)(18)
...	...
2-71. Installations are not allowed to add dispersants or emulsifiers to oil to be discharged (40 CFR 110.8).	Verify that facilities do not add dispersants or emulsifiers to discharges. (1)(2)(5)(7)(16)(17)(18)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PETROLEUM PRODUCTS - STORAGE/ CONTAINMENT **2-72.** Appropriate containment and/or diversionary structures, and cleanup equipment to prevent discharged petroleum products from reaching navigable water course are required to be readily available on the installation (40 CFR 112.7(c)).	Determine if at onshore facilities one of the following preventive systems or an equivalent is used: (1)(2)(5)(7)(9)(16)(17)(18) - absorbent material - sand bags/temporary curbing devices - dikes, berms, or retaining walls sufficiently impervious contain spilled oil - culverting gutters or other drainage system - weirs, booms, or other barriers - spill diversion ponds - retention ponds. Verify that at offshore facilities one of the following, or any equivalent, is available: (1)(2)(5)(7)(9)(16)(17)(18) - curbing, drip pans - sumps and collection systems. (NOTE: *See definition of "navigable water."*) (NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if: - the facility, equipment, or operation is not subject to the jurisdiction of the USEPA as follows: - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT - both of the following criteria are met: - the underground buried storage capacity of the facility is 159,180 L (42,000 gal) or less of oil - the storage capacity which is not buried at the facility is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

2-73. All bulk storage tanks (over 2501 L (660 gal)) must be provided with a secondary means of containment for the entire contents of the largest tank plus sufficient free board to allow for precipitation (40 CFR 112.7(e)(2)(ii)).
 	
...
	Verify that adequate containment is provided for bulk storage tanks (over 2501 L (660 gal)) by viewing tanks. (1)(2)(5)(7)(13)(16)(17)(18)
	
	Verify that diked areas are impervious enough to contain spilled oil. (1)(2)(5)(7)(13)(16)(17)(18)
	
	(NOTE: Dikes, containment curbs, and pits are commonly employed for this purpose, but they may not always be appropriate. An alternate system could consist of a complete drainage trench enclosure arranged so that a spill could terminate and be safely confined in an in-plant catchment basin or holding pond.)
	
	(NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if:
	- the facility, equipment, or operation is not subject to the jurisdiction of the USEPA as follows:
	  - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines
	  - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT
	- both of the following criteria are met:
	  - the underground buried storage capacity of the facility is 159,180 L (42,000 gal) or less of oil
	  - the storage capacity which is not buried at the facility is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).)
	
	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

2-74. Drainage of rain water from diked areas must be controlled by a valve that is closed when not in active use (other positive means may be used) (40 CFR 112.7(e)(1) and 112.7 (e)(2)).	Verify that valves are closed when not in use by inspecting the drainage valves at each diked area. (1)(2)(5)(7)(16)(17)(18)
	
	Verify that drainage valves are attended when open by interviewing personnel. (1)(2)(5)(7)(16)(17)(18)
	
	Verify that water drained from diked areas does not cause a harmful discharge as defined in 40 CFR 110.6. (1)(2)(5)(7)(16)(17)(18)
	
	Verify that personnel draining the diked area know how to identify a discharge. (1)(2)(5)(7)(16)(17)(18)
	
	Determine if any drainage water was inspected to determine if it would represent a harmful discharge. (1)(2)(5)(7)(16)(17)(18)
	
	(NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if:
	- the facility, equipment, or operation is not subject to the jurisdiction of the USEPA as follows:
	  - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines
	  - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT
	- both of the following criteria are met:
	  - the underground buried storage capacity of the facility is 159,180 L (42,000 gal) or less of oil
	  - the storage capacity which is not buried at the facility is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-75. Drainage water that is determined to contain petroleum products in harmful quantities must be treated before discharge to meet applicable water quality standards (40 CFR 112.7(e)(2)).	Determine if discharges containing harmful quantities of petroleum products were properly treated, recovered, or disposed of by interviewing personnel. (9)(13)(16)(17)(18) Verify that records are kept of treatment and disposal methods. (9)(13)(16)(17)(18) (NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if: - the facility, equipment, or operation is not subject to the jurisdiction of the USEPA as follows: - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT - both of the following criteria are met: - the underground buried storage capacity of the facility is 159,180 L (42,000 gal) or less of oil - the storage capacity which is not buried at the facility is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).)
...	...
2-76. A product recovery system should be installed at the tank water drain-off valve for tanks storing aviation fuels (GMP).	Verify that product recovery systems are in place and operating correctly on aviation fuel tanks. (9)(13)(16)(17)(18) (NOTE: Federal regulations do not require product recovery system for ground use petroleum products; however, state and local regulations may require such systems.)
...	...
2-77. The DEH Utilities Maintenance and Operations and Department of Logistics (DOL) Fuel Maintenance should have a Memorandum of Agreement (MOA) pertaining to draining of floating roof tanks and interior dike basins (GMP).	Determine if a MOA has been prepared and signed or coordinated through the DEH Director and the Environmental Coordinator (EC). (1)(2)(5)(7)(9)(16)(17)(18)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-78. Wastewater and fuel sludges resulting from periodic tank cleaning should not be discharged to surface waters, sewers, or to the ground (GMP).	Determine if residues from tank cleaning operations are properly disposed of, including testing for hazardous characteristics as needed. (1)(2)(5)(7)(9)(13)(16)(17)(18)
...	...
2-79. Aboveground storage tanks must undergo periodic integrity testing (40 CFR 112.7 (e)(2)(vi)).	Verify that periodic leak tests have been conducted and check the results (a decrease in converted fuel volume equal to or greater than 1/4 inch (in.) constitutes a suspected leak). (1)(2)(5)(7)(9)(16)(17)(18) Verify that DEH Director, EC, and Safety Officer have been notified of all confirmed leaks by interviewing them. (1)(2)(5)(7)(9)(16)(17)(18) Verify that leaking tanks have been repaired or replaced. (1)(2)(5)(7)(9)(16)(17)(18) (NOTE: Periodic testing should take tank design into account and involve such techniques as hydrostatic testing, visual inspection, or a system of nondestructive shell thickness testing.) (NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if: - the facility, equipment, or operation is not subject to the jurisdiction of the USEPA as follows: - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT - both of the following criteria are met: - the underground buried storage capacity of the facility is 159,180 L (42,000 gal) or less of oil - the storage capacity which is not buried at the facility is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-80. Buried metallic storage tanks installed after 1973 must be protected from corrosion by coatings, cathodic protection or other effective methods (40 CFR 112.7 (e)(2)(iv)).	Verify that new underground storage tanks are appropriately protected from corrosion by inspecting records and interviewing personnel. (2)(5)(6)(7)(9)(16)(17)(18) Verify that the tanks are pressure tested regularly. (2)(5)(6)(7)(9)(16)(17)(18) (NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if: - the facility, equipment, or operation is not subject to the jurisdiction of the USEPA as follows: - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT - both of the following criteria are met: - the underground buried storage capacity of the facility is 159,180 L (42,000 gal) or less of oil - the storage capacity which is not buried at the facility is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).) (NOTE: For additional requirements on USTs see Section 6, *Resource Conservation and Recovery Act, Subtitle I (RCRA-I).*)
...	...
2-81. Periodic inspection of MOGAS, diesel, kerosene, and aviation fuel test cell storage tanks should be done (GMP).	Determine if inspections have been conducted as required. (2) Verify that leaking or deteriorated tanks have been repaired or replaced. (1)(2) Verify that leaks were reported to the DEH Director, EC, and Safety Officer. (1)(2)
...	...
PIPELINES	
2-82. Buried fuel piping at transfer operations, pumping and in-plant processing operations must have a protective wrapping and coating and is required to be cathodically protected if soil conditions warrant (40 CFR 112.7(e)(3)(i)).	Verify through interviews and records review that buried fuel piping is properly protected from corrosion. (2)(5)(6)(9) Verify that the voltage is greater than -0.85, but not more than -3.0 volts (V) (monthly) for impressed current system. (2)(6)(9) Verify that the voltage is greater than -0.85, but not more than -3.0 V (biannually) for sacrificial anode system. (2)(6) Verify that leak detection and failure are reported. (2)(6)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-83. All Army operated aboveground and belowground fuel piping systems at transfer operations, pumping, and in-plant processing operations operated by the Army must be regularly examined and any suspected leaks must be investigated immediately (40 CFR 112.7(e)(3)(iv)).	Verify that regular inspections, including an annual pressure test, records check, and interviews have been conducted. (2) Verify that the aboveground general condition of items, such as flange joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces have been assessed. (6) Verify that confirmed leaks have been reported and leaking pipes repaired or replaced. (1)(2)(6) (NOTE: Installations are exempt from the requirements outlined in 40 CFR 112 if: - the facility, equipment, or operation is not subject to the jurisdiction of the USEPA as follows: - onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines - equipment or operations of vessels or transportation related onshore and offshore facilities which are subject to the authority of the DOT - both of the following criteria are met: - the underground buried storage capacity of the facility is 159,180 L (42,000 gal) or less of oil - the storage capacity which is not buried at the facility is 5003 L (1320 gal) of oil or less and no single container exceeds a capacity of 2501 L (660 gal) (40 CFR 112.1(d)(2).)
...	...
2-84. Army operated off-installation pipelines should be inspected regularly (GMP).	Determine if inspections are performed. (1)(2) Verify that detected leaks and failures have been reported and leaking pipes repaired or replaced. (6)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
LAND APPLICATION OF SLUDGE **General** **2-85.** As of 19 February 1994, representative samples of sewage sludge applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator are required to be collected and analyzed (40 CFR 503.8). ...	(NOTE: Checklist items 2-85 through 2-132 apply only to sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definitions of the term *Excluded Sludge*. A summary of the important compliance dates is found in Appendix 2-5.) Verify that the followings types of installations meet the standards outlined in 40 CFR 503: (1)(2)(9)(14)(16) - the treatment works treats domestic sewage only - the treatment works is designed for domestic sewage treatment but also treats some industrial wastewaters - the treatment works is designed for industrial wastewater treatment and it only treats domestic sewage at any one time during operation then the resulting sewage sludge has to meet 50 CFR 503 - the treatment works generate domestic septage only - the installation further changes the quality or treats (e.g. composting of sewage sludge) the sewage sludge or domestic septage received from a generator of sewage sludge/domestic septage for land application and is therefore a preparer of sewage sludge. (NOTE: If the installation treatment works meets any of the following, the requirements in 40 CFR 503 do not apply: - it treats industrial wastewaters only - it is an industrial wastewater treatment plant that also treats domestic sewage along with the industrial wastewater - it generates a combination of: - domestic septage and commercial septage (i.e., grease from grease traps) - domestic septage and industrial septage - commercial septage and industrial septage. Determine if the facility applies sewage sludge to the land, places it on a surface disposal site, or fires it in a sewage sludge incinerator. (1)(2)(9)(14)(16) Verify that the sludge is analyzed prior to application, placement, or firing for the following: (1)(2)(9)(14)(16) - enteric viruses - fecal coliforms - helminth ova - inorganic pollutants - salmonella bacteria - specific oxygen uptake rate - total, fixed, and volatile solids. ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-86. As of 19 February 1994, installations are required to know when the last time bulk sewage sludge subject to the cumulative loading rates in Appendix 2-6 was last applied to a site before applying more (40 CFR 503.12(e)(2)).	Verify that personnel contacted the permitting authority in the state to determine if bulk sewage sludge which has to meet the standards in Appendix 2-6 has been applied to the site since 20 July 1993. (1)(2)(9)(14)(16) (NOTE: If sludge subject to these standards has not been applied to the site since 20 July 1993, the cumulative amount for each pollutant in Appendix 2-6 may be applied.) Verify that if bulk sewage sludge subject to these standards has been applied since 20 July 1993 and the cumulative amount of each pollutant applied to the site is known, the known cumulative amount is used to determine the additional amount of each pollutant that can be applied. (1)(2)(9)(14)(16) (NOTE: If the cumulative amount is not known, there shall be no further application to the site.) (NOTE: The 20 July 1993 start date may not apply in some states. Instead, some states may require the installation to use historic data.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-87. As of 19 February 1994, bulk sewage sludge or sewage sludge sold or given away in a bag or other container must meet specific standards (40 CFR 503.13(a)(1), 503.13 (a)(4), and 503.14(e)).	Verify that if the installation gives or sells bulk sewage sludge or sewage sludge in a bag or other container, it meets the pollutant concentration limits in Appendix 2-7. (1)(2)(9)(14)(16) Verify that if the installation gives or sells bulk sewage sludge in a bag or other container it meets one of the following: (1)(2)(9)(14)(16) - pollutant concentrations do not exceed Appendix 2-8 - the product of the concentration of each pollutant in the sewage sludge and the annual whole sludge application rate for the sewage sludge does not cause the annual pollutant loading rates in Appendix 2-9 to be exceeded. Verify that a label is affixed to the bag or container or an information sheet provided to the person who receives the sewage sludge. (1)(2)(9)(14)(16) Verify that the label or information sheet states: (1)(2)(9)(14)(16) - the name and address of the person who prepared the sewage sludge - a statement that the application to land is prohibited except in accordance with the instructions on the label or information sheet - the annual whole sludge application rate for the sewage sludge that does not cause any exceedance of the annual pollutant loading rates in Appendix 2-9. (NOTE: When sewage sludge or material derived from sewage sludge is sold or given away in a bag or other container and meets the requirements in Appendix 2-8, Class A pathogen requirements (see definitions), and vector attraction reduction requirements as follows, it is exempt from the labeling requirements: - the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done: - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 °C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved - for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 °C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-87. (continued)	- the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 milligram (mg) of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 ^{0}C - sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40^{0}C and the average temperature is higher than 45 ^{0}C - the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h - the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials - the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials (40 CFR 503.10(e) and 503.10(f)).
...	...
2-88. As of 19 February 1994, the application of bulk sewage sludge is not permitted in specific circumstances (40 CFR 503.14(a) through 503.14 (c)).	Verify that bulk sewage sludge is not applied to the land if it is likely to adversely threaten an endangered species or its designated critical habitat. (1)(2)(9)(14)(16) Verify that bulk sewage sludge is not applied to agricultural land, forest, a public contact site, or reclamation site that is flooded, frozen, or snow covered so that the bulk sewage sludge enters a wetland or other waters of the United States. (1)(2)(9)(14)(16) Verify that bulk sewage sludge is not applied to agricultural land, forest, or a reclamation site that is 10 mi or less from waters of the United States unless allowed by the permitting authority. (1)(2)(9)(14)(16) (NOTE: When bulk sewage sludge or bulk material derived from sewage sludge is applied to the land that meets the requirements in Appendix 2-8, Class A pathogen requirements (see definitions), and vector attraction reduction requirements as follows, it is exempt from these requirements: - the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done: - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 ^{0}C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-88. (continued)	- for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 °C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved - the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 °C - sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 °C and the average temperature is higher than 45 °C - the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h - the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials - *the percent solids of sewage sludge that contains unstablized solids* generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials (40 CFR 503.10(b) and 503.10(c)).
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-89. As of 19 February 1994, bulk sewage sludge applied to agricultural land, forest, a public contact site, or a reclamation site must meet specific standards (40 CFR 503.12(b), 503.13 (a)(2), and 503.14(d)).	Verify that the cumulative loading rate for each pollutant does not exceed the limits outlined in Appendix 2-6. (1)(2)(9)(14)(16) Verify that the concentration of each pollutant in the sewage sludge does not exceed the concentration for the pollutant in Appendix 2-8. (1)(2)(9)(14)(16) Verify that bulk sewage sludge is applied at a whole sludge application rate that is equal to or less than the agronomic rate for the bulk sewage sludge unless otherwise specified by a permitting authority. (1)(2)(9)(14)(16) (NOTE: When bulk sewage sludge is applied to the land that meets the requirements in Appendix 2-8, Class A pathogen requirements (see definitions), and vector attraction reduction requirements as follows, it is exempt from the requirements concerning Appendix 2-6 and the agronomic rate application: - the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done: - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 ^{o}C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved - for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 ^{o}C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved - the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 ^{o}C - sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 ^{o}C and the average temperature is higher than 45 ^{o}C - the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h - the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials - the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-90. As of 19 February 1994, bulk sewage sludge applied to a lawn or home garden must not contain pollutants in excess of the limits in Appendix 2-8 (40 CFR 503.13(a)(3)).	Verify that if bulk sewage sludge is applied to a lawn or home garden it does not contain pollutants in excess of the limits in Appendix 2-8. (1)(2)(9)(14)(16)
...	...
2-91. As of 19 February 1994, the annual application rate for domestic septage applied to agricultural land, forest or a reclamation site must not exceed specific limits (40 CFR 503.12(c) and 503.13 (c)).	Verify that the annual application rate for domestic septage applied to agricultural lands, forest or a reclamation site does not exceed the annual application rate calculated using the following equation: (1)(2)(9)(14)(16) $AAR = \frac{N}{0.0026}$ AAR = Annual application rate in gal/acre per 365 day period N = amount of nitrogen in lb/acre per 365 day period needed by the crop or vegetation grown on the land.
...	...
Vectors and Pathogens	
2-92. As of 19 February 1994, bulk sewage sludge applied to agricultural land, forest, a public contact site or a reclamation site is required to meet specific standards for pathogens (40 CFR 503.15(a)(1), 503.32(a), and 503.32(b)).	Verify that the sewage sludge meets the Class A or the Class B pathogen requirements (see Definitions) and the following site restrictions: (1)(2)(9)(14)(16) - food crops with harvested parts that touch the sewage sludge soil mixture and are totally above the land surface are not harvested for 14 mo after application of sewage sludge - food crops with harvested parts below the surface of the land are not harvested for 20 mo after the application of sewage sludge when the sewage sludge remains on the land surface for 4 mo or longer prior to incorporation into the soil - food crops with harvested parts below the surface of the land are not harvested for 38 mo after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 mo prior to incorporation into the soil - food crops, feed crops, and fiber crops are not harvested for 30 days after application of the sewage sludge - animals are not allowed to graze for 30 days after application - turf grown on land where sewage sludge is applied is not harvested for 1 yr after application of sewage sludge when the turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority - public access to land with a high potential for public exposure is restricted for 1 yr after application - public access to land with a low potential for public exposure is restricted for 30 days after application.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

2-93. As of 19 February 1994, bulk sewage sludge applied to agricultural land, forest, a public contact site or a reclamation site is required to meet specific standards for vector attraction reduction (40 CFR 503.15(c)(1) and 503.33(b)(1) through 503.33(b)(10)).	Verify that one of the following vector reduction requirements are met: (1)(2)(9)(14)(16)
	- the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done:
	  - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 °C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved
	  - for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 °C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved
	- the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 °C
	- sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 °C and the average temperature is higher than 45 °C
	- the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h
	- the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials
	- the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials
	- sewage sludge is injected below the surface of the land:
	  - no significant amount of the sewage sludge is present on the land surface within 1 h after injection
	  - when the sludge that is injected in Class A with respect to pathogens, the sludge is injected below the land surface within 8 h after being discharged from the pathogen treatment process
	- sewage sludge applied to a land surface or placed on a surface disposal site is incorporated into the soil within 6 h after application to or placement on the land. When sludge incorporated into the soil is Class A, the sewage sludge is applied to or placed on the land within 8 h after being discharged from the pathogen treatment process.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

2-94. As of 19 February 1994, bulk sewage sludge applied to a lawn or home garden must meet the Class A pathogen requirements and specific vector reduction requirements (40 CFR 503.15 (a)(2), 503.32(a), and 503.33(b)(1) through 503.33(b)(8)).	Verify that for bulk sewage sludge the Class A pathogen requirements (see Definitions) are met. (1)(2)(9)(14)(16)
	
	Verify that one of the following vector reduction requirements are met: (1)(2)(9)(14)(16)
	
	- the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done:
	  - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 °C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved
	  - for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 °C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved
	- the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 °C
	- sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 °C and the average temperature is higher than 45 °C
	- the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h
	- the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials
	- the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-95. As of 19 February 1994, sewage sludge that is sold or given away in a bag or container must meet Class A pathogen requirements and specific vector reduction requirements (40 CFR 503.15 (a)(3), 503.32(a), and 503.33(b)(1) through 503.33(b)(8)).	Verify that for sewage sludge that is sold or given away in a bag or container, it meets the Class A pathogen requirements (see Definitions). (1)(2)(9)(14)(16) Verify that one of the following vector reduction requirements are met: (1)(2)(9)(14)(16) - the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent - a 17 percent reduction of volatile solids when the 38 percent volatile solids reduction requirements cannot be met for an anaerobically digested sewage sludge and the vector reduction attraction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 ^{0}C - a 15 percent reduction of volatile solids when the 38 percent volatile solids reduction requirements cannot be met for an aerobically digested sewage sludge and the vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 ^{0}C - the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 ^{0}C - sewage sludge is treated in an aerobic process for 14 days or longer and the temperature is higher than 40 ^{0}C and the average temperature of the sewage sludge is higher than 45 ^{0}C - the pH of the sewage sludge is raised to 12 or higher by alkali addition and, without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h - the percent solids of sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials - the percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-96. As of 19 February 1994, domestic septage that is applied to agricultural land, forest, or a reclamation site must meet specific pathogen requirements and vector reduction requirements (40 CFR 503.15(b), 503.15(d), 503.32(c)(1), 503.32(c)(2), 503.33(b)(9), 503.33(b)(10), and 503.33(b)(12)).	Verify that one of the following requirements is met for pathogen control: (1)(2)(9)(14)(16) - the pH of the domestic septage is raised to 12 or higher by alkali addition, remaining 12 or higher for 30 min, and the following land restrictions are met: - food crops with harvested parts that touch the sewage sludge soil mixture and are totally above the land surface are not harvested for 14 mo after application of sewage sludge - food crops with harvested parts below the surface of the land are not harvested for 20 mo after the application of sewage sludge when the sewage sludge remains on the land surface for 4 mo or longer prior to incorporation into the soil - food crops with harvested parts below the surface of the land are not harvested for 38 mo after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 mo prior to incorporation into the soil - food crops, feed crops, and fiber crops are not harvested for 30 days after application of the sewage sludge - site restrictions are followed: - food crops with harvested parts that touch the sewage sludge soil mixture and are totally above the land surface are not harvested for 14 mo after application of sewage sludge - food crops with harvested parts below the surface of the land are not harvested for 20 mo after the application of sewage sludge when the sewage sludge remains on the land surface for 4 mo or longer prior to incorporation into the soil - food crops with harvested parts below the surface of the land are not harvested for 38 mo after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 mo prior to incorporation into the soil

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

2-96. (continued)	- food crops, feed crops, and fiber crops are not harvested for 30 days after application of the sewage sludge
	- animals are not allowed to graze for 30 days after application
	- turf grown on land where sewage sludge is applied is not harvested for 1 yr after application of sewage sludge when the turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority
	- public access to land with a high potential for public exposure is restricted for 1 yr after application
	- public access to land with a low potential for public exposure is restricted for 30 days after application.
	
	Verify that one of the following vector attraction reduction requirements is met: (1)(2)(9)(14)(16)
	
	- sewage sludge is injected below the surface of the land:
	  - no significant amount of the sewage sludge is present on the land surface within 1 h after injection
	  - when the sludge that is injected in Class A with respect to pathogens, the sludge is injected below the land surface within 8 h after being discharged from the pathogen treatment process
	- sewage sludge applied to a land surface or placed on a surface disposal site is incorporated into the soil within 6 h after application to or placement on the land. When sludge incorporated into the soil is Class A, the sewage sludge is applied to or placed on the land within 8 h after being discharged from the pathogen treatment process
	- the pH of domestic septage is raised to 12 or higher by alkali addition and, without the addition of more alkali, remains at 12 or higher for 30 min.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Notifications **2-97.** As of 19 February 1994, persons who prepare bulk sewage sludge are required to provide specific notifications (40 CFR 503.12 (f) and 503.12(g)).	Verify that if the facility prepares bulk sewage sludge, it provides the person applying the bulk sewage sludge the notices and necessary information neeeded to comply with the land application regulations. (1)(2)(9)(14)(16) (NOTE: When bulk sewage sludge or bulk material derived from sewage sludge is applied to the land that meets the requirements in Appendix 2-8, Class A pathogen requirements (see definitions), and vector attraction reduction requirements as follows, it is exempt from these requirements: - the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done: - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 ^{o}C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved - for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 ^{o}C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved - the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 ^{o}C - sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 ^{o}C and the average temperature is higher than 45 ^{o}C - the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h - the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials - the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials (40 CFR 503.10(b)).
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-98. As of 19 February 1994, persons who prepare bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site are required to provide users with written notification of the total nitrogen on a dry weight basis (40 CFR 503.12(d)).	Determine if the facility prepares sewage sludge for application to agricultural land, forest, a public contact site, or a reclamation site. (1)(2)(9)(14)(16) Verify that the facility provides users with written notification of the total nitrogen on a dry weight basis. (1)(2)(9)(14)(16)
...	...
2-99. As of 19 February 1994, persons who apply bulk sewage sludge to the land are required to provide notice to the land owner or lease holder (40 CFR 503.12(h)).	Verify that notice is given that includes the information needed to verify compliance with the land application regulations. (1)(2)(9)(14)(16) (NOTE: When bulk sewage sludge or bulk material derived from sewage sludge is applied to the land that meets the requirements in Appendix 2-8, Class A pathogen requirements (see definitions), and vector attraction reduction requirements as follows, it is exempt from these requirements: - the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done: - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 ^{o}C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved - for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 ^{o}C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved - the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 ^{o}C

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-99. (continued)	- sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 °C and the average temperature is higher than 45 °C - the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h - the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials - the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials (40 CFR 503.10(b) and 503.10(c)).
...	...
2-100. As of 19 February 1994, facilities that prepare bulk sewage sludge that is used in a *different state* are required to provide written notice (40 CFR 503.12(i)).	Determine if the facility prepares sewage sludge for land application that is used in another state. (1)(2)(9)(14)(16) Verify that written notification is prepared and provided to the permitting *authority in the state of application* that includes the following: (1)(2)(9)(14)(16) - the location of each land application site - the approximate time period bulk sewage sludge will be applied to the site - the name, address, telephone number, and NPDES permit number (if appropriate) for the facility preparing the sludge - the name, address, telephone number, and NPDES permit number (if appropriate) for the facility applying the sludge.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-101. As of 19 February 1994, facilities that apply bulk sewage sludge subject to the cumulative loading rates in Appendix 2-6 are required to provide written notice prior to the initial application of the sludge (40 CFR 503.12(j)).	Verify that prior to the initial application of bulk sewage sludge that is subject to the cumulative loading rates in Appendix 2-6, notice is provided to the permitting authority for the state that includes: (1)(2)(9)(14)(16) - the location of the land application site - the name, address, telephone number, NPDES permit number (if appropriate) of the facility applying the sludge. (NOTE: When bulk sewage sludge or bulk material derived from sewage sludge is applied to the land that meets the requirements in Appendix 2-8, Class A pathogen requirements (see definitions), and vector attraction reduction requirements as follows, it is exempt from these requirements: - the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done: - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 °C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved - for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 °C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved - the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 °C - sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 °C and the average temperature is higher than 45 °C - the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h - the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 5 percent based on the moisture content and total solids prior to mixing with other materials - the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials (40 CFR 503.10(b) and 503.10(c).)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Monitoring	
2-102. As of 20 July 1993, monitoring for the limitations in Appendices 2-6 through 2-9, pathogen density in Class A and Class B pathogens, and vector attraction reduction requirements must be done according to the frequency in Appendix 2-10 (40 CFR 503.16(a)).	Verify that monitoring for the limitations in Appendices 2-6 through 2-9, pathogen density in Class A and Class B pathogens, and vector attraction reduction requirements is done according to the frequency in Appendix 2-10. (1)(2)(9)(14)(16) (NOTE: After the sewage sludge has been monitored for 2 yr, the permitting authority may reduce the frequency of monitoring.)
...	...
2-103. As of 20 July 1993, in specific instances, when domestic sewage is applied to agricultural land, forest, or a reclamation site, each container of domestic septage applied to the land is required to be monitored for compliance (40 CFR 503.16(b)).	Verify that each container of domestic septage is monitored if the pH has been raised to 12 or higher by alkali addition, and kept there for 30 min. (1)(2)(9)(14)(16)
...	...
Recordkeeping and Reporting	
2-104. As of 20 July 1993, when bulk sewage sludge is applied to the land or sold in a bag or container and it meets the requirements in Appendix 2-8, Class A pathogen requirements, and vector attraction reduction requirements, specific recordkeeping requirements must be met (40 CFR 503.17(a)(1)).	Determine if the installation applies bulk sewage sludge or sells or gives it away in a bag or container. (1)(2)(9)(14)(16) Verify that it meets the requirements in Appendix 2-8, Class A pathogen requirements (see definitions) and one of the following vector attraction reduction requirements: (1)(2)(9)(14)(16) - the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done: - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 °C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-104. (continued)	- for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 °C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved - the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 °C - sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 °C and the average temperature is higher than 45 °C - the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h - the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials - the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials. Verify that the following information is retained for 5 yr: (1)(2)(9)(14)(16) - the concentration of each pollutant listed in Appendix 2-8 - a statement certifying which form of vector attraction reduction is being used and that Class A pathogen requirements are being met - a description of how the Class A pathogen requirements are being met - a description of how the vector attraction reduction is being met.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

2-105. As of 20 July 1993, when the installation derives material from sewage sludge for application and/or to sell or give away in a bag or container and it meets the requirements in Appendix 2-8, Class A pathogen requirements, and vector attraction reduction requirements, specific recordkeeping requirements must be met (40 CFR 503.17(a)(2)).	Determine if the installation derives material from bulk sewage sludge or sells or gives away material derived from sewage sludge in a bag or container. (1)(2)(9)(14)(16)
	
	Verify that it meets the requirements in Appendix 2-8, Class A pathogen requirements (see definitions) and one of the following vector attraction reduction requirements: (1)(2)(9)(14)(16)
	
	- the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done:
	  - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 ^{o}C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved
	  - for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 ^{o}C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved
	- the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 ^{o}C
	- sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 ^{o}C and the average temperature is higher than 45 ^{o}C the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h
	- the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials
	- the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.
	
	Verify that the following information is retained for 5 yr: (1)(2)(9)(14)(16)
	
	- the concentration of each pollutant listed in Appendix 2-8
	- a statement certifying which vector attraction reduction is being used and that Class A pathogen requirements are being met
	- a description of how the Class A pathogen requirements are being met
	- a description of how the vector attraction reduction is being met.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Waste Water Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

2-106. As of 20 July 1993, when bulk sewage sludge that meets the limitations in Appendix 2-8, the requirements concerning Class A pathogens, and the vector reduction requirements, is applied to agricultural land, forest, a public contact site, or reclamation site, specific reporting requirements must be met (40 CFR 503.17(a)(3)).	Determine if the installation applies bulk sewage sludge to agricultural land, forest, a public contact site or a reclamation site. (1)(2)(9)(14)(16)
	
	Verify that the sludge being applied meets the requirements in Appendix 2-8, Class A pathogen requirements (see definitions) and one of the following vector attraction reduction requirements: (1)(2)(9)(14)(16)
	
	- the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done:
	  - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 ^{o}C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved
	  - for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 ^{o}C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved
	- SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 ^{o}C
	- sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 ^{o}C and the average temperature is higher than 45 ^{o}C
	- the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h
	- the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials
	- the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-106. (continued)	Verify that the following information is retained for 5 yr by the person who prepares the sludge: (1)(2)(9)(14)(16) - the concentration of each pollutant listed in Appendix 2-8 - a statement certifying which vector attraction reduction is being used and that Class A pathogen requirements are being met - a description of how the Class A pathogen requirements are being met - a description of how the vector attraction reduction is being met. Verify that the following information is retained for 5 yr by the person who applies the sludge: (1)(2)(9)(14)(16) - a statement certifying that appropriate management practices and application procedures are being used - a description of how required management practices are implemented - a description of how the vector reduction requirements are met.
...	...
2-107. As of 20 July 1993, when bulk sewage sludge that meets the limitations in Appendix 2-8, and the requirements concerning Class B pathogens, is applied to agricultural land, forest, a public contact site, or reclamation site, specific reporting requirements must be met (40 CFR 503.17(a)(4)).	Determine if the installation applies bulk sewage sludge to agricultural land, forest, a public contact site, or a reclamation site. (1)(2)(9)(14)(16) Verify that the sludge being applied meets the requirements in Appendix 2-8 and Class B pathogen requirements (see definitions). (1)(2)(9)(14)(16) Verify that the following information is retained for 5 yr by the person who prepares the sludge: (1)(2)(9)(14)(16) - the concentration of each pollutant listed in Appendix 2-8 - a statement certifying which form of vector attraction reduction is being used and that Class A pathogen requirements are being met - a description of how the Class B pathogen requirements are being met - a description of how the vector attraction reduction is being met when it is used. Verify that the following information is retained for 5 yr by the person who applies the sludge: (1)(2)(9)(14)(16) - a statement certifying that appropriate management practices and application procedures are being used - a description of how required management practices are implemented - a description of how site restrictions are being met - a description of how the vector reduction requirements are met when they are used.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-108. As of 20 July 1993, when bulk sewage sludge that meets the limitations in Appendix 2-6, is applied to agricultural land, forest, a public contact site, or reclamation site specific reporting requirements must be met (40 CFR 503.17(a)(5)).	Determine if the installation applies bulk sewage sludge to agricultural land, forest, a public contact site or reclamation site. (1)(2)(9)(14)(16) Verify that it meets the requirements in Appendix 2-6. (1)(2)(9)(14)(16) Verify that the following information is retained for 5 yr by the person who prepares the sludge: (1)(2)(9)(14)(16) - the concentration of each pollutant listed in Appendix 2-6 - a statement certifying which form of vector attraction reduction is being used and that pathogen requirements are being met - a description of how the pathogen requirements are being met - a description of how the vector attraction reduction is being met when used. Verify that the following information is retained indefinitely by the person who applies the sludge: (1)(2)(9)(14)(16) - the concentration of each pollutant listed in Appendix 2-6 - the number of hectares in each site upon which bulk sewage sludge is applied - the date and time bulk sewage sludge is applied to each site - the cumulative amount of each pollutant from Appendix 2-6 in the bulk sewage sludge applied to each site - amount applied to each site - a certification statement indicating that required information for each site has been obtained - a description of how the requirements to obtain information were met. Verify that the following information is retained for 5 yr by the person applying the sludge: (1)(2)(9)(14)(16) - a statement certifying that appropriate management practices and application procedures are being used - a description of how required management practices are implemented - a certification statement that Class B pathogen requirements are being met - a description of how site restrictions are being met - certification statement that vector reduction requirements are met - a description of how vector reduction requirements are being met.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-109. As of 20 July 1993, when bulk sewage sludge is given away or sold in a bag or container and it meets the requirements in Appendix 2-9 specific recordkeeping requirements must be met (40 CFR 503.17(a)(6)).	Determine if the installation sells or gives bulk sewage sludge away in a bag or container. (1)(2)(9)(14)(16) Verify that it meets the requirements in Appendix 2-9. (1)(2)(9)(14)(16) Verify that the following information is retained for 5 yr by the person who prepares the sludge: (1)(2)(9)(14)(16) - the annual whole sludge application rate for the sewage sludge that does not cause the annual pollutant rates in Appendix 2-9 to be exceeded - the concentration of each pollutant listed in Appendix 2-8 - a statement certifying which vector attraction reduction is being used and that Class A pathogen requirements are being met - a description of how the Class A pathogen requirements are being met - a description of how the vector attraction reduction is being met.
...	...
2-110. As of 20 July 1993, when domestic septage is applied to agricultural land, forest, or a reclamation site specific reporting requirements must be met (40 CFR 503.17(b)).	Determine if the installation applies domestic septage to agricultural land, forest, a public contact site or reclamation site. (1)(2)(9)(14)(16) Verify that the following information is retained for 5 yr by the person who applies the domestic septage: (1)(2)(9)(14)(16) - the location of each site on which domestic septage is applied - the number of acres in each site on which domestic septage is applied - the date and time of application at each site - the nitrogen requirements for the crop or vegetation grown on each site during a 365 day period - the rate in gal/ acre per 365 day period at which domestic septage is applied to each site - a statement certifying which vector attraction reduction is being used and that pathogen requirements are being met - a description of how the Class A pathogen requirements are being met - a description of how the pathogen requirements are being met - a description of how the vector attraction reduction is being met.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-111. As of 20 July 1993, Class I sludge management facilities, POTWs/FOTWs with a design flow rate equal to or greater than 1 million gal/ day, and POTWs/FOTWs that serve 10,000 people or more are required to submit specific information to the permitting authority (40 CFR 503.18).	Verify that the following information is submitted to the permitting authority by 19 February of each year: (1)(2)(9)(14)(16) - the concentration of each pollutant listed in Appendix 2-9 - a statement certifying which form of vector attraction reduction is being used and that Class A pathogen requirements are being met - a description of how the Class A pathogen requirements are being met - a description of how the vector attraction reduction is being met. Verify that the following information is submitted on 19 February of each year when 90 percent or more of any of the cumulative loading rates in Appendix 2-6 are met: (1)(2)(9)(14)(16) - the concentration of each pollutant listed in Appendix 2-6 - the number of hectares in each site upon which bulk sewage sludge is applied - the date and time bulk sewage sludge is applied to each site - the cumulative amount of each pollutant from Appendix 2-6 in the bulk sewage sludge applied to each site - amount applied to each site - a certification statement indicating that required information for each site has been obtained - a description of how the requirement to obtain information were met.
...	...
SURFACE DISPOSAL OF SLUDGE General	(NOTE: The requirements concerning surface disposal of sludge do not apply to sewage sludge stored on the land or to the land on which sewage sludge is stored. It also does not apply to sewage sludge that remains on the land for longer than 2 yr when the facility who prepares the sewage sludge demonstrates that the land on which the sewage sludge remains is not an active sewage sludge unit. It also does not apply to sewage treated on the land or to the land on which the sewage sludge is treated (40 CFR 503.20(b) and 503.20(c).)
2-112. As of 19 February 1994, an active sewage sludge unit that is located within 60 m (197 ft) of a fault that has displacement in Holocene time, located in an unstable area, or located in a wetland is required to close by 19 February 1994 (40 CFR 503.22(b)).	Determine if the installation has a sewage sludge unit that is located within 60 m (197 ft) of a fault that has displacement in Holocene time, located in an unstable area, or is located in a wetland. (1)(2)(9)(14)(16) Verify that the unit will be closed by 19 February 1994 unless otherwise stipulated by the permitting authority. (1)(2)(9)(14)(16)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-113. As of 19 February 1994, the installation is required to submit a written closure and postclosure plan that meets specific requirements to the permitting authority 180 days prior to the date of closure (40 CFR 503.22(c)).	Determine if the installation is planning on closing an active sewage sludge unit or has recently closed a sewage sludge unit. (1)(2)(9)(14)(16) Verify that the closure and post-closure plan was submitted to the permitting authority at least 180 days in advance of closure and the plan contained the following: (1)(2)(9)(14)(16) - a discussion of how the leachate collection system will be operated and maintained for 3 yr after closure if the unit has a liner and leachate collection system - a description of the system used to monitor for methane gas in the air in any structure within the surface disposal site and in the air at the property line - a discussion of how public access will be restricted for 3 yr after closure. Verify that if there are plans to turn the surface disposal site over to another owner, the installation notifies the subsequent owner that sewage sludge was placed on the land. (1)(2)(9)(14)(16)
...	...
2-114. As of 19 February 1994, active sewage sludge units without a liner and leachate collection system are required to met specific standards (40 CFR 503.23(a)(1) and 503.23(b)).	Verify that following concentrations are not exceeded in sewage sludge placed on an active sewage sludge unit: (1)(2)(9)(14)(16) - arsenic: 73 mg/kg - chromium: 600 mg/kg - nickel: 420 mg/kg. (NOTE: Amounts are based on a dry weight basis.)
...	...
2-115. As of 19 February 1994, active sewage sludge units without a liner and leachate collection system with a boundary less than 150 m (492 ft) from the property line of the surface disposal site are required to meet specific requirements (40 CFR 503.23(a)(2) and 503.23(b)).	Verify that the concentration of each pollutant listed in Appendix 2-11 are not exceeded in relation to the listed distances. (1)(2)(9)(14)(16) (NOTE: At the time of the permit application, the owner/operator of the site may ask for site specific pollutant limits.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-116. As of 19 February 1994, sewage sludge units are required to be operated according to specific operation and management standards (40 CFR 503.24).	Verify that sewage sludge is not placed in an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species or its critical habitat. (1)(2)(9)(14)(16) Verify that active sewage sludge units: (1)(2)(9)(14)(16) - do not restrict the flow of a base flood - is located 60 m (197 ft) or more from a fault that has displacement in Holocene time, unless otherwise specified by the permitting authority - is not located in an unstable area - will not contaminate an aquifer - is not located in a wetland unless by permit. (NOTE: The results of a groundwater monitoring program developed by a qualified groundwater scientist or a certification by a qualified groundwater scientist will be used to demonstrate that sewage sludge placed on an active sewage sludge unit does not contaminate an aquifer.) Verify that when a surface disposal site is located in a seismic impact zone, the unit is designed to withstand the maximum recorded horizontal ground level acceleration. (1)(2)(9)(14)(16) Verify that for runoff the following occurs: (1)(2)(9)(14)(16) - the runoff is collected and disposed of in accordance with an NPDES permit - the runoff collection system has the capacity to handle runoff from a 24 h, 25-yr storm event. Verify that leachate is handled so that: (1)(2)(9)(14)(16) - the leachate collection system for an active sewage sludge unit that has a liner and leachate collection system is operated and maintained during the period the sewage sludge unit is active and for 3 yr thereafter - leachate from an active sewage sludge unit that has a liner and a leachate collection system is collected and disposed of in accordance with the applicable requirements from when the unit is active and for 3 yr thereafter.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-116. (continued)	Verify that the following occurs when a cover is placed on a sewage sludge unit: (1)(2)(9)(14)(16) - the concentration of methane gas in the air in any structure within the surface disposal site of an active unit does not exceed 25 percent of the lower explosive limit for methane gas during the period that the unit is active and the concentration of the methane gas in air at the property line of the surface disposal site do not exceed the lower explosive limit for methane gas during the period that the sewage sludge unit is active - the concentration of methane gas at closure when the final cover is placed in air in any structure within any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit for methane gas for 3 yr after the unit closes and the concentration of methane gas in air at the property line of the unit does not exceed the lower explosive limit for methane gas 3 yr after closure unless otherwise specified by the permitting authority. Verify that a food or feed crop or a fiber crop are not grown on an active sewage sludge unit unless it has been demonstrated to the permitting authority that through management practices public health and the environment are protected from any reasonably anticipated adverse effects. (1)(2)(9)(14)(16) Verify that animals are not grazed on an active sewage sludge unit unless it has been demonstrated to the permitting authority that through management practices public health and the environment are protected from any reasonably anticipated adverse effects. (1)(2)(9)(14)(16) Verify that public access is restricted for the period that the surface disposal site contains an active unit and for 3 yr after the last active sewage sludge unit in the surface disposal site closes. (1)(2)(9)(14)(16)
...	...
2-117. As of 19 February 1994, Class A or one of the Class B pathogen requirements (see definitions) must be met when placing sewage sludge on an active sewage sludge unit unless it is covered with soil or other material at the end of each operating day (40 CFR 503.25(a)).	Determine if the sewage sludge meets Class A or one of the Class B pathogen requirements. (1)(2)(9)(14)(16) Verify that if the sludge does not meet pathogen requirements, it is covered with soil or other material at the end of each operating day. (1)(2)(9)(14)(16)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-118. As of 19 February 1994, vector attraction reduction must be done when sewage sludge or domestic septage is placed on an active sewage sludge unit (40 CFR 503.25(b) and 503.25(c)).	Verify that when sewage sludge is placed on an active sewage sludge unit one of the following vector attraction reduction requirements is done: (1)(2)(9)(14)(16) - the mass of volatile solids in the sewage sludge is reduced by a minimum of 38 percent. If this cannot be done: - for an anaerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 ^{o}C. When at the end of 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved - for an aerobically digested sewage sludge, vector attraction reduction is demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of 2 percent or less aerobically in the laboratory in a bench scale unit for 30 additional days at 20 ^{o}C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of the period is reduced by less than 15 percent, vector attraction reduction is achieved - the SOUR for sewage sludge treated in an aerobic process is equal to or less than 1.5 mg of oxygen/h/g of total solids (dry weight basis) at a temperature of 20 ^{o}C - sewage sludge is treated in an aerobic process for 14 days or longer, during which time the temperature of the sewage sludge is higher than 40 ^{o}C and the average temperature is higher than 45 ^{o}C - the pH of the sewage sludge is raised to 12 or higher by alkali addition, and without the addition of more alkali, remains at 12 or higher for 2 h and than at 11.5 or higher for an additional 22 h - the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials - the percent solids of sewage sludge that contains unstablized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-118. (continued)	- sewage sludge is injected below the surface of the land: - no significant amount of the sewage sludge is present on the land surface within 1 h after injection - when the sludge that is injected in Class A with respect to pathogens, the sludge is injected below the land surface within 8 h after being discharged from the pathogen treatment process - sewage sludge applied to a land surface or placed on a surface disposal site is incorporated into the soil within 6 h after application to or placement on the land. When sludge incorporated into the soil is Class A, the sewage sludge is applied to or placed on the land within 8 h after being discharged from the pathogen treatment process - the sewage sludge placed on an active sewage sludge unit is covered with soil or other material at the end of each operating day. Verify that when domestic septage is placed on an active sewage sludge unit one of the following vector attraction reduction requirements is done: (1)(2)(9)(14)(16) - sewage sludge is injected below the surface of the land: - no significant amount of the sewage sludge is present on the land surface within 1 h after injection - when the sludge that is injected in Class A with respect to pathogens, the sludge is injected below the land surface within 8 h after being discharged from the pathogen treatment process - sewage sludge applied to a land surface or placed on a surface disposal site is incorporated into the soil within 6 h after application to or placement on the land. When sludge incorporated into the soil is Class A, the sewage sludge is applied to or placed on the land within 8 h after being discharged from the pathogen treatment process - the sewage sludge placed on an active sewage sludge unit is covered with soil or other material at the end of each operating day - the pH of the domestic septage is raised to 12 or higher by alkali addition and, without the addition of more alkali, remains at 12 or higher for 30 min.
...	...

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Monitoring and Documentation	
2-119. As of 20 July 1993, monitoring for pollutants, pathogens, and vector attraction reduction requirements for sewage sludge placed on an active sewage sludge unit must be done according to the frequency in Appendix 2-10 (40 CFR 503.26(a)).	Verify that monitoring for pollutants, pathogens, and vector attraction reduction requirements for sewage sludge placed on an active sewage sludge unit is done according to the frequency in Appendix 2-10. (1)(2)(9)(14)(16) (NOTE: The permitting authority may reduce the frequency of monitoring.)
...	...
2-120. As of 20 July 1993, if, when domestic septage is placed on an active sewage sludge unit, the pH of the septage is raised to 12 or higher by alkali addition and remains at 12 or higher without alkali addition for 30 min, each container of domestic septage must be monitored (40 CFR 503.26(b).	Verify that when domestic septage is placed on an active sewage sludge unit, the pH of the septage is raised to 12 or higher by alkali addition and remains at 12 or higher without alkali addition for 30 min, each container of domestic septage is monitored. (1)(2)(9)(14)(16)
...	...
2-121. As of 20 July 1993, in specific circumstances air in structures within a surface disposal site and at property lines of the surface disposal site are required to be monitored continuously for methane gas (40 CFR 503.26(c).	Verify that continuous monitoring occurs during the period that the surface disposal site contains an active sewage sludge unit on which the sewage sludge is covered and for 3 yr after a unit closes when a final cover is placed on the sewage sludge. (1)(2)(9)(14)(16)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-122. As of 20 July 1993, specific record-keeping requirements must be met when sewage sludge, other than domestic septage, is placed on an active sewage sludge unit (40 CFR 503.27(a)). ...	Verify that the person who prepares sewage sludge retains the following information for 5 yr: (1)(2)(9)(14)(16) - the concentration of arsenic, chromium and nickel in the sludge - a statement certifying that pathogen and vector attraction reduction requirements are being met - a description of how the pathogen requirements are being met when done - a description of how the vector attraction reduction requirements are being met when done. Verify that the operator of the surface disposal site retains the following for 5 yr: (1)(2)(9)(14)(16) - the concentrations of the pollutants listed in Appendix 2-11 - a statement certifying that management practices and vector attraction reduction requirement are being met - a description of how the management practices are being met - a description of how the vector attraction reduction requirements are being met when they are done. ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-123. As of 20 July 1993, specific record-keeping requirements must be met when domestic septage is placed on an active sewage sludge unit (40 CFR 503.27(b)).	Verify that the person who applies domestic septage with a pH of greater than 12 retains the following information for 5 yr: (1)(2)(9)(14)(16) - a statement certifying that vector attraction reduction requirements are being met - a description of how the vector attraction reduction requirements are being met when done. Verify that the operator of the surface disposal site retains the following for 5 yr: (1)(2)(9)(14)(16) - a statement certifying that management practices and vector attraction reduction requirement are being met - a description of how the management practices are being met - a description of how the vector attraction reduction requirements are being met when they are done.
...	...
2-124. As of 20 July 1993, Class I sludge management facilities, POTWs/FOTWs with a design flow rate equal to or greater than 1,000,000 gal/day, and POTWs/FOTWs that serve 10,000 people or more are required to submit specific information to the permitting authority on 19 February of each year (40 CFR 503.28).	Verify that the following information is submitted to the permitting authority on 19 February of each year: (1)(2)(9)(14)(16) - the concentration of arsenic, chromium and nickel in the sludge - a statement certifying that management practices and pathogen and vector attraction reduction requirements are being met - a description of how the pathogen requirements are being met when done - a description of how the vector attraction reduction requirements are being met when done - the concentrations of the pollutants listed in Appendix 2-11 - a description of how the management practices are being met.
...	...
SLUDGE INCINERATION	
2-125. As of 19 February 1994, installations with incinerators that fire sewage sludge must meet specific emissions standards (40 CFR 503.43(a) and 503.43(b)).	Verify that incinerators that fire sewage sludge meet the requirements on beryllium and mercury emissions outlined in 40 CFR 61.30 through 61.34 and 61.50 through 61.56 (see checklist items 1-27 in *Clear Air Act (CAA)*). (1)(2)(9)(14)(16)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-126. As of 19 February 1994, sewage sludge being fed to an incinerator is required to meet specific concentration limitations for lead, arsenic, cadmium, and nickel (40 CFR 503.43(c) and 503.43(d)).	Verify that the daily concentration of lead in sewage sludge fed to a sewage sludge incinerator does not exceed the concentration calculated using Formula 1 in Appendix 2-12. (1)(2)(9)(14)(16) Verify that the daily concentration of arsenic, cadmium, chromium, and nickel do not exceed the concentrations calculated using Formula 2 in Appendix 2-12. (1)(2)(9)(14)(16)
...	...
2-127. As of 19 February 1994, the concentration of total hydrocarbons in the exit gas from a sewage sludge incinerator must meet specific limits (40 CFR 503.44).	Verify that the monthly average concentration for total hydrocarbons in the exit gas, corrected to 0 percent moisture using the correction factor from Formula 1 of Appendix 2-13 and to 7 percent oxygen using the the correction factor from Formula 2 does not exceed 100 parts per million (ppm) on a volumetric basis. (1)(2)(9)(14)(16)
...	...
2-128. As of 20 July 1993, sewage sludge incinerators are required to have continuous monitoring devices for hydrocarbons and oxygen in the exit gas, and a continuous monitoring for combustion temperature, as specified by the permitting authority (40 CFR 503.45(a) through 503.45 (f)).	Determine what the permitting authority has specified in terms of continuous monitors for combustion temperature, and hydrocarbons and oxygen in the exit gas. (1)(2)(9)(14)(16) Verify that the required monitors are in place and operational. (1)(2)(9)(14)(16) (NOTE: The requirement for continuous monitors for hydrocarbons is effective 19 February 1994 unless construction of new pollution control facilities is required, in which case the compliance date is 19 February 1995.)
...	...
2-129. As of 19 February 1994, sewage sludge must not be fired in a sewage sludge incinerator if it is likely to affect a threatened or endangered species (40 CFR 503.45 (g)).	Determine if the installation has any endangered or threatened species which might be affected by the firing of the incinerator. (1)(2)(9)(14)(16)
...	...
2-130. As of 20 July 1993, monitoring for arsenic, chromium, lead, and nickel shall be done at the frequency outlined in Appendix 2-10 (40 CFR 503.46).	Verify that monitoring is done at the frequency outlined in Appendix 2-10. (1)(2)(9)(14)(16) (NOTE: After 2 yr of monitoring the permitting authority might reduce the required frequency.) (NOTE: Beryllium, mercury, and air pollution control device operating parameters will be monitored at the frequency designated by the permitting authority.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-131. As of 20 July 1993, individuals who fire sewage sludge in an incinerator are required to keep specific information on file for 5 yr (40 CFR 503.47).	Verify that the following information is kept on file for 5 yr: (1)(2)(9)(14)(16) - the concentration of lead, arsenic, cadmium, chromium, and nickel in the sewage sludge fed to the incinerator - the total hydrocarbons concentration in the exit gas from the sewage sludge incinerator stack - information that indicates the National Emissions Standards for beryllium and mercury are met - the combustion temperatures, including the maximum combustion temperature for the incinerator - values for the air pollution control device operating parameters - the oxygen concentrations and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack - the sewage sludge feed rate - the stack height for the incinerator - the dispersion factor for the site where the incinerator is located - the control efficiency for lead, arsenic, cadmium, chromium, and nickel for each incinerator - the risk specific concentrations for chromium - a calibration and maintenance log for the instruments used to measure the total hydrocarbons and oxygen content in the exit gas and the combustion temperature.
...	...
2-132. As of 20 July 1993, Class I sludge management facilities, POTWs/FOTWs with a design flow rate equal to or greater than 1,000,000 gal/day, and POTWs/FOTWs that serve 10,000 people or more are required to submit specific information to the permitting authority (40 CFR 503.46).	Verify that the following information pertaining to incinerators is submitted to the permitting authority by 19 February of each year: (1)(2)(9)(14)(16) - the concentration of lead, arsenic, cadmium, chromium, and nickel in the sewage sludge fed to the incinerator - the total hydrocarbons concentration in the exit gas from the sewage sludge incinerator stack - information that indicates the National Emissions Standards for beryllium and mercury are met - the combustion temperatures, including the maximum combustion temperature for the incinerator - values for the air pollution control device operating parameters - the oxygen concentrations and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack - the sewage sludge feed rate - the stack height for the incinerator - the dispersion factor for the site where the incinerator is located - the control efficiency for lead, arsenic, cadmium, chromium, and nickel for each incinerator - the risk specific concentrations for chromium - a calibration and maintenance log for the instruments used to measure the total hydrocarbons and oxygen content in the exit gas and the combustion temperature.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
SWIMMING POOLS **2-133.** The operation, maintenance and repair of swimming pools will be done according to the standards outlined in TB MED 575 (AR 420-46, para 14a).	Verify, by interviewing the staff maintaining the pool, that the following is being done: (1)(2) - the pH of the pool does not drop below 7.2 - chlorine residuals and pH are determined at least four times daily when the pool is in use - records for pH and chlorine are maintained for at least two swimming seasons - when the membrane filter technique is used to determine the number of coliform colonies, the arithmetic mean for all samples analyzed for the past 30 days is less than or equal to 2.0 coliform organisms per 100 mL - when the multiple tube fermentation technique is used, not more than 15 percent of the samples examined in the past 30 days show positive results for coliform organisms in any of the 5 mL portions of this technique - in terms of heterotrophic plate count, after incubation of the nutrient agar plates for 48 h at 35 +/- 0.5 ^{0}C, the bacterial count is less than or equal to 200 bacteria per mL in greater than 85 percent of the samples examined in the last 30 days - samples for bacteriologic examinations and concurrent pH and chlorine residual measurement are collected at least once a week. (NOTE: TM 5-660 and TM-5-662 also contain guidance on the operation and management of swimming pools.)
...	...
2-134. Preventive Medicine (PVTMED) personnel are required to perform specific duties in relationship to swimming pools and swimming areas (AR 40-5, para 12-6b).	Verify that PVNTMED personnel inspect on a periodic basis the swimming facilities and operational logs to ensure that the operations and monitoring required by TB MED 575 are being done. (3) Verify that PVNTMED personnel: (3) - perform annual preseason and/or preopening inspections of swimming facilities - perform bacteriological sampling according to TB MED 575 - ensure that chlorine residual analyses are done by an approved method - maintain records of sanitary surveys, inspections, results of bacteriological analyses and other pertinent information - conduct a yearly sanitary survey of all natural swimming areas under installation control.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

Appendix 2-1

STEAM ELECTRIC POWER GENERATING POINT SOURCE

TABLE 1

Pollutant or pollutant property	BPT and NSPS effluent limitations	
	Maximum for any 1 day (mg/L)	Maximum average values for 30 consecutive days (mg/L)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

From 40 CFR 423.12(b)(3), 423.12(b)(4), 423.15(c) and 423.15(f)

TABLE 2

Pollutant or pollutant property	BPT Effluent limitations	
	Maximum for any 1 day (mg/L)	Maximum average values for 30 consecutive days (mg/L)
TSS	100.00.	30.0
Oil and Grease	20.0	15.0
Copper, total	1.0	1.0
Iron, total	1.0	1.0

From 40 CFR 423.12(b)(5) and 423.12(b)(6)

TABLE 3

Pollutant or pollutant property	BAT and NSPS effluent limitations	
	Maximum for any 1 day (mg/L)	Maximum daily average values for 30 consecutive days (mg/L)
The 126 priority pollutants (see next page) contained in chemicals added for cooling tower maintenance, except:	([1])	([1])
Chromium, total	0.2	0.2
Zinc, total	1.0	1.0

[1] No detectable amount.

From 40 CFR 423.13(d)(1) and 40 CFR 423.16(j)(1)

TABLE 4

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day (mg/L)	Maximum average values for 30 consecutive days (mg/L)
Copper, total	1.0	1.0
Iron, total	1.0	1.0

From 40 CFR 423.13(e)

TABLE 5

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day (mg/L)	Maximum average values for 30 consecutive days (mg/L)
TSS	100.0	30.0
Oil and Grease	20.0	15.0
Copper, total	1.0	1.0
Iron, total	1.0	1.0

From 40 CFR 423.12(b)(3) and 423.12(b)(4)

TABLE 6

Pollutant or pollutant property	PSES Effluent limitations Maximum for any time (mg/L)
The 126 priority pollutants (see next page) contained in chemicals added for cooling tower maintenance, except:	([1])
Chromium, total	0.2
Zinc, total	1.0

[1] No detectable amount.

From 40 CFR 423.16(d)(1)

TABLE 7

Pollutant or pollutant property	*PSES Effluent limitations* Maximum for any time (mg/L)
The 126 priority pollutants (see next page) contained in chemicals added for cooling tower maintenance, except:	
Chromium, total	0.2
Zinc, total	1.0

From 40 CFR 423.17(d)(1)

Appendix 2-1 (continued)

126 Priority Pollutants

Acenaphthene
Acrolein
Acrylonitrile
Benzene
Benzidine
Carbon tetrachloride (tetrachloromethane)
Chlorobenzene
1,2,4-Trichlorobenzene
Hexachlorobenzene
1,2-Dichloroethane
1,1,2-Trichloroethane
1,1,2,2-Tetrachloroethane
Chloroethane
Bis (2-chloroethyl)ether
2-Chloroethyl vinyl ehter (mixed)
2-Chloronaphthalene
2,4,6-Trichlorophenol
Parachlorneta cresol
Chloroform (trichloromethane)
2-Chlorophenol
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
3,3-Dichlorobenzidine
1,1-Dichloroethylene
1,2-Trans-dichlorothylene
2,3-Dichlorophenol
1,2-Dichloroprpane
1,3-Dichloropropylene (1,3-dichloropropene)
2,4-Dimethylphenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
1,2-Diphenylhydrazine
Ethylbenzene
Fluoranthene
4-Chlorophenyl phenyl ether
4-Bromophenyl phenyl ether
Bis (2-chloroisopropyl) ether
Bis (2-chloroethoxy) methane
Methylene chloride (dychloromethane)
Methyl chloride (dichloromethane)
Methyl bromide (bromomethane)
Bromoform (tribromomethane)
Dichlorobromomethane
Chlorodibromomethane
Hexachlorobutadiene
Hexachlorocyclopentadiene

Appendix 2-1 (continued)

Isophorone
Naphthalene
Nitrobenzene
2-Nitrophenol
4-Nitrophenol
2,4-Dinitrophenol
4,6-Dinitro-o-cresol
N-nitrosodimethylamine
N-nitrosodiphenylamine
N-nitrosodi-n-propulamine
Pentachlorophenol
Phenol
Bis (2-ethylhexyl) phthalate
Butyl benzyl phthalate
Di-n-butyl phthalate
Di-n-octyl phthalate
Diethyl phthalate
Dimethyl phthalate
1,2-Benzanthracene (benzo(a)anthracene)
Benzo(a)pyrene (3,4-benzopyrene)
3,4-Benzofluoranthene (benzo(b)fluoranthene)
11,12-Benzofluroanthene (benzo(k)fluoranthene)
Chrysene
Acenaphthylene
Anthracene
1,12-Benzoperylene (benzo(ghi)perylene)
Fluorene
Phenanthrene
1,2,5,6-Dibenzanthracene (dibenzo(a,h)anthracene)
Indeno(1,2,3-cd) pyrene (2,3-o-phenlene pyrene)
Pyrene
Tetrachloroethylene
Toluene
Trichloroethylene
Vinyl chloride (chloroethylene)
Aldrin
Dieldrin
Chlordane (tehnical mixture and metabolites)
4,4-DDT
4,4-DDE (p,p-DDX)
4,4-DDD (p,p-TDE)
Alpha-endosulfan
Beta-endosulfan
Endosulfan sulfate
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide (BHC-hexachloro-cyclohexane)
Alpha-BHC
Beta-BHC
Gamma-BHC
Delta-BHC
(PCB-polychlorinated biphenyls)
PCB-1242 (Arochlor 1242)

Appendix 2-1 (continued)

PCB-1254 (Arochlor 1254)
PCB-1221 (Arochlor 1221)
PCB-1232 (Arochlor 1232)
PCB-1248 (Arochlor 1248)
PCB-1260 (Arochlor 1260)
PCB-1016 (Arochlor 1016)
Toxaphene
Antimony
Arsenic
Asbestos
Beryllium
Cadmuim Chromium
Copper
Cyanide, Total
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Silver
Zinc
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)

Appendix 2-2

Operations Excepted from Electroplating Point Source Effluent Limitations

Operations similar to electroplating but which are specifically excepted include:

1. electrowinning and electrorefining conducted as part of nonferrous metal smelting and refining

2. metal surface preparation and conversion coating conducted as part of coil coating

3. metal surface preparation and immersion plating or electroless plating conducted as part of porcelain enameling

4. electrodeposition of active electrode materials, electroimpregnation, and electroforming conducted as a part of battery manufacturing

5. metallic platemaking and gravure cylinder preparation conducted with or for printing and publishing facilities, and continuous strip electroplating conducted within iron and steel manufacturing facilities which introduce pollutants into a publicly owned treatment works.

TABLE 1

If the maximum for any one day is	And the 4 day average is	Then the 30 day average is
0.6	0.4	0.3
1.2	0.7	0.5
1.9	1	.55
4.1	2.6	1.8
4.2	2.6	1.8
4.2	2.6	1.8
4.5	2.7	1.8
5.0	2.7	1.5
7.0	4	2.5
10.5	6.8	5
20.0	13.4	10
23	16	12
47	29	20
53	36	27
74	39	21
107	65	45
169	89	49
160	100	70
164	102	70
176	105	70
273	156	98
365	229	160
374	232	160
401	241	160
410	267	195
623	257	223
935	609	445

From 40 CFR 413.04

TABLE 2

All Subcategory Facilities Discharging Less than 38,000 L Per Day PSES Limitations (mg/L)

Pollutant or pollutant property	Maximum for any 1 day	Maximum average values for 4 consecutive days
CN,A	5.0	2.7
Pb	0.6	0.4
Cd	1.2	0.7

From 40 CFR 413.14(b), 413.54(b), and 413.74(b)

TABLE 3

All Subcategory Facilities Discharging 38,000 L Or More Per Day Limitations (mg/L)

Pollutant or pollutant property	Maximum for any 1 day	Maximum average values for 4 consecutive days
CN,T	1.9	1.0
Cu	4.5	2.7
Ni	4.1	2.6
Cr	7.0	4.0
Zn	4.2	2.6
Pb	0.6	0.4
Cd	1.2	0.7
Total metals	10.5	6.8

From 40 CFR 413.14(c), 413.54(c), and 413.74(c)

TABLE 4

All Subcategory Facilities Discharging 38,000 L Or More Per Day PSES Limitations (mg/L)

Pollutant or pollutant property	Maximum for any 1 day	Maximum average values for 4 consecutive days
CN,T	1.9	1.0
Pb	0.6	0.4
Cd	1.2	0.7
TSS	20.0	13.4
pH	([1])	([1])

([1])Within the range 7.5 to 10.0
From 40 CFR 413.14(e), 413.54(e), and 413.74(e)

Appendix 2-3

Metal Finishing Point Sources

Process Operations with Point Source Effluent Limitations
Nonferrous metal smelting and refining
Coil coating
Porcelain enameling
Battery manufacturing
Iron and steel
Metal casting foundries
Aluminum forming
Copper forming
Plastic molding and forming
Nonferrous forming
Electrical and electronic components

TABLE 1
BAT and BPT Effluent Limittations

Pollutant or pollutant property	Maximum for any 1 day	Maximum monthly average
	mg/L	
Cadmium (T)	0.69	0.26
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	.....

From 40 CFR 433.13(a), 433.14(a) and 40 CFR 433.14(a)

TABLE 2
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum monthly average
	mg/L	
Cadmium (T)	0.11	0.07
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	.....
Oil and Grease	52.00	26.00
TSS	60.00	31.00
pH	[1]	[1]

[1] Within 6.0 - 9.0 From 40 CFR 433.16(a)

TABLE 3
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum monthly average
	mg/L	
Cadmium (T)	0.11	0.07
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	.....

From 40 CFR 433.17(a)

Appendix 2-4

TABLE 1
Effluent Standards for Hospitals

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Maximum average values for 30 consecutive days
	Metric units (kg/1000 occupied beds)	
BOD5	41.0	33.6
TSS	55.6	33.8
pH	(1)	(1)
	English units (pounds per 1,000 occupied beds)	
BOD5	90.4	74.0
TSS	122.4	74.5
pH	(1)	(1)

[1] Within the range 6.0-9.0
From 40 CFR 460.10

TABLE 2
Effluent Limitations for Photographic Point Sources

Effluent characteristic	Effluent limitations	
	Maximum for any 1 day	Maximum average values for 30 consecutive days
	Metric units (kg/1000 m^2 of product)	
Ag	0.14	0.07
CN	0.18	0.09
pH	(1)	(1)
	English units (lb/1000 sq ft of product)	
Ag	0.030	0.015
CN	0.038	0.019
pH	(1)	(1)

[1] Within the range 6.0-9.0
From 40 CFR 459.12

Appendix 2-5

Relevant Dates For the Sewage Sludge Program

Publication of Part 503 at 58 FR 9248	19 February 1993
Publication of amendments to Sewage Sludge Permit Program regulations at 58 FR 9404	19 February 1993
Effective date of Part 503	22 March 1993
Requirements for monitoring and recordkeeping under Part 503 become effective (except for THC)	20 July 1993
Permit applications due from facilities required to have (or requesting) site-specific limits	18 August 1993
Compliance date for Part 503 requirements other than monitoring, recordkeeping and reporting (where construction is not required)	19 February 1993
Requirements for monitoring, recordkeeping and reporting for THC under Part 503 become effective (where construction is not required)	19 February 1993
Requirements for reporting under Part 503 become effective	19 February 1993
Limited permit application information due from sludge-only facilities (not needing site-specific limits)	19 February 1993
Date for closure of active sewer sludge units 1) located within 60 m of a fault that have displacement in Holocene time (unless authorized by the permitting authority); 2) located in a wetland (unless authorized under an NPDES permit); or 3) located in an unstable area	22 March 1993
Compliance date for Part 503 requirements other than monitoring, recordkeeping and reporting (where construction is required)	19 February 1993

Requirements for monitoring, recordkeeping and reporting for THC under Part 503 become effective (where construction is required)	19 February 1993
Date when active sewer sludge unit owners/operators must submit closure plans	180 days prior to the date the unit closes
Permit application information due from facilities with NPDES permits(not needing site-specific limits)	At the time of the next NPDES permit renewal
Permit application information due from facilities who commence operation after 19 February 1993	180 days prior to the date proposed for commencing operation

Appendix 2-6

Cumulative Pollutant Loading Rates for Sludge (40 CFR 503.13(b)(2))

Pollutant	Cumulative Pollutant Loading Rate (kg/hectare)
Arsenic	41
Cadmium	39
Chromium	3000
Copper	1500
Lead	300
Mercury	17
Molybdenum	18
Nickel	420
Selenium	100
Zinc	2600

Appendix 2-7

Ceiling Concentrations for Sludge (40 CFR 503.13(b)(1))

Pollutant	Ceiling Concentration (mg/kg, dry weight basis)
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	640
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

Appendix 2-8

Pollutant Concentrations for Sludge (40 CFR 503.13(b)(3))

Pollutant	Monthly Average Concentrations (mg/kg, dry weight basis)
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	18
Nickel	420
Selenium	36
Zinc	2800

Appendix 2-9

Annual Pollutant Loading Rates
(40 CFR 503.13(b)(3))

Pollutant	Annual Pollutant Loading Rates (kg/hectare per 365 day period)
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	18
Nickel	420
Selenium	36
Zinc	2800

Appendix 2-10

Frequency of Monitoring - Land Application, Surface Disposal, and Incineration (40 CFR 503.16, Table 1, 503.26, Table 1, 503.46, Table 1)

Amount of Sewage sludge* (metric tons per 365 day period)	Frequency
Greater than zero but less than 290	Once per year
Equal to or greater than 290 but less than 1500	Once per quarter (four times per year)
Equal to or greater than 1500 but less than 15,000	Once per 60 days (six times per year)
Equal to or greater than 15,000	Once per month

* **Either the amount of bulk sewage sludge applied to the land or the amount of sewage sludge received by a person who prepares sewage sludge that is sold or given away in a bag or other container for application to the land (dry weight basis).**

Appendix 2-11

Pollutant Concentrations for An Active Sewage Sludge Unit (40 CFR 503.23, Table 2)

Unit Boundary to property site	Pollutant Concentration [1]		
Distance (meters)	Arsenic mg/kg	Chromium mg/kg	Nickel mg/kg
0 to less than 25	30	200	210
25 to less than 50	34	220	240
50 to less than 75	39	260	270
75 to less than 100	46	300	320
100 to less than 125	53	360	390
125 to less than 150	62	450	420

[1] Dry weight basis

Appendix 2-12

Lead Concentration in Sewage Sludge Fed to an Incinerator (40 CFR 503.43)

Formula 1

$$C = \frac{0.1*NAAQS*86{,}400}{DF*(1 - CE)*SF}$$

Where:

C = Daily concentration of lead in sewage sludge in mg/kg of total solids (dry weight basis).
NAAQS = National Ambient Air Quality Standard for lead in $\mu g/m^3$.
DF = Dispersion factor in $\mu g/m^3/g/s$
CE = Sewage sludge incinerator control efficiency for lead in hundredths.
SF = Sewage sludge feed rate in metric tons per day (dry weight basis).

Formula 2

$$C = \frac{RSC*86{,}400}{DF*(1 - CE)*SF}$$

Where:

C = Daily concentration of arsenic, cadmium, chromium, or nickel in sewage sludge in mg/kg of total solids (dry weight basis).
CE = Sewage sludge incinerator control efficiency for arsenic, cadmium, chromium, or nickel in hundredths.
DF = Dispersion factor in $\mu g/m^3/g/s$
RSC = Risk specific concentration in $\mu g/m^3$.
F = Sewage sludge feed rate in metric tons per day (dry weight basis).

Appendix 2-13

Total Hydrocarbon Operational Standards
(40 CFR 503.44)

Formula 1

$$\text{Correction factor (percent moisture)} = \frac{1}{(1 - X)}$$

Where:

X = decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundredths.

Formula 2

$$\text{Correction factor (oxygen)} = \frac{14}{(21 - Y)}$$

Where:

Y = Percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume).

INSTALLATION:	COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (9) Chief of Operations and Maintenance (O&M) (13) Engineering, Plans, and Services (EP&S) (14) Wastewater Treatment Plant Supervisor (O&M) (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (18) TSDF Operators (DEH,DOL,DRMO) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate

Section 3

SAFE DRINKING WATER ACT (SDWA)

SECTION 3

SAFE DRINKING WATER ACT (SDWA)

A. Applicability of this Protocol

This protocol identifies rules, regulations, and requirements for any U.S. Army installation that has jurisdiction over any public water supply system. A public water system is defined as a system for providing piped water to the public 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:

- any collection, treatment, storage, and distribution facilities under control of the operator of such system, and
- any collection or pretreatment storage facilities not under such control that are used primarily in connection with such system.

A public water system is either a "community water system" or a "noncommunity water system" (40 Code of Federal Regulations (CFR) 141.2).

- Army installations that meet all the criteria listed below are not required to comply with the requirements of the SDWA since, by definition, they are not "public water systems" (40 CFR 141.3).

1. System consists only of distribution and storage facilities and does not have any collection and treatment facilities.

2. Installation gets all of its water from a public water system that is owned or operated by another party (non-Army).

3. Installation does not sell water to any party.

Even though the above criteria may apply to an Army installation, as a practical matter, Army regulations require compliance with drinking water standards and monitoring requirements. Therefore, this protocol should be used to determine compliance with drinking water requirements even though some items may be noted as not applicable (N/A) by the evaluator.

B. Federal Legislation

- *The Safe Drinking Water Act (SDWA).* This Act, as amended, Public Law (PL) 99-339, 42 U.S. Code (USC) 201, 300f--300j-25, 6939b, 6979a, 6979b, 7401--

742, etc., is the Federal legislation which regulates the safety of drinking water in the country. The sections that follow will selectively list the major terms defined in this Act, and summarize the key requirements to be observed by all agencies and organizations of the Federal Government.

Each department, agency, and instrument of the executive, legislative, and judicial branches of the Federal Government having jurisdiction over any potential source of contaminants identified by a state program must be subject to and observe all requirements of the state program applicable to such potential source or contaminants, both substantive and procedural, in the same manner, and to the same extent, as any other person, including payment of reasonable charges and fees (42 USC 300h-7(h)).

If a Federal agency has jurisdiction over any Federally owned or maintained public water system, or is engaged in any activity resulting, or which may result in, underground water injection which endangers drinking water, it is subject to, and must observe, any Federal, state, and local regulations, administrative authorities, and process and sanctions respecting the provision of safe drinking water and respecting any underground injection program in the same manner, and to the same extent, as any nongovernmental entity. This requirement applies 1. to any rules substantive or procedural (including any record -keeping or reporting, permits, and other requirements), 2. to the exercise of any Federal, state, or local authorities, and 3. to any process or sanction, whether enforced in Federal, state, or local courts or in any other manner (42 USC 300j-6(a)).

National primary drinking water regulations apply to each public water system in each state. However, such regulations do not apply to a public water system 1. which consists only of distribution and storage facilities (and does not have any collection and treatment facilities); 2. which obtains all its water from, but is not owned or operated by, a public water system to which such regulations apply; 3. which does not sell water to any person; and 4. which is not a carrier which conveys passengers in interstate commerce (42 USC 300g).

C. State/Local Requirements

- States have primary responsibility ("primacy") to enforce compliance with national primary drinking water standards and sampling, monitoring, and notice requirements in conformance with 40 CFR 141. The U.S. Environmental Protection Agency (USEPA) executes the enforcement responsibilities until individual state programs are approved.

- States that have primacy may establish drinking water regulations, monitoring schedules, and reporting requirements more stringent than, or in addition to, those in the Federal regulations. It is very important to remember that Army public water systems in these states are required to comply with these additional requirements. The standards identified in the questions of this section are minimum, Federal requirements. Generally speaking, most states that have primacy adopt drinking water regulations that closely reflect the Federal requirements. Almost all states have achieved authorization from USEPA to administer drinking water compliance programs including Underground Injection Control (UIC) programs.

D. Department of Defense (DOD) Regulations

- DOD Directive 6230.1, *Safe Drinking Water*, of 24 April 1978, sets forth DOD policy for provisions of adequate safe drinking water and compliance with the SDWA and the standards established by 40 CFR 141.

E. U.S. Army Regulations (ARs)

- AR 40-5, *Preventive Medicine*, establishes practical measures for the preservation and promotion of health and the prevention of disease and injury. Among other things, it explains the Army Preventive Medicine Program, establishes military occupational and environmental health standards, and provides a basic guide for commanders, the installation medical authorities (IMAs), and other interested persons and agencies.

- AR 200-1, *Environmental Protection and Enhancement*, mandates Army compliance with SDWA.

- AR 420-46, *Water and Sewage*, establishes policies and procedures governing installations that supply water and dispose of sewage and industrial wastes. It applies to all Department of the Army (DA) installations. In general, it addresses the following facilities engineering activities: the furnishing of sewage services; operations of water and sewage pumping and treatment plants; the maintenance, repair, and alteration of facilities and appurtenances required for the production, pumping, treatment, and distribution of water; and the collection and disposal of sewage and industrial waste.

- AR 700-136, *Land Based Water Resources Management in Contingency Operations*, sets policy and procedures for water resources management in support of contingency operations. It defines the Army role in joint contingency opera-

tions and outlines responsibilities for water support. This regulation does not apply to fixed installation water support operations or civil works emergency water management.

F. Key Compliance Requirements

- National Primary Drinking Water Standards - Contaminant limitations, monitoring requirements, and enforcement procedures are contained in the National Drinking Water Standards, 40 CFR 141.

- Sampling and Analysis - Sampling and analytical requirements for public water systems are also promulgated in 40 CFR 141 or in applicable state regulations. Initial sampling to characterize each specified contaminant (and any required subsequent sampling) shall be conducted within required time frames and at the frequencies specified. Sample analyses shall be performed in laboratories certified by USEPA or approved by the state.

- Reporting and Recordkeeping - Results of tests, analyses, and measurements required for compliance shall be forwarded within prescribed times to appropriate USEPA regional offices or approved state agencies, as applicable. Records of bacteriological analyses shall be retained for 5 years (yr); chemical/ physical analyses, for 10 yr.

- Noncompliance Monitoring and Reporting - Installations operating public water systems shall report to USEPA regional offices or the approved state any instances of noncompliance with primary drinking water standards, variances, or exemptions, including failure to comply with sampling/monitoring requirements. Noncompliance conditions shall also be reported to all persons served by the public water system. The timing and means for all notifications shall be as prescribed in 40 CFR 141 or applicable state/ local regulations.

- Operating Out of Compliance - Variances (and exemptions) may be granted by USEPA or approved by the states subject to public notice and hearing requirements to enable noncomplying public water systems to continue operating. Variances (and exemptions) must include schedules and methods for attaining compliance.

- Water System Operator Certification - Army water system operators shall meet operator certification requirements of the state in which the system is located. Job descriptions for new or vacant Army water system operator positions shall require a state certification or license as a condition of employment at all facilities where state certification requirements are applicable.

G. Responsibility for Compliance

- Preventive Medicine Office (PMO) is responsible for proper sample collection from drinking water systems at Army installations and determining compliance with drinking water standards. Coordination with the Occupational and Environmental Health Laboratory (OEHL), interpretation of results of water analyses, and notifications to state regulatory authorities when maximum contaminant levels are exceeded are also the responsibilities of the PMO. If there is no PMO these responsibilities may fall to the installation medical authority (i.e., a clinic).

- The Directorate of Engineering and Housing (DEH) designs, constructs, and operates the water distribution system to provide sufficient drinking water to installation personnel. The DEH is responsible for providing adequate water treatment to assure 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 responsibility of the DEH. It also maintains an up-to-date map of the complete potable water system, makes repairs, and maintains the system. The DEH is also responsible for negotiating and maintaining the installation's water supply contract.

H. Key Compliance Definitions

These definitions were obtained from the Federal, DOD, and U.S. ARs cited previously, and from 40 CFR 141, 142, and the SDWA and its amendments.

- *Action Level* - the concentration of lead or copper in the water specified in 40 CFR 141.80(c) which determines, in some cases, the treatment requirements that a water system is required to complete (40 CFR 141.2).

- *Best Available Technology (BAT)* - the best technology treatment techniques, or other means which the administrator finds, examined for efficacy under field conditions and not solely under lab conditions that are available (taking cost into consideration). For the purposes of setting Maximum Contaminant Levels (MCLs) for synthetic organic chemicals, any BAT must be at least as effective as granular activated carbon (40 CFR 141.2).

- *Coagulation* - a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs (40 CFR 141.2).

- *Community Water System* - a public water system that serves at least 15 service connections used by year round residents or regularly serves at least 25 yr round residents (40 CFR 141.2).

- *Contaminant* - any physical, chemical, biological, or radiological substance or matter in water (40 CFR 141.2).

- *Conventional Filtration Treatment* - a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal (40 CFR 141.2).

- *Diatomaceous Earth Filtration* - a process resulting in substantial particulate removal in which (40 CFR 141.2):
  - a precoat cake of diatomaceous earth filter media is deposited on a support membrane (septum), and
  - while the water is filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

- *Direct Filtration* - a series of processes including coagulation and filtration but excluding sedimentation resulting in substantial particulate removal (40 CFR 141.2).

- *Disinfectant* - any oxidant, including but not limited to chlorine, chlorine dioxide, chloramines, and ozone added to water in any part of the treatment or distribution process, that is intended to kill or inactivate pathogenic microorganisms (40 CFR 141.2).

- *Disinfection* - a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents (40 CFR 141.2).

- *Domestic or Other Nondistribution System Plumbing Problem* - a coliform contamination problem in a public water system with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken (40 CFR 141.2).

- *Exempted Public Water systems* - the following are public water systems which are not required to meet the standards outlined in 40 CFR 141:
  1. systems which consist only of distribution and storage facilities and do not have any collection and treatment facilities
  2. systems that obtain all of their water from, but are not owned by or operated by, a public water system to which 40 CFR 141 applies
  3. systems that do not sell water to any person
  4. systems that are not carriers that convey passengers in interstate commerce (40 CFR 141.3).

- *Filtration* - a process for removing particulate matter from water by passage through porous media (40 CFR 141.2).

- *Flocculation* - a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means (40 CFR 141.2).

- *Good Management Practice (GMP)* - schedules of activities, prohibitions of practices, maintenance procedures, and other management procedures, to prevent or reduce the pollution of "water of the United States." GMPs also include the treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

- *Gross Alpha Particle Activity* - the total radioactivity due to alpha particle emissions as inferred from measurements on a dry sample (40 CFR 141.2).

- *Groundwater Under the Direct Influence of Surface Water* - refers to any water beneath the surface of the ground with:

  - significant occurrence of insects or other macro-organisms, algae, or large-diameter pathogens such as *Giardia lamblia*, or
  - significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions.

  Direct influence must be determined for individual sources in accordance with criteria established by the state (40 CFR 141.2).

- *Halogen* - one of the chemical elements chlorine, bromine, or iodine (40 CFR 141.2).

- *Initial Compliance Period* - the first full 3 yr compliance period which begins at least 18 months (mo) after promulgation, except for Dichloromethane, 1,2,4-Trichlorobenzene, 1,1,2-Trichloroethane, Benmzo(a)pyrene, Delapon, Di(2-ethythexyl) adipate, Di(2-ethythexyl) phthalate, Dinoseb, Diquat, Endrin, Endothall, Glyphosate, Hexachlorobenzene, Hexachlorocyclopentadiene, Oxamyl (Vydate), Picloram, Simazine, 2,3,7,8,-TCDD (Dioxin), Antimony, Beryllium, Cyanide (as free Cyanide), Nickel, and Thallium, initial compliance period means the first full 3 yr compliance period after promulgation for systems with 150 or more service connections (January 1993 - December 1995, and first full 3 yr compliance period after the effective date of the regulation (January 1996 - December 1998) for systems having fewer than 150 service connections (40 CFR 141.2).

- *Large Water System* - in reference to lead and copper in systems, this refers to a water system that serves more than 50,000 persons (40 CFR 141.2).

- *Lead Service Line* - a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck, or other fitting which is connected to such a lead line (40 CFR 141.2).

- *Legionella* - means a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease (40 CFR 141.2).

- *Maximum Contaminant Level (MCL)* - the maximum permissible level of a contaminant in water that is delivered to any user of a public water system (40 CFR 141.2).

- *Maximum Contaminant Level Goal (MCLG)* - refers to the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MCL goals are nonenforceable health goals (40 CFR 141.2).

- *Maximum Total Trihalomethane Potential* - means the maximum concentration of total trihalomethanes produced in a given water sample containing a disinfectant residual after 7 days at a temperature of 25 degrees Celsius (^{o}C) or above (40 CFR 141.2).

- *Medium Size Water System* - in reference to lead and copper in systems, this refers to a water system that serves greater than 3300 and less than or equal to 50,000 persons (40 CFR 141.2).

- *Near the First Service Connection* - means at 1 of the 20 percent of all service connections in the entire system that are nearest the water supply treatment facility, as measured by water transport time within the distribution system (40 CFR 141.2).

- *Noncommunity Water System* - a public water system that is not a community water system (40 CFR 141.2).

- *Nontransient, Noncommunity 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 over 6 mo/yr (40 CFR 141.2).

- *Person* - an individual, corporation, company, association, partnership, municipality, or state, Federal, or tribal agency (40 CFR 141.2).

- *PicoCurie (pCi)* - quantity of radioactive material producing 2.22 nuclear transformations/ minute (min) (40 CFR 141.2).

- *Point of Disinfectant Application* - the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff (40 CFR 141.2).

- *Point-of-Entry Treatment Device* - a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building (40 CFR 141.2).

- *Point-of-Use Treatment Device* - a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap (40 CFR 141.2).

- *Public Water System* - a system for providing piped water to the public 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:
  - any collection, treatment, storage, and distribution facilities under control of the operator of such system
  - any collection or pretreatment storage facilities not under such control that are used primarily in connection with such system.

  A public water system is either a "community water system" or a "noncommunity water system" (40 CFR 141.2).

- *Rem* - the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A millirem (mrem) is 1/1000 of a rem (40 CFR 141.2).

- *Residual Disinfectant Concentration* - ("C" in CT calculations) is the concentration of disinfectant measured in mg/liter (L) in a representative sample of water (40 CFR 141.2).

- *Sanitary Survey* - an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water (40 CFR 141.2).

- *Sedimentation* - a process for removal of solids before filtration by gravity or separation (40 CFR 141.2).

- *Slow Sand Filtration* - a process involving passage of raw water through a bed of sand at low velocity (generally less than 0.4 meters (m)/h) resulting in substantial particulate removal by physical and biological mechanisms (40 CFR 141.2).

- *Standard Sample* - the aliquot of finished drinking water that is examined for the presence of coliform bacteria (40 CFR 141.2).

- *State* - the agency of the state or tribal government that has jurisdiction over public water systems. During any period when a state or tribal government does not have primary enforcement responsibility pursuant to Section 1413 of the Act (42 USC 300g-2), the term "state" means the Regional Administrator of the USEPA (40 CFR 141.2).

- *Supplier of Water* - any person who owns or operates a public water system (40 CFR 141.2).

- *Surface Water* - all water that is open to the atmosphere and subject to surface runoff (40 CFR 141.2).

- *System with a Single Service Connection* - a system which supplies drinking water to consumers via a single service line (40 CFR 141.2).

- *Total Trihalomethanes (TTHM)* - the sum of the concentration in milligrams per liter of the trihalomethane compounds rounded to two significant figures (40 CFR 141.2).

- *Trihalomethane (THM)* - one of the family of organic compounds, named as derivatives of methane, wherein three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure (40 CFR 141.2).

- *Virus* - means a virus of fecal origin which is infectious to humans by waterborne transmission (40 CFR 141.2).

- *Waterborne Disease Outbreak* - the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment, as determined by the appropriate local or state agency (40 CFR 141.2).

SAFE DRINKING WATER ACT (SDWA)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All installations	3-1 through 3-11	(1)(2)(9)
If the installation tests drinking water	3-12 through 3-14	(3)(9)
If the installation monitors/samples drinking water	3-15 through 3-34	(1)(2)(3)(9)
If the installation provides filtration/ disinfectant treatment	3-35 through 3-42	(2)(3)(9)
Reporting requirements	3-43 through 3-46	(2)
If the installation has lead and/or copper in drinking water	3-47 through 3-59	(1)(2)(3)(9)
If the installation is located near a sole source aquifer	3-60	(1)(2)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(3) Preventive Medicine Officer
(9) Chief of Operations and Maintenance (O&M)

SAFE DRINKING WATER ACT (SDWA)

Plans and Maps to Review

- Sanitary surveys of the water system conducted by the facility, a private consultant, or any local, state, or Federal agency
- Design plans for potable water treatment plant

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.)
- State and public notification of noncompliance with primary drinking water regulations
- Action taken by the facility to correct violations of primary drinking water regulations
- Public notification of noncompliance with secondary MCL for fluoride
- Variance or exemption granted to the facility for its water supply system
- Permit authorizing the operation of an underground injection well
- Records of planning and construction of injection wells
- Results of injection well monitoring
- Records, including any petition for review, of facility projects that may potentially cause contamination of a sole source aquifer through its recharge zone
- Name and phone number of operator of drinking water plant
- Lab operator's water quality
- Potable water wells data
- Permits
- Waivers from the state

Physical Features to Examine

- Drinking water collection, treatment, and distribution facilities
- Onsite laboratory analysis facilities
- Swimming pools
- Underground injection wells

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Preventive Medicine Officer
- Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
3-1. Determine actions or changes since previous review of drinking water (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)(2)
...	...
3-2. The installation should maintain a current file of applicable Federal, DOD, U.S. Army and state regulations on drinking water (GMP).	Verify that the following, which are applicable, are current and readily available: (1)(2) - 40 CFR 141, *National Primary Drinking Water Regulations.* - 40 CFR 149, *Sole Source Aquifers.* - EO 12088, *Federal Compliance with Pollution Standards.* - DOD Directive 6230.1, *Safe Drinking Water.* - AR 40-5, *Preventive Medicine.* - AR 200-1, *Environmental Protection and Enhancement.* - AR 420-46, *Water and Sewage.* - TM 5-660, *Maintenance and Operation of Water Supply, Treatment, and Distributions Systems.* - TB MED 575, *Occupational and Environmental Health: Swimming Pools and Bathing Facilities.* - Appropriate state and local regulations. Check contract for purchase of water to determine compliance with conditions contained in contract (i.e., quality, quantity, connections, etc.). (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-3. Installations are required to comply with applicable state, regional, and local requirements (EO 12088, Section 1-1, SDWA, and 42 USC 300h-7(h)).	Verify the installation is abiding by Federal, state, regional, and local requirements. (1) Verify the installation is operating according to permits issued by state or local agencies. (1)(2) (NOTE: Issues which are typically regulated by state and local agencies include: - more stringent contaminant level requirements - certification and training requirements - water system surveys - reporting requirements - monitoring frequency - use of groundwater - use and maintenance of wells - wellhead protection programs - cross connection control and backflow prevention - O&M practices, such as: maintenance of a disinfectant residual throughout the distribution system; proper maintenance of the distribution system; proper disinfection of replaced or repaired mains; main flushing programs; proper operation and maintenance of storage tanks and reservoirs; and continual maintenance of positive water pressure - *UIC programs.)*
...	...
3-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2) Verify that the existing system addresses the issues associated with the *SDWA* by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual, and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning the SDWA have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the regulatory requirement and the basis of finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...
3-6. DEH must keep records of actions taken to correct or repair any part of the distribution system (AR 420-46, para 11-1).	Determine if there have been any changes to water system since the previous review and review the map of complete potable water system. (9) Verify that water system records pertaining to operational changes have been maintained for at least 3 yr. (2)(9)
...	...
3-7. The installation is required to prepare and keep current water supply distribution system, sectional, and valve-location maps (AR 420-46, para 5c).	Verify that water supply distribution system, sectional, and valve location maps are kept current. (1)(9) Verify that each pumping station has a piping diagram identifying each valve and pump together with operating procedures posted. (9)
...	...
3-8. Installations are required to have a standard operating procedure (SOP) for alerting personnel in national or local emergencies or times of actual or anticipated noncompliance (AR 420-46, para 5d).	Verify that a standing operating procedure is in place and that it defines the duty of each individual. (1)(9) Verify that the standing operating procedure is current. (1)(9)
...	...
3-9. The Environmental Coordinator (EC) should review plans for water system modifications (GMP).	Determine if the EC has reviewed the plans. (1)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-10. Installations are required to survey public water systems according to a specified schedule and maintain records of those reviews (40 CFR 141.21(d) and 141.33(c)).	Verify that community water systems which do not collect 5 or more routine bacteriological samples per month have undergone an initial sanitary survey by 29 June 1994 and are then surveyed every 5 yr thereafter. (1)(9) Verify that noncommunity water systems which do not collect 5 or more routine bacteriological samples per month have undergone an initial sanitary survey by 29 June 1999 and are then surveyed every 5 yr thereafter. (1)(9) (NOTE: Noncommunity water systems using only protected and disinfected groundwater are only required to conduct a survey every 10 yr after the initial survey.) Verify that records of sanitary system surveys are kept for 10 yr. (1)(9) Verify that the results of the sanitary surveys have been submitted to the state and determine whether the state has requested an alternate monitoring frequency. (1)(9)
...	...
3-11. All water systems will install and operate optimal corrosion control treatment and/or comply with corrosion control requirements specified by the state (40 CFR 141.80(d)).	Verify that water systems are operating corrosion control systems and/or meeting state requirements. (2)(9)
...	...
DRINKING WATER STANDARDS	
3-12. Community water systems, except as defined under "exempted water systems" in the Definitions, are required to meet specific maximum contaminant levels (MCLs) for inorganic and organic chemicals, fluorides, radium 226, radium 228, gross alpha particle radioactivity, beta particles and photon radioactivity from man-made radionuclides (40 CFR 141.11(a) through 141.11(c), 141.12, 141.15 and 141.16(a)).	Verify that combined radium-226 and radium-228 do not exceed 5 pCi/L. (3)(9) Verify that gross alpha particle radioactivity does not exceed 15 pCi/L. (3)(9) Verify that the average annual concentration of beta particles and photon radioactivity from manmade radionuclides does not produce an average dose rate equal to the total body or any internal organ greater than 4 millirems/yr. (3)(9) Verify that the MCL of 4.0 mg/L for fluoride is not exceeded. (3)(9) Verify that the MCLs outlined in Appendix 3-1 and Appendix 3-2 are met. (3)(9)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-13. Noncommunity water systems, except as defined under "exempted water systems," will not exceed a MCL for nitrate of 10 mg/L (40 CFR 141.11(a)).	Verify that the nitrate level at noncommunity water systems does not exceed 10 mg/L. (3)(9)
...	...
3-14. Community and nontransient, noncommunity water systems, except as defined under "exempted water systems," are required to meet specific MCLs for organic contaminants, inorganic contaminants and microbiological contaminants (40 CFR 141.60 through 141.63).	Verify that the standards outlined in Appendix 3-1 and Appendix 3-2 are met. (3)(9) Verify that systems which collect at least 40 bacteriological samples per month have no more than 5 percent of the samples collected during a month that are total coliform positive. (3)(9) Verify that systems which collect less than 40 bacteriological samples per mo have no more than 1 sample collected per month that is total coliform positive. (3)(9) Verify that there are no fecal coliform-positive repeat sampling or E. Coli-positive repeat samples, or any total coliform-positive repeat samples following a fecal coliform-positive or E. Coli-positive routine sample. (3)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
MONITORING/ SAMPLING OF DRINKING WATER **3-15.** Installations with community water systems and/or nontransient, non-community water systems are required to meet specific monitoring requirements for inorganic contaminants (40 CFR 141.23(a)).	Verify that groundwater systems: (3)(9) - take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment beginning in the compliance period starting 1 January 1993 - takes each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant. Verify that surface water systems: (3)(9) - take a minimum of one sample 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 beginning in the compliance period starting 1 January 1993 - take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment. (NOTE: In relation to these requirements, surface water systems include systems with a combination of surface and ground sources.) Verify that if the system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions. (3)(9) (NOTE: The state may reduce the total number of samples which must be analyzed by allowing the use of compositing. Composite samples from a maximum of five sampling points are allowed if the detection limit of the method used for analysis is less than one-fifth of the MCL and compositing is done in a laboratory.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-15. (continued)	Verify that if the concentration in a composite sample is greater than or equal to one-fifth of the MCL of any inorganic chemical, a follow-up sample is analyzed within 14 days from each sampling point included in the composite and analyzed for the contaminants which exceeded one-fifth of the MCL in the composite sample (3)(9) (NOTE: Detection limits for each analytical method and MCLs for each inorganic contaminant are listed in Appendix 3-3.) Verify that for groundwater systems, inorganic monitoring is repeated at least once every compliance period (every 3 yr), and samples are taken quarterly for at least two quarters if a MCL is violated. (3)(9) Verify that for surface water systems, inorganic sampling is repeated annually and samples are taken quarterly for at least four quarters if a MCL is violated. (3)(9) (NOTE: The state may issue a waiver reducing the required monitoring.)
...	...
3-16. Installations with community and nontransient, *noncommunity* water systems are required to meet specific monitoring requirements for asbestos (40 CFR 141.23(b)).	Verify that asbestos is monitored during the first 3-yr compliance period of each 9-yr compliance cycle starting 1 January 1993. (3)(9) (NOTE: The installation may apply to the state for a waiver of monitoring if they believe that asbestos is not an issue.) Verify that if the system is vulnerable to asbestos contamination only because of corrosion of asbestos-cement pipe, one sample is taken at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur. (3)(9) Verify that if the system is vulnerable to asbestos contamination due to both its source water supply and corrosion of asbestos-cement pipe, one sample is taken at a tap served by asbestos-cement pipe and under conditions where asbestos is most likely to occur. (3)(9) Verify that when the maximum contaminant level is exceeded, monitoring is done quarterly. (3)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-17. Installations with community water systems and/or nontransient, non-community water systems are required to meet specific monitoring requirements for antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, selenium, and thallium (40 CFR 141.23 (c)). ...	Verify that monitoring is done as follows: (3)(9) - groundwater systems take one sample at each sampling point every 3 yr - surface water systems (or combined surface/ground) take one sample annually at each sampling point - when MCLs are exceeded, monitoring is done quarterly. ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-18. All public water systems are required to conduct monitoring to determine compliance for nitrate and nitrite levels according to specific parameters (40 CFR 141.23(d), 141.23(e), and 141.23(f)(2)).	Verify that the following schedules are met for monitoring of nitrate: (3)(9) - community and nontransient, noncommunity water systems served by groundwater monitor annually starting 1 January 1993 - community and nontransient, noncommunity water systems served by surface water monitor quarterly starting 1 January 1993 - transient noncommunity water systems monitor annually starting 1 January 1993. Verify that when the MCL for nitrate is exceeded the following schedules are met for monitoring: (3)(9) - community and nontransient, noncommunity water systems do repeat monitoring quarterly for at least 1 yr following any one sample in which the concentration exceeds more than 50 percent of the MCL. (NOTE: After the initial round of quarterly sampling is completed, each community and nontransient noncommunity system which is monitoring annually shall take the subsequent samples during the quarters which previously resulted in the highest analytical result.) Verify that public water systems take one sample at each sampling point in the compliance period beginning 1 January 1993 and ending 31 December 1995 for nitrite. (3)(9) (NOTE: After the initial sample, systems where an analytical result for nitrite is less than 50 percent of the MCL will monitor at the frequency specified by the state.) Verify that community, nontransient, noncommunity and transient non-community systems repeat monitoring for nitrites quarterly for at least 1 yr after any one sample is greater than 50 percent of the MCL. (3)(9) Verify that systems which are monitoring annually for nitrites take each subsequent sample during the quarters which previously resulted in the highest analytical result. (3)(9) Verify that when nitrate or nitrite samples indicate an exceedance of the MCL, a confirmation sample is taken within 24 h of receipt of the results. (3)(9) (NOTE: If the system is unable to take a confirmation sample within 24 h, it must notify consumers of the exceedance.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-19. Monitoring for endrin is required to be done according to specific schedules (40 CFR 141.24(a) through 141.24 (d)).	Verify that community water systems using surface water [illegible] have completed endrin analyses by 30 July 1993. (3)(9) (NOTE: For community water systems, samples will be taken during the time of the year designated by the state as most likely for pesticide contamination and the analyses repeated at intervals specified by the state but no less frequently than every 3 yr.) Verify that when the MCL is exceeded the state is notified within 7 days and three additional analyses are initiated within 1 mo. (3)(9) Verify that when an average of four analyses exceeds the MCL level the installation must report to the state and give notice to the public and continue to monitor at a frequency designated by the state. (3)(9) (NOTE: Instead of the initial analyses, data for surface water acquired within 1 yr prior to 30 July 1992 and data for groundwater acquired within 3 yr of 30 July 1992 may be substituted at the discretion of the state.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-20. Beginning with the initial compliance period, monitoring of the contaminants listed in Table 2 of Appendix 3-1 at community and nontransient, noncommunity water systems is required to be done according to specific parameters (40 CFR 141.24(f)).	Verify that groundwater systems take a minimum of one sample at every entry point of the distribution system which is representative of each well after treatment. (3)(9) Verify that surface water systems (or combined surface/ground) take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment. (3)(9) (NOTE: For both groundwater and surface water systems, each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.) Verify that if the system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions. (3)(9) Verify that each community and nontransient, noncommunity water system takes 4 consecutive quarterly samples for each contaminant, except vinyl chlorides. (3)(9) (NOTE: If the initial monitoring for contaminants is completed by December 1992 and none of the contaminants listed are found, then each system shall take one sample annually starting with the initial compliance period.) (NOTE: After a minimum of 3 yr of sampling, the state may reduce the number of samples to one each compliance period.) Verify that if a contaminant, except vinyl chloride, is detected at a level exceeding 0.0005 *mg/L* in any sample, the system monitors quarterly at each sampling point which resulted in a detection. (3)(9) Verify that groundwater systems which have detected one or more of the following two-carbon organic compounds: trichlorethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene, monitor quarterly for vinyl chlorides at each sampling point at which one or more of the two-carbon organic compounds was detected. (3)(9) Verify that when the MCLs are exceeded, monitoring is conducted quarterly until the state determines that the system is reliably and consistently below the MCL. (3)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-21. Monitoring for organic contaminants listed in Table 3 of Appendix 3.1 at community water systems and nontransient, noncommunity water systems is required to be done according to specific parameters (40 CFR 141.24(h))	Verify that groundwater systems take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment. (3)(9) Verify that surface water systems (or surface/ground) take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment. (3)(9) (NOTE: For both groundwater and surface water systems, each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.) Verify that if the system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions. (3)(9) Verify that each community and nontransient, noncommunity water system takes four consecutive quarterly samples for each contaminant during each compliance period starting 1 January 1993. (3)(9) (NOTE: Systems serving more than 3300 persons which do not detect a contaminant in the initial compliance period may reduce sampling to two quarterly samples in 1 yr during each repeat compliance period.) (NOTE: Systems serving less than or equal to 3300 person that do not detect a contaminant in the initial compliance period may reduce sampling to one sample during each repeat compliance period.) Verify that when an organic contaminant is detected (see Appendix 3-4), the system monitors quarterly at each sampling point that resulted in a detection. (3)(9) Verify that if monitoring results in detection of one or more of aldicarb, aldicarb sulfone, aldicarb sulfoxide, and heptchlor, heptchlor epoxide, than subsequent monitoring analyzes must be done for all related contaminants. (3)(9) (NOTE: The state may reduce the number of samples required and/or the frequency of sampling.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-22. Community and nontransient, noncommunity water systems are required to monitor for specific organic and inorganic contaminants (40 CFR 141.35 and 141.40 (a) through 141.40(m)).	Verify that monitoring is being done for the following contaminants: chloroform; bromodichloromethane; bromoform; chlorodibromomethane; chlorobenzene; m-dichlorobenzene; 1,1-dichloropropene; 1,1-dichloroethane; 1,1,2,2-tetrachloroethane; 1,3-dichloropropane; chloromethane; bromomethane; 1,2,3-trichloropropane; 1,1,1,2-tetrachloroethane; chloroethane; 2,2,-dichloropropane; o-chlorotoluene; p-chlorotoluene; bromobenzene; 1,3-dichloropropene. (3)(9) Verify that surface water systems sample at points in the distribution system that are representative of each water source or at entry point to the distribution system after any application of treatment. (3)(9) Verify that for surface water systems, the minimum number of samples taken is 1 yr of quarterly samples per water system. (3)(9) Verify that groundwater systems sample at points of entry to the distribution system, representative of each well after any application of treatment. (3)(9) Verify that for groundwater systems, the minimum number of samples taken is one sample taken per entry point to the distribution system. (3)(9) Verify that initial monitoring was done by the dates specified in the following, and that all community and nontransient, noncommunity water systems repeat the monitoring every 5 yr after the specified dates: (3)(9) Number of persons served — Monitoring to Begin No Later Than: Over 10,000 — 1 January 1988 3300 to 10,000 — 1 January 1989 less than 3300 — 1 January 1991 (NOTE: Public water systems may use monitoring data collected any time after 1 January 1983 to meet the requirements for unregulated monitoring, provided the monitoring program was consistent with these requirements. Additionally the results of the USEPA's Groundwater Supply Survey may be used in a similar manner for systems supplied by a single well.) (NOTE: The state may require monitoring of additional contaminants.) (NOTE: Instead of doing the monitoring required here, a community water system or nontransient, noncommunity water system serving fewer than 150 service connections may send a letter to the state by 1 January 1991 stating that the system is available for sampling.) Verify that the installation notifies the systems user's of the availability of the results of sampling. (3)(9) Verify that the installation sends copies of the monitoring results within 30 days after public notification. (3)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-23. Monitoring of specific contaminants must be completed by 31 December 1995 (40 CFR 141.35 and 141.40(n)).	Verify that the substances listed in Appendix 3-5 are monitored for by 31 December 1995. (3)(9) Verify that each community and nontransient, noncommunity water systems takes four consecutive quarterly samples for the unregulated organic contaminants listed in Appendix 3-5 at each sampling point and reports the results to the state. (3)(9) Verify that each community and nontransient, noncommunity water system takes one sample at each sampling point for the unregulated inorganic compounds listed in Appendix 3-5 and reports the results to the state. (3)(9) Verify that groundwater systems take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment and that each sample is taken from the same sampling point unless conditions make another sampling point more representative of each source or treatment. (3)(9) Verify that surface water systems, including systems with a combination of surface and ground sources, take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment and that each sample is taken from the same sampling point unless conditions make another sampling point more representative of each source or treatment. (3)(9) Verify that if the system draws water from more than one source and the sources are combined before distribution, the system samples at the entry point to the distribution system during periods of normal operating conditions. (3)(9) Verify that the installation notifies the system's users of the availability of the results of sampling. (3)(9) Verify that the installation sends copies of the monitoring results within 30 days after public notification. (3)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-24. Community water systems, except as defined as "exempted water systems," are required to monitor for total coliforms at a frequency based on the population served by the system (40 CFR 141.21 (a)(2)).	Verify that the installation's community water system is sampling according to the schedule in Appendix 3-6. (3)(9)
...	...
3-25. Noncommunity water systems, except as defined under "exempted water systems," are required to monitor for total coliforms according to a specific schedule (40 CFR 141.21(a)(3)).	Verify that noncommunity water systems using only groundwater (except groundwater under the direct influence of surface water) and serving 1000 persons or less monitors each calendar quarter the system provides water to the public. (3)(9) Verify that the following noncommunity water systems are monitoring for total coliforms according to the schedule outlined in Appendix 3-6: (3)(9) - systems using only groundwater (except groundwater under the direct influence of surface water) and serving more than 1000 persons during any month - systems using surface water, in total or in part - systems using groundwater under the direct influence of surface water.
...	...
3-26. Total coliform samples are required to be collected at regular time intervals throughout the month except at systems which use only groundwater and serve 4900 person or fewer (40 CFR 141.21(a)(4)).	Verify that total coliform samples are collected at regular intervals. (3)(9) (NOTE: Systems which use groundwater (except groundwater under the influence of surface water) and serve 4900 persons or fewer may collect all required samples on a single day if they are being taken from different sites.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-27. Public water systems that use surface water or groundwater under the direct influence of surface water that do not practice filtration are required to collect at least one total coliform sample near the first service connection each day the turbidity level of the source water exceeds 1 Nephelomtric Turbidity Unit (NTU) (40 CFR 141.21(a)(5)).	Review the records on turbidity levels and verify that when the turbidity exceeded 1 NTU, total coliform samples were taken within 24 h of the first exceedance. (3)(9)
...	...
3-28. When a routine sample is total coliform-positive, the public water system must collect a set of repeat samples within 24 h of being notified of the positive result (40 CFR 141.21(b)(1) through 141.21(b)(4) and 141.21 (e)(1)).	Verify that if more than one routine sample per month is collected, at least three repeat samples are taken for each total coliform-positive sample found. (3)(9) Verify that if one or less routine sample per month is collected, no less than four repeat samples are collected for each total coliform-positive sample found. (3)(9) Verify that at least one of the repeat samples is collected from the sampling tap where the original total coliform positive sample was taken. (3)(9) Verify that at least one repeat sample was taken at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. (3)(9) Verify that all repeat samples are collected on the same day. (3)(9) Verify that if one or more of the repeat samples is total coliform-positive, an additional set of repeat samples is collected within 24 h of notification of the positive result. (3)(9) Verify that the sampling process if repeated until either total coliforms are not detected in one complete set of repeat samples or the system determines that the MCL for total coliforms is exceeded and the state is notified. (3)(9) Verify that if a repeat sample is total coliform-positive it is also analyzed for fecal coliforms. (3)(9) (NOTE: The system may test for E. coli instead of fecal coliforms.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-29. Sampling for turbidity is required to be done at public water systems which must install filtration according to a specific schedule until the time at which the system installs filtration (40 CFR 141.22).	Verify that suppliers of water for both community and noncommunity water systems sample for turbidity at a representative entry point to the water distribution system at least once daily. (3)(9) Verify that when the turbidity levels are exceeded immediate resampling is done. (3)(9) Verify that the state is notified within 48 h if turbidity levels are exceeded. (1)(3) (NOTE: These systems must monitor for turbidity according to 40 CFR 141.73 and 141.74, see checklist item 3-36.)
...	...
3-30. Installations are required to monitor for radioactivity in community water systems (40 CFR 141.26).	Verify that compliance for standards of gross alpha particle activity, radium-226 and radium 228 is based on an annual composite of 4 consecutive samples that are obtained at quarterly intervals or the average of the analysis of 4 samples obtained at quarterly intervals. (3)(9) (NOTE: A gross alpha particle activity measurement may be substituted for the required radium-226 and radium-228 analysis if the measured gross alpha particle activity does not exceed 5 pCi/L at a confidence level of 95 percent.) Verify that when the gross alpha particle activity exceeds 5 pCi/L the same or an equivalent sample is analyzed for radium-226 and if the concentration of radium-226 exceeds 3 pCi/L, the same or equivalent sample is analyzed for radium-228. (3)(9) Verify that suppliers of water monitor for gross alpha particle activity, radium-226 and radium-228 every 4 yr and within 1 yr of the introduction of a new water source for a community water system. (3)(9) (NOTE: The state has the power to order additional samples, waive required samples and impose additional requirements.) Verify that if the MCL for gross alpha particle activity or total radium is exceeded and the installation is the supplier of a community water system, the installation notifies the state and the public of the exceedance. (3)(9) Verify that systems using surface water sources and serving more than 100,000 persons are initially monitored quarterly for compliance with manmade radioactivity limitations and after the initial analysis, monitoring is done at least every 4 yr. (3)(9) Verify that suppliers of any community water system using waters contaminated by nuclear facilities initiate quarterly monitoring for gross beta particle and iodine-131 radioactivity and annual monitoring for strontium-90 and tritium. (3)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-31. Installations with community water systems that add a disinfectant to the water are required to analyze for total trihalomethanes (40 CFR 141.30).	Verify that community water systems serving a population of 10,000 or more individuals that add a disinfectant to the water and are using surface water sources or using only groundwater sources analyze for total trihalomethanes at quarterly intervals on at least 4 samples. (3)(9) (NOTE: The minimum number of samples that is required is based on the number of treatment plants used by the system.)
...	...
3-32. Suppliers of water for community public water systems are required to analyze for sodium (40 CFR 141.41).	Verify that one sample is taken per plant at the entry point of the distribution system annually for systems using surface water in whole or in part and every 3 yr for systems using solely groundwater sources. (3)(9) Verify that the results of the sampling were reported to the USEPA and/or state within 10 days following the end of the required monitoring period or within the first 10 days of the month following the month in which the sample was taken. (1)(3)(9)
...	...
3-33. Suppliers of water for community water systems will collect samples from representative entry points to the water distribution system and analyze for corrosivity (40 CFR 141.42).	Verify that the supplier collects 2 samples per plant for analyses for each plant using surface water sources wholly or in part. (3)(9) Verify that one samples is taken in mid-winter and one in mid-summer. (3)(9) Verify that one sample per plant is collected for each plant using groundwater sources. (3)(9) (NOTE: Determination of corrosivity includes measurement of pH, calcium, hardness, alkalinity, temperature, total dissolved solids, and calculation of the Langelier Index.) Verify that the results for the analyses of corrosivity are reported to the USEPA and/or state within the first 10 days of the month following the month in which the sample results were received. (2) (NOTE: The state might require monitoring for additional parameters which may indicate corrosivity such as sulfates and chlorides.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-34. Analysis for inorganic contaminants, volatile organic contaminants, pesticides, and bacteria to determine compliance with maximum contaminant levels must be performed in a state-approved laboratory or by a state-approved individual (40 CFR 141.23 (k)(5), 141.24(f)(17), 141.24(l)(19), and 141.28).	Review documentation of state certification for laboratory analysis. (2)(3)
...	...
DISINFECTION AND FILTRATION	
3-35. Facilities that have a public water system that uses surface water sources or groundwater sources under direct influence of a surface water source must provide filtration as a treatment technique for microbiological contaminants unless certain criteria are met (40 CFR 141.71(a) and 141.71(b)).	Verify that filtration of drinking water is performed unless all of the following conditions for source water are met: (2)(9) - the fecal coliform concentration is less than or equal to 20/100 mL or total coliform concentration is equal to or less than 100/100 mL in representative samples of the source water immediately prior to the first or only point of disinfectant application in at least 90 percent of the measurement made in the last 6 mo that the system served water to the public on an ongoing basis - the turbidity level does not exceed 5 NTU in representative samples of the source water immediately prior to the first or only point of disinfectant application the unless the state determines otherwise and there has not been more than 2 events in the past 12 mo the system has served water to the public or more than 5 events in the past 120 mo the system has served water to the public.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

3-35. (continued)	Verify that filtration of drinking water is done unless all the following site specific conditions are met: (2)(9)
	
	- the requirements of 40 CFR 141.72(a)(l) (see checklist item 3-37) for disinfection treatment of Giardia lamblia are met at least 11 of the 12 previous mo
	- meets 40 CFR 141.72(a)(2) through 141.72(a)(4) (see checklist item 3-37) at all times
	- maintains a watershed control program for Giardia lamblia in the source water, including:
	  - identification of watershed characteristics
	  - monitoring occurrence of activities that have adverse effects
	  - demonstration through ownership and/or written agreements that the control of adverse effects of human activities are regulated
	  - submission of annual reports to the state
	  - annual onsite inspections by the state or a party approved by the state to assess watershed control program
	  - no identification as a source of waterborne disease or threat or has been modified sufficiently to prevent recurrence
	- complies with MCL for total coliforms as defined in 40 CFR 141.63 for at least 11 of the previous 12 mo (see checklist item 3-14)
	- complies with requirements for trihalomethanes as listed on 40 CFR 141.12 and 141.13 (see Appendix 3-1).
	
	(NOTE: Public water systems that use a groundwater source under the direct influence of surface are not required to meet these conditions to avoid filtration until 18 mo after the state has determined that the facility is under the direct influence of surface water.)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-36. Installations that do not meet the criteria necessary for exclusion from filtration for public water systems that use a surface water source or a groundwater source under the direct influence of surface water must provide filtration that meets specific standards by 29 June 1993, or within 18 mo after being required to provide filtration, whichever is later (40 CFR 141.73 and 141.74 (c)(2)).	Verify that if conventional or direct filtration is used the following are met: (3)(9) - a turbidity level of 0.5 NTU or less in 95 percent of measurements taken each month - the turbidity level of representative samples of filtered water at no time exceeds 5 NTU. Verify that if slow sand filtration is used the following are met: (3)(9) - the turbidity level of representative samples of a system's filtered water is 1 NTU or less in 95 percent of the monthly measurements - the turbidity level of representative samples of a system's filtered water at no time exceeds 5 NTU. Verify that if diatomaceous earth filtration is used the following is met: (3)(9) - the turbidity level of representative samples of a system's filtered water is less than or equal to 1 NTU in at least 95 percent of the measurements taken each month - the turbidity level of representative samples of a system's filtered water at no time exceeds 5 NTU. Verify that if other filtration technologies are used, they have been approved by the state. (2) Verify that starting 29 June 1993, or when filtration is installed, turbidity measurements are performed on representative samples of the system's filtered water every 4 h that the system serves water to the public. (2) Verify that as of 29 June 1993, or whenever filtration is installed, the residual disinfectant concentration of water entering the distribution system is monitored continuously and the lowest value recorded each day. (2) Verify that if there is a failure in the continuous monitoring equipment, grab sampling is done every 4 h. (2)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-36. (continued)	(NOTE: Grab sampling can be done for no more than 5 working days following the failure of the continuous monitoring system.) (NOTE: Systems serving 3300 or fewer person can use grab sampling instead of continuous monitoring if the following daily frequencies are met: System size by population — Samples/day < / = 500 — 1 501 to 1000 — 2 1001 to 2500 — 3 2501 to 3300 — 4 Verify that any time the residual disinfectant concentration falls below 0.2 mg/L in a system using grab sampling, the system takes a grab sample every 4 h until the residual disinfectant concentration is equal to or greater then 0.2 mg/L. (2) Verify that the residual disinfectant concentration is measured at least at the same points in the distribution system and at the same time as total coliforms are sampled. (2)
...	...

3-37. Installations with public water systems that use a surface water source or a groundwater source under direct influence of a surface water source that is not required to provide filtration are required to provide disinfection treatment (40 CFR 141.72(a)).	Verify that the following requirements for disinfection are met: (3)(9)
	
	- it ensures 99.9 percent (3-log) inactivation of Giardia lamblia cysts every day except for once per month by meeting the required CT applicable to the system's particular water quality parameters as outlined in 40 CFR 141.74
	- it ensures 99.99 percent (4-log) inactivation of virus every day except for once per month by meeting the required CT applicable to the system's particular water quality parameters outlined in 40 CFR 141.74
	- the CT values are calculated daily
	- throughout the disinfection system there is either:
	  - automatic startup and alarm for insuring continuous disinfection application while water is delivered through distribution system
	  - automatic shut-off when there is less than 0.2 mg/L residual disinfectant
	- the residual disinfectant concentration in water entering distribution system is not less than 0.2 mg/L for more than 4 h
	- the residual disinfectant concentration, measured as total chlorine, combined chlorine, or chlorine dioxide, is not undetectable in more than 5 percent of samples each month for more than 2 consecutive month.
	
	(NOTE: Water in a distribution system with a heterotrophic bacteria concentration less than or equal to 500 mL, measured as heterotrophic plate count (HPC) is deemed to have a detectable disinfectant residual.)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-38. Installations with public water systems that use a surface water source or a groundwater source under direct influence of a surface water source that provide filtration or that are required by the state to install filtration must meet specific disinfection requirements by 29 June 1993 or within 18 mo of being required to install filtration (40 CFR 141.72(b) and 141.73).	Determine whether the installation provides filtration for drinking water. (3)(9) Verify that by 29 June 1993 the following requirements for disinfection are provided: (3)(9) - it ensures 99.9 percent (3-log) inactivation of Giardia lamblia cysts - it ensures 99.99 percent (4-log) inactivation of viruses - the residual disinfectant concentration in water entering distribution system is not less than 0.2 mg/L for more than 4 h - the residual disinfectant concentration throughout the distribution system is not undetectable in more than 5 percent of samples each month for any 2 mo the system serves water to the public - analytical methods as specified in 40 CFR 141.74 are used to demonstrate compliance with the requirements for filtration and disinfection. (NOTE: Systems which filter are given an inactivation credit depending upon the type of filtration used.)
...	...
3-39. Installations with public water systems that use a surface water source and do not provide filtration are required to report specific information monthly to the state (unless the state has determined that filtration is required) until filtration is in place (40 CFR 141.75(a)).	Verify that the following listed information is reported to the state at the indicated times: (2)(3) - source water quality information within 10 days after the end of each month the system serves water to the public - disinfection information within 10 days after the end of each month the system serves water to the public - a report summarizing compliance with all watershed control programs no later than 10 days after the end of each Federal fiscal year - a report on the onsite inspection conducted during that year, unless it was conducted by the state, no later than 10 days after the end of the Federal Fiscal year - the occurrence of a waterborne disease outbreak potentially attributable to that water system as soon as possible, but no later than by the end of the next business day - when turbidity exceeds 5 NTU, as soon as possible but no later than the end of the next business day - any time the residual falls below 0.2 mg/L in the water entering the distribution system as soon as possible, but no later than by the end of the next business day. (NOTE: See the complete text of 141.75(a) for more details on how this information is to be reported.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-40. Installations with public water systems that use a groundwater source under the direct influence of surface water and do not provide filtration treatment must report specific information to the state monthly starting 31 December 1990, or 6 mo after the state determines that the groundwater source is under the direct influence of surface water, whichever is later (40 CFR 141.75(a)).	Verify that the following listed information is reported to the state at the indicated times: (2)(3) - source water quality information within 10 days after the end of each month the system serves water to the public - disinfection information within 10 days after the end of each month the system serves water to the public - a report summarizing compliance with all watershed control programs no later than 10 days after the end of each Federal fiscal year - a report on the onsite inspection conducted during that year, unless it was conducted by the state, no later than 10 days after the end of the Federal Fiscal year - the occurrence of a waterborne disease outbreak potentially attributable to that water system as soon as possible , but no later than by the end of the next business day - when turbidity exceeds 5 NTU, as soon as possible but no later than the end of the next business day - any time the residual falls below 0.2 mg/L in the water entering the distribution system as soon as possible, but no later than by the end of the next business day. (NOTE: See the complete text of 141.72(b) for more details on how this information is to be reported.)
...	...
3-41. Installations with public water systems that use a surface water source or a groundwater source under the direct influence of surface water that provide filtration must report specific information monthly to the state starting 29 June 1993 or when filtration is installed, whichever is later (40 CFR 141.75(b)).	Verify that by 29 June 1993, or whenever filtration is installed, the following information is provided to the state in the indicted time frame: (2)(3) - turbidity measurements within 10 days after the end of each month the system serves water to the public - disinfection information within 10 days after the end of each month the system serves water to the public - notice of an occurrence of a waterborne disease outbreak, as soon as possible but no later than by the end of the next business day - when the turbidity exceeds 5 NTU, as soon as possible, but no later than the end of the next business day - any time the residual falls below 0.2 mg/L in the water entering the distribution system, as soon as possible, but no later than by the end of business the next day. (NOTE: See the complete text of 141.75(b) for more details on how this information is to be reported.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-42. The USEPA has set certain standards for analytic procedures that must be used and followed to demonstrate compliance with disinfection and filtration requirements (40 CFR 141.74).	Verify that analytic methods as specified in 40 CFR 141.74 are used to demonstrate compliance with the requirements for filtration and disinfection. (3)(9)
...	...
NOTIFICATION AND REPORTING REQUIREMENTS	
3-43. Public water systems are required to maintain on the premises, or at a convenient location specific records (40 CFR 141.33(a), 141.33 (b), and 141.33(d)).	Verify that records of bacteriological analyses are kept for a minimum of 5 yr. (2) Verify that records of chemical analyses are kept for a minimum of 10 yr. (2) Verify that records of actions taken to correct violations of primary drinking water regulations are kept for a minimum of 3 yr after the last action taken for a particular violation. (2) Verify that records concerning a variance or exemption granted to the system are kept for a period ending not less than 5 yr following the expiration of the variance or exemption. (2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-44. When Primary Drinking Water Standards are exceeded, public notifications must be made (40 CFR 141.32).	Determine if the following public notification procedures were followed: (2) - notices were placed in a daily newspaper of general circulation in the area served by the system as soon as possible, but no later than 14 days after the violation or failure - notices were placed in a weekly newspaper of general circulation if there is no daily newspaper - notices were issued by mail delivery, by direct mail or with the water bill, or by hand delivery within 45 days after the violation or failure. (NOTE: The state may waive mail or hand delivery if it is determined that the violation or failure is corrected within the 45 day period.) Verify that if public notification was made, it was worded according to USEPA guidelines. (2) Verify that if there is an acute violation, the public radio and television station are notified within 72 h. (2) Verify that following the initial notice, additional notice is given at least once every three months by mail delivery, or by hand delivery, for as long as the violation exists. (2) (NOTE: Instead of the requirements outlined here, community water systems in an area that is not served by a daily or weekly newspaper of general circulation must give notice by hand delivery or by continuous posting in conspicuous places within the area served by the system. Notice must be given within 72 h for acute violations and 14 days for other violations.)
...	...
3-45. Community water systems that exceed the secondary MCL of 2.0 mg/L for fluoride but not the MCL of 4.0 mg/L are required to notify specific individuals (40 CFR 143.5).	Verify that notice has been provided to the following: (2) - all billing units annually - all new billing units at the time service begins - the state public health officer. (NOTE: A copy of the text of the notice is found in 40 CFR 143.5(b).)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-46. Installations that operate public water systems must send reports to the state on any failure to comply with applicable biological, turbidity, radioactivity and chemical standards, and on any failure to comply with monitoring requirements that apply (40 CFR 141.31).	Examine file of reports to the state. (2) Verify that, in general, reports are sent within the first 10 days following the month in which the result is received or the first 10 days following the end of the required monitoring period whenever standards are not met. (2) Verify that the installation reported any failure to comply with any national primary drinking water regulations to the state within 48 h. (2)
...	...
LEAD AND COPPER IN DRINKING WATER SYSTEMS	
3-47. Installations should have initiated a program to reduce exposure of lead to children and should have completed an inventory and replacement of drinking water coolers in child care and school facilities (GMP).	Verify that the child care centers and schools have tested for lead in the drinking water coolers and replaced those that posed a threat to the children. (2)
...	...
3-48. The use of pipe, solder, or flux that contains lead is not allowed in specific situations (40 CFR 141.43(a)(1) and 141.43(d)).	Verify that lead pipe, solder, or flux is not used in the installation or repair of either of the following: (2) - any public water system - any plumbing in a residential facility providing water for human consumption which is connected to a public water system. (NOTE: This does not apply to leaded joints necessary for the repair of cast iron pipes.) (NOTE: Lead-free is defined as not more than 0.2 percent content for solders and flux and not more than 8.0 percent lead in reference to pipes and pipe fittings.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-49. Community waters systems and non-transient, noncommunity water systems were required to issue a notice by 19 June 1988 to persons served by the system that might be affected by lead contamination (40 CFR 141.34 and 141.43(a)(2)). ...	Verify that the notice was issued by one of the following methods: (2) - 3 newspaper notices - a notice included with the water bill - a hand delivered notice. (NOTE: For nontransient, noncommunity water systems notice may be given by continuous posting.) (NOTE: The notice is not required if the system can demonstrate to the state that the water system, including the nonresidential and residential portion connected to the water system, are lead free.) (NOTE: Notice must be provided even if there is no violation of the national primary drinking water standards. The required wording of the notice is outlined in 40 CFR 141.34.) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

3-50. Installations with community or nontransient, noncommunity water systems must notify their users about lead in drinking water systems (40 CFR 141.80(g), 141.85, and 141.91(f)).	Verify that public education materials are distributed in the following manner when a water system exceeds the lead action level based on tap water samples and: (1)(2)
	- the material is in the appropriate languages where languages other than English are spoken by a significant proportion of the population
	- within 60 days after exceeding the lead action level:
	  - notices are inserted in each customer's water utility bill
	  - information is provided to the editorial departments of the major daily and weekly newspapers circulated in the community
	  - pamphlets or brochures are delivered to pertinent facilities, organizations, schools and medical centers
	  - public service announcements are submitted to at least 5 of the radio and television stations broadcasting to the community.
	Verify that the notification tasks are repeated every 6 mo for as long as a community water system exceeds the lead action level. (1)(2)
	Verify that a nontransient, noncommunity water system delivers the public education materials by posting informational posters and distributing brochures. (1)(2)
	Verify that a nontransient, noncommunity water system repeats distribution of information at least once each calendar year in which the system exceeds the lead action level. (1)(2)
	(NOTE: The text of written materials and broadcast materials can be found in 40 CFR 141.85(a) and 141.85(b).)
	Verify that by 31 December any water system that has had to issue public education materials submits a letter to the state indicating that the system has delivered the public education materials as required each year that the levels are exceeded. (1)(2)

...	...
3-51. Community water systems and nontransient, noncommunity water systems are required to meet specific standards for lead and copper action levels and reporting requirements when these levels are exceeded (40 CFR 141.80(a)(1) and 141.80 (c)).	Verify that the concentration of lead does not exceed 0.015 mg/L in more than 10 percent of tap water samples collected during any monitoring period. (3)(9) Verify that the concentration of copper does not exceed 1.3 mg/L in more than 10 percent of tap water samples collected during any monitoring period. (3)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-52. All water systems are required to install and operate optimal corrosion control (40 CFR 141.80 (d)).	Verify that the water system has corrosion control that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any of the national primary drinking water standards. (3)(9) (NOTE: Please see 40 CFR 141.81 and 40 CFR 141.83 for design details for corrosion control systems in relationship to the size of the water system.)
...	...
3-53. Systems that exceed the lead or copper action level are required to implement applicable source water treatment standards (141.80(e) and 141.83).	Verify that systems exceeding the lead or copper action level do lead and copper source water monitoring and make a treatment recommendation to the state within 6 mo after exceeding the lead or copper action rate. (3)(9) Verify that if the state requires the installation of source water treatment, the installation is done within 24 mo after the state's initial response. (3)(9) Verify that follow-up tap water monitoring and source water monitoring is completed within 36 mo after the state's initial response. (3)(9)
...	...
3-54. Installations with water systems exceeding the lead action level after implementation of corrosion control and source water treatment requirements are required to replace lead service lines (40 CFR 141.80(f) and 141.84).	Verify that lead service line replacement is done according to the schedules and parameters outlined in 40 CFR 141.84. (3)(9) (NOTE: A system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line is less than 0.015 mg/L.) (NOTE: Replacement of lead service lines can stop when the first draw samples that are collected meet the lead action levels during two consecutive monitoring periods and the system submits the results to the state.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-55. Monitoring for lead and copper is required to start on a specified date and be done at a specified number of sites according to the chart in Appendix 3-7 (40 CFR 141.80(g), 141.86(a)(1), 141.86(c), and 141.86(d)).	Verify that sample sites have been selected and sampling started as of the dates indicated in Appendix 3-7. (2)(3) Verify that the procedures for sampling and granting of variances found in 141.86 are followed. (2)(3) Verify that for the initial tap sample, all large water systems monitor during two consecutive 6-mo periods and all small and medium-size water systems monitor during each 6-mo period until: (2)(3) - the system exceeds the lead or copper action levels and is then required to implement corrosion control treatment - the system meets the lead and copper action levels during two consecutive 6-mo monitoring periods. (NOTE: A small or medium-sized water system that meets the lead and copper action levels during each of two consecutive 6-mo monitoring periods can reduce the frequency of sampling to once a year. If action levels are met during 3 consecutive yr of monitoring, the frequency may be reduced to once every 3 yr.) Verify that for monitoring after the installation of corrosion control and source water treatment, large systems with optimal corrosion control by 1 January 1997 monitor during two consecutive 6-mo periods by 1 January 1988. (2)(3) Verify that for monitoring after the installation of corrosion control and source water treatment, small or medium-size systems that install optimal corrosion control within 24 mo after being required to do so by the state, monitor during two consecutive 6-mo periods within 36 mo after being required to install optimal corrosion control treatment. (2)(3) Verify that for monitoring after the installation of corrosion control and source water treatment required by the state, all systems that install state required systems monitor during 2 consecutive mo within 36 mo after the initial state requirement. (2)(3) Verify that after the state has specified water quality parameter values for optimal corrosion control that monitoring is done during each subsequent 6 mo monitoring period beginning when the state specified the optimal values. (2)(3)
...	...
3-56. All large water systems and all small and medium size systems that exceed the lead or copper action level are required to monitor for water quality parameters in addition to lead and copper (40 CFR 141.40(h) and 141.87).	Verify that monitoring for water quality parameters is done according to Appendix 3-8. (2)(3)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-57. Water systems that fail to meet the lead or copper action levels are required to meet specific monitoring requirements (40 CFR 141.80(h) and 141.88).	Verify that systems that exceed lead or copper action levels at the tap collect one source water sample from each entry point to the distribution system within 6 mo after the exceedance. (2)(3) Verify that systems which install source water treatment as required by the state collect an additional source water sample from each entry point to the distribution system during two consecutive 6-mo monitoring periods. (2)(3) Verify that the system monitors as follows when the state specifies maximum permissible source water levels: (2)(3) - once during the 3 yr compliance period for water systems using only groundwater - annually for water systems using surface water or a combination of surface and groundwater. (NOTE: Frequency of monitoring may be reduced by the state upon request.)
...	...
3-58. In reference to lead and copper in water systems, all water systems are required to fulfill specific reporting requirements (40 CFR 141.90(a) and 141.90(b)).	Verify that water systems report sampling results for all tap water samples within the first 10 days following the end of each monitoring period. (2)(3) Verify that water systems report the sampling results for all source water samples within the first 10 days following the end of each source water monitoring period. (2)(3)
...	...
3-59. All systems subject to the lead and copper requirements are required to retain on site all the original records of sampling data, analysis, reports, surveys, letters, evaluations, state determinations, and any other pertinent documents for at least 12 yr (40 CFR 141.80(j) and 141.91).	Verify that records are kept onsite for 12 yr. (2)(3)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
SOLE SOURCE AQUIFER **3-60.** Projects that may affect the recharge zone or stream flow source zone of a designated sole source aquifer are regulated (40 CFR 149.103 and 149.104). ...	Determine if the facility is located near a designated sole source aquifer. (1)(2) Verify that the installation maintains a list of projects for which environmental impact statements (EISs) will be prepared. (1)(2) Verify that if any projects may potentially cause direct or indirect contamination through its recharge zone a petition has been submitted to the USEPA Regional Administrator. (1)(2) (NOTE: Currently the only Federally designated sole source aquifer is the Edwards Aquifer in the San Antonio, Texas Area.) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

Appendix 3-1

Primary Drinking Water Standards for Organic Contaminants

Table 1: Maximum Contaminant Levels Applicable to Community Water Systems
(40 CFR 141.12)

Contaminant	mg/L
Total Trihalomethanes (the sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform) and trichloromethane (chloroform)	0.10

(NOTE: The standard for total trihalomethanes only applies to community water systems serving greater than 10,000 individuals which add a disinfectant during treatment.)

Table 2: Maximum Contaminant Levels Applicable to Community and Nontransient, Noncommunity Water Systems (40 CFR 141.61(a))

Contaminant	mg/L
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20
1,2-Dichloroethane	0.005
1,2-Dichloropropane	0.005
Benzene	0.005
Carbon Tetra chloride	0.005
cis-1,2-Dichloroethylene	0.07
Ethylbenzene	0.7
Monochlorobenzene	0.1
0-Dichlorobenzene	0.6
para-Dichlorobenzene	0.075
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1.0
trans-1,2-Dichloroethylene	0.1
Trichloroethylene	0.005
Vinyl chloride	0.002
Xylenes (total)	10.0 *
Dichloromethane	0.005 *
1,2,4-Trichlorobenzene	.07 *
1,1,2-Trichloroethane	.005 *

* The effective date for these MCLs is 17 January 1994

Table 3: Maximum Contaminant Levels For Synthetic Organic Contaminants Applicable to Community Water Systems and Nontransient, Noncommunity Water Systems (40 CFR 141.61(c))

Contaminant	mg/L
Alachlor	0.002**
Aldicarb	0.003**
Aldicarb sulfoxide	0.004**
Aldicarb sulfone	0.003*
Atrazine	0.003
Carbofuran	0.04
Chlordane	0.002
Dibromochloropropane	0.0002
2,4-D	0.07
Ethylene dibromide	0.00005
Heptachlor	0.0004
Heptachlor epoxide	0.0002
Lindane	0.0002
Methoxychlor	0.04
Pentachlorophenol	0.001
Polychlorinated biphenyls	0.0005
Toxaphene	0.003
2,4,5-TP	0.05*
Benzo(a)pyrene	0.0002*
Delapon	0.2*
Di(2-ethythexyl) adipate	0.4*
Di(2-ethythexyl) phthalate	0.006*
Dinoseb	0.007*
Diquat	0.02*
Endothall	0.1*
Endrin	0.002*
Glyphosate	0.7*
Hexachlorobenzene	0.001*
Hexachlorocyclopentadiene	0.05*
Oxamyl (Vydate)	0.2*
Picloram	0.5*
Simazin	0.004*
2,3,7,8,-TCDD (Dioxin)	3 x $10E^{-8}$

*The effective date for these MCLs is 17 January 1994.

**The MCL for these substances has been postponed by the USEPA.

Appendix 3-2

Primary Drinking Water Standards for Inorganic Contaminants

Table 1: Maximum Contaminant Levels Applicable to Community Water Systems (40 CFR 141.11, 141.12(c), and 141.62(b)(1))

Contaminant	mg/L
Arsenic	0.05
Fluoride	4.0
Total Trihalomethanes	0.10*

* This MCL only applies to community water systems which serve a population of 10,000 individuals or more and which add a disinfectant (oxidant) to the water in any part of the drinking water treatment process.

Table 2: Maximum Contaminant Levels Applicable to Community Water Systems and Nontransient, Noncommunity Water Systems (40 CFR 141.62(b)(2) through 141.62(b)(6) and 141.62(b)(10) through 141.62(b)(15))

Contaminant	mg/L
Asbestos	7 milllion fibers/L
Barium	2.0
Cadmium	0.005
Chromium	0.1
Mercury	0.002
Selenium	0.05
Antimony	0.006
Beryllium	0.004
Cyanide (as free Cyanide)	0.2
Nickel	0.1
Thallium	0.002

Table 3: Maximum Contaminant Levels Applicable to Community, Nontransient, Noncommunity and Transient Noncommunity Water Systems (40 CFR 141.62(b)(7) through 141.62(b)(9))

Contaminant	mg/L
Nitrate (as N)	10.0
Nitrite (as N)	1.0
Total Nitrate and Nitrite (as N)	10.0

Appendix 3-3

Detection Limitations for Inorganic Contaminants (40 CFR 141.23(a))

Contaminant	MCL (mg/L)	Analytical Method	Detection Limit (mg/L)
Antimony	0.005	Atomic Absorption Furnace	0.003 0.0008[6]
		ICP Mass spectrometry	0.0004
		Hydride Atomic Absorption	0.001
Asbestos	7 milllion fibers per L	Transmission Electron Microscopy	0.01 million fibers/L
Barium	2.0	Atomic Absorption; furnace technique	0.002
		Atomic Absorption; direct aspiration	0.1
		Inductively C[illegible]led Pl[illegible]a	0.002(0.001*)
Cadmium	0.005	Atomic Absorp[illegible]n; furnace technique	0.0001
		Inductively Coupled Plasma	0.001[1]
Chromium	0.1	Atomic Absorption; furnace technique	0.001
		Inductively Coupled Plasma (0.001)*	0.007
Cyanide	0.2	Distillation,Spectrophotometric[4]	0.02
		Distillation, Automated, Spectrophotometric[4]	
		Distillation, Selective Electrode[5]	0.05
		Distillation, Amenable, Spectrophotometric[5]	0.02
Mercury	0.002	Manual Cold Vapor Technique	0.0002
		Automated Cold Vapor Technique	0.0002
Nickel	0.1	Atomic Absoption, Furnace	0.001 0.0006[6]
		Inductively Coupled Plasma[3]	0.005
		ICP Mass Spectrometry	0.0005
Nitrate	10 as N	Manual Cadmium Reduction	0,01
		Automated Hydrazine Reduction	0.01
		Automated Cadmium Reduction	0.05
		Ion Selective Electrode	1.0
		Ion Chromatography	0.01
Nitrite	1 as N	Spectrophotometric	0.01
		Automated Cadmium Reduction	0.05
		Manual Cadmium Reduction	0.01
		Ion Chromatography	0.004
Selenium	0.05	Atomic Absorption; furnace	0.002
		Atomic Absorption; gaseous hydride	0.002
Thallium	0.002	Atomic Absorption Furnace	0.001 0.0007[6]
		ICP-Mass Spectrometry	0.0003

[1] Using concentration techniques n Appendix A to USEPA Method 200.7
[3] Using a 2x preconcentration step as noted in Method 200.7. Lower MDLs may be achieved by using a 4x preconcentration.
[4] Screening method for total cyanides
[5] Measures "free" cyanides
[6] Lower MDLs are reported using stabilized temperature graphite furnace atomic absorption.

Appendix 3-4

Detection Limitations
(40 CFR 141.24(h)(18))

Contaminant	Detection Limit
Alachlor	0.0002
Aldicarb	0.0005
Aldicarb sulfoxide	0.0005
Aldicarb sulfone	0.0008
Atrazine	0.0001
Benzo[a]pyrene	0.00002
Carbofuran	0.0009
Chlordane	0.0002
Dalapon	0.001
Dibromochloropropane (DBCP)	0.00002
Di (2-ethylhexyl) adipate	0.0006
Di (2-ethylhexyl) phthalate	0.0006
Dinoseb	0.0002
Diquat	0.0004
2,4-D	0.0001
Endothall	0.009
Endrin	0.00001
Ethylene dibromide (EDB)	0.00001
Heptachlor	0.00004
Heptachlor epoxide	0.00002
Hexachlorobenzene	0.0001
Hexachlorocyclopentadiene	0.0001
Lindane	0.00002
Methoxychlor	0.0001
Oxamyl	0.002
Picloram	0.0001
Pentachlorophenol	0.00004
Polychlorinated biphenyls	0.0001
Simazine	0.00007
Toxaphene	0.001
1,3,7,8-TCDD (Dioxin)	0.000000005
2,4,5-TP	0.0002

Appendix 3-5

Unregulated Organic and Inorganic Contaminants (40 CFR 141.40(n)(11) and 141.40(n)(12))

Organic Contaminants

Aldrin
Butachlor
Carbaryl
Dicamba
Dieldrin
3-Hydroxycarbofuran
Methomyl
Metolachlor
Metribuzin
Propachlor

Inorganic Contaminants

Sulfate

Appendix 3-6

Coliform Bacteria Sampling Frequency (40 CFR 141.21(a)(2))

Population Served Per Month	Minimum Number of Samples Per Month
25 to 1,000	1
1001 to 2500	2
2501 to 3300	3
3301 to 4100	4
4101 to 4900	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
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

Appendix 3-7

Monitoring and Sampling Parameters for Lead and Copper in Drinking Water

(40 CFR 141.86(c) and 141.86(d))

Number of Sampling Sites Required

System Size (people served)	No. of sites (standard monitoring)	No. of sites (reduced monitoring)
> 100,000	100	50
10,001 - 100,000	60	30
3301 - 10,000	40	20
501 - 3300	20	10
101 - 500	10	5
< / = 100	5	5

Dates for the Start of Monitoring

System Size (no. people served)	First 6-mo monitoring period begins on:
> 50,000	1 January 1992
3301 - 50,000	1 July 1992
< / = 3300	1 July 1993

Appendix 3-8

Monitoring Requirements for Water Quality Parameters (40 CFR 141.87)

(NOTE: This table is for illustrative purposes, consult the text of the regulation for actual details).

Monitoring Period	Parameters[1]	Location	Frequency
Initial Monitoring	pH, alkalinity, orthophosphate or silica[2], calcium, conductivity, temperature	Taps and at entry points in distribution system	Every 6 mo
After Installation of Corrosion Control	pH, alkalinity, orthophosphate or silica[2], calcium[3], conductivity, temperature	Taps	Every 6 mo
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as a part of corrosion control), inhibitor dosage rate and inhibitor residual[4]	Entry points to distribution system.	Biweekly
After State Specifies Parameter Values For Optimal Corrosion Control	pH, alkalinity, orthophosphate or silica[2], calcium[3]	Taps	Every 6 mo
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as a part of corrosion control), inhibitor dosage rate and inhibitor residual[4]	Entry points to distribution system.	Biweekly
Reduced Monitoring	pH, alkalinity,orthophosphate or silica[2], calcium[3],	Taps	Every 6 mo at a reduced number of sites
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as a part of corrosion control), inhibitor dosage rate and inhibitor residual[4]	Entry points to distribution system.	Biweekly

1. Small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.
2. Orthophosphates must be measureed only when an inhibitor containing a phosphate component is used. Silica must be measured only when an inhibitor containing silicate compounds is used.
3. Calcium must be measured only when calcium carbonate stabilization is used as a part of corrosion control.
4. Inhibitor dosage rates and inhibitor residual concentrations (orthophosphates or silica) must be measured only when an inhibitor is used.

INSTALLATION:	COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M)

Section 4

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C (RCRA-C)

SECTION 4

RESOURCE CONSERVATION AND RECOVERY ACT, Subtitle C (RCRA-C)

A. Applicability of this Protocol

This protocol applies to Army installations that generate, store, treat, or dispose of any type of hazardous waste. The Federal regulations which an installation is required to meet are based on the amount of waste generated at the installation during 1 month (mo) and whether or not the installation is operating a transportation, storage, or disposal facility.

This protocol 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 on the worksheets to direct the evaluator to the evaluation questions related to the type of hazardous waste activities/facilities on the installation. This protocol focuses on the hazardous waste 40 Code of Federal Regulations (CFR) 260-279 since these are the primary regulations that affect most Army installations. However, installation environmental coordinators should determine the additional requirements mandated by their respective state regulations (if appropriate) and include evaluation questions on worksheets in the same format as shown in this protocol.

B. Federal Legislation

- *The Resource Conservation and Recovery Act (RCRA), Subtitle C, as amended.* This law, Public Law (PL) 98-616 (42 U.S. Code (USC) 6921-6939b) established standards and procedures for the handling, storage, treatment, and disposal of hazardous waste. For example, RCRA prohibits the placement of bulk or noncontainerized liquid hazardous waste or free liquids containing hazardous waste into a landfill. It also prohibits the land disposal of specified wastes and disposal of hazardous waste through underground injection within 1/4 mile (mi) of an underground source of drinking water

- *The Federal Facility Compliance Act (FFCA) of 1992.* This act provides for a waiver of sovereign immunity with respect to Federal, state, and local procedural and substantive requirements relating to RCRA solid and hazardous waste laws and regulations. Additionally, it defines hazardous waste in relation to public vessels, expands the definition of mixed waste, addresses the issue of munitions, and discusses waste discharges to Federally owned treatment works.

C. State/Local Requirements

Many states have met U.S. Environmental Protection Agency (USEPA) requirements as outlined in 40 CFR 271 and have been authorized to manage their own state programs. Many states have adopted the USEPA regulations by reference or have promulgated regulations identical to the USEPA regulations. Several other states have developed hazardous waste regulatory programs that are substantially equivalent to the Federal program or have implemented programs significantly more stringent than the USEPA program. These differences between individual state regulations and the Federal program require that evaluators check the status of the state's authorization and then determine which regulations apply. Since the protocol worksheets are based exclusively on the requirements of the Federal RCRA/USEPA program, it is necessary to determine in what ways the applicable state program differs from the RCRA/USEPA program.

D. Department of Defense (DOD) Regulations

There are two DOD Policy Memorandums that address hazardous waste and are applicable to Army installations:

- Defense Environmental Quality Program Policy Memorandum (DEQPPM) 80-5, *DOD Hazardous Material Disposal Policy*, designates the Defense Logistics Agency (DLA) as the single manager for disposal of hazardous materials within DOD. This policy is implemented through regional Defense Reutilization and Marketing Offices (DRMOs) around the country that are responsible for managing the offsite disposal of hazardous wastes for Army installations.

- DEQPPM 80-8, *RCRA Hazardous Waste Management Regulations*, establishes management procedures for implementing the DOD Hazardous Waste Management Program (HWMP).

E. U.S. Army Regulations (ARs)

- AR 200-1, *Environmental Protection and Enhancement*, 23 May 1990. Chapter 6 defines Army policy and procedures for managing hazardous waste, including resource recovery, recycling, waste reduction, and training programs.

The hazardous waste management program requirements of AR 200-1 are that Army, U.S. Army Reserve (USAR), and Army National Guard (ARNG) installations and tenants will be aware of and comply with all applicable laws (Federal, state, and local); ensure that program and budget requests identify resource requirements to carry out management duties; encourage the use of

joint or regional facilities to minimize costs; minimize generation and land disposal of hazardous wastes; prohibit the storage of hazardous wastes in underground storage tanks; conform to all laws, including international laws, on ocean dumping; and in general, "generate, transport, treat, store, and dispose of wastes such as pesticides, hazardous chemical stocks, medical, dental, and veterinary supplies, radioactive materials, and propellant, explosive, and pyrotechnic (PEP) materials, explosive ordnance, or chemical warfare agents in a manner that protects public health and the environment" (para 6-2).

F. Key Compliance Requirements

- *Generator Requirements* - Responsibilities of Army installations are based on the amount of waste being generated in 1 mo. Typical wastes include solvents, paint, contaminated antifreeze or oil, and sludges. In some states, waste oil and other substances have been classified as a hazardous waste and therefore need to be included in the total amount of waste being generated. Within Federal regulations there are three classifications:

    1. A Conditionally Exempt Small Quantity Generator (CESQG) produces no more than 100 kilogram (kg) (220 pounds (lb)) of hazardous waste or 1 kg (2.2 lb) of acutely hazardous waste in a 1 mo time period. They also do not accumulate onsite more than 1000 kg (2200 lb) of waste at any one time. When either the volume of waste produced in 1 mo exceeds 100 kg (220 lb) or more than 1000 kg (2200 lb) of waste has accumulated onsite, the installation is required to comply with the more stringent standards applicable to a Small Quantity Generator (SQG).

        (NOTE: Using water, which weighs approximately 8 lb/gal (3.67 kg/gal) as a basis of measurement, 100 kg (220 lb) would equal about 106 liters (L) (28 gal), 1000 kg (2200 lb) would equal about 1035 L (273 gal).)

    2. A SQG produces between 100 and 1000 kg (between 220 and 2200 lb) hazardous waste in a month. The waste cannot accumulate onsite for more than 180 days unless the waste is transported more than 320 kilometers (km) (200 mi) to a treatment, storage, and disposal facility (TSDF). In that situation, the waste can accumulate for 270 days. But at no time is there to be more than 6000 kg (13,200 lb) of waste accumulated at the installation. When the volume of waste generated exceeds 1000 kg (2200 lb), the accumulation time onsite is exceeded, or more than 6000 kg (13,200 lb) of waste is onsite, the installation is required to comply with the standards for a generator.

3. A Generator (also referred to as a Large Quantity Generator (LQG)) produces more than 1000 kg (2200 lb) of hazardous waste in a month. The waste cannot accumulate onsite for more than 90 days. If the waste is kept onsite for more than 90 days, the generator is required to obtain a permit and operate as a TSDF.

Whether the installation is a CESQG generator, an SQG, or a generator (LQG) determines the type of records the installation is required to keep and design standards for storage areas. Small storage areas connected with a generation point are often referred to as accumulation points.

Regardless of the amount of hazardous waste generated, every Army installation is required to test or use prior knowledge of its solid waste to determine if it has hazardous characteristics. Every Army installation is also required to store and/or accumulate hazardous waste in containers that are compatible with the waste, undamaged, and labeled to indicate the contents.

- Installation Hazardous Waste Management Plan (IHWMP) - Each installation commander (IC) will ensure that a written hazardous waste management plan is maintained to provide installation personnel with procedures and responsibilities to manage hazardous wastes consistent with all applicable laws and regulations. The Directorate of Engineering and Housing (DEH) will prepare the plan and provide copies to all facility personnel that generate, transport, treat, store, and dispose of hazardous waste. The plan will be signed by the IC and will:

  - include responsibilities of installation organizations and personnel in generating, treating, storing, and disposing of hazardous waste
  - show USEPA and state ID No. to generate, treat, store, dispose of, transport, or offer for transportation hazardous wastes
  - specify the type and quantity of hazardous waste for each hazardous waste generating activity (including tenants)
  - describe waste minimization projects, funds, and saving
  - identify the location of all hazardous waste TSDFs
  - describe installation procedures to treat, store, dispose of, transport onpost, or offer for transport offpost hazardous waste, consistent with the requirements of 40 CFR 260-271, *Hazardous Waste Management*, including requirements of a RCRA permit
  - include procedures to analyze hazardous wastes; include procedures to inspect the hazardous waste units for malfunction and deterioration, operator errors, and discharges that may be causing, or may lead to release of hazardous waste constituents to the environment, or a threat to human health
  - include procedures to prevent unauthorized entry to the hazardous waste units

- describe the program to train all applicable facility personnel with Federal, state, and Army requirements to ensure compliance with RCRA
- include procedures of the contingency plan to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water, consistent with requirements of 40 CFR 264 Subpart D
- include procedures to temporarily treat, store, and dispose of hazardous waste if the use of existing facilities is unavailable, identifying temporary storage facilities, alternate disposal site, and handling procedures
- include a copy of the RCRA operating record, if applicable
- include a copy of the RCRA permit, if applicable
- reference the location of the Spill Prevention Contingency and Countermeasure (SPCC) Plan and the Installation Spill Contingency Plan (ISCP), and summarize emergency reporting information for reporting and containing spills and illegal dumping (see Section 7 of this manual)
- include references for obtaining technical information on determining if a waste is hazardous; the location of offsite RCRA approved TSDFs; the names of state and Federally approved hazardous waste transporters; and the names and addresses of state and Federal regulatory agencies administering the RCRA program.

• Transport Requirements - Containers of hazardous waste shipped offpost must be labeled identifying the waste and its hazard class. Shipments from the installation to a DRMO offpost must also be accompanied by manifests and are subject to the full transportation requirements as stipulated in Department of Transportation (DOT) hazardous materials transportation regulations.

• Satellite Accumulation Point Management - A satellite accumulation point is where no more than 208 L (55 gal) of a hazardous waste or approximately 1 L (1 quart (qt)) of acute hazardous waste is accumulated. The satellite accumulation point is under the control of one operator. When the 208 L (55 gal) limit is reached the operator has 3 days to move the waste to a 90 day storage area or permitted TSDF.

• Permitted TSDFs Requirements - The operation of a TSDF is subject to regulation and permitting under Federal or state regulations. These regulations are both administrative and technical. The administrative standards require that various plans be developed to ensure that emergencies can be dealt with, that waste received is properly identified, and that operating personnel are adequately trained to operate the facility and respond to emergencies. These administrative standards also include requirements that the facility be inspected routinely, that records of operations are compiled and maintained, and that reports of both routine and contingency operations are made to the applicable

regulatory agency. The administrative standards also require that a plan for ceasing operations and closing the facility be developed, kept onhand, and updated frequently.

The technical standards applicable to TSDFs fall into two classes: general standards that apply to all TSDFs and specific standards that apply to various types of facilities, i.e., container storage areas, tanks, containment buildings, surface impoundments, waste piles, land treatment facilities, incinerators, landfills, thermal treatment facilities, and chemical, physical, biological treatment facilities.

Administrative and technical facility standards are applied to a particular facility through a RCRA permit issued to a facility. Existing facilities which have not been issued an RCRA permit are considered to be in interim status if they have applied for part "A" and part "B" permits and can continue to operate if they comply with the RCRA mandated Interim Status Standards (ISS). These ISS (which are contained in 40 CFR 265) are similar in scope to the permit standards contained in 40 CFR 264, but are generally less stringent and require less facility modifications or improvements.

G. Responsibility for Compliance

- The IC - The IC is responsible for establishing and maintaining an active program of surveillance of the users of hazardous materials; generators, transporters, and storers of hazardous wastes; the waste minimization program; and disposal activities. By DOD direction, the IC is responsible for compliance with RCRA and state regulations involving host and tenant organizations on the installation. The commander signs all permit applications and reports submitted to USEPA or state agencies as part of this overall management responsibility. In the event that the IC is not a colonel or higher or commands less than 250 persons, RCRA permit applications must be referred up the chain of command to an official in the grade of colonel or higher for signature. In either case, operational responsibility for the hazardous waste program rests with the activities that generate, treat, store, transport, or dispose of the waste in accordance with guidance and direction provided by the activities responsible for implementing health, safety, and environmental protection programs.

- Directorate of Engineering and Housing (DEH) and Directorate of Safety and Health (DSH) - The DEH/DSH will serve as the IC's expert representative for the management of all wastes, unless otherwise directed by the IC.

  In the area of compliance, the DEH/DSH will immediately advise the IC on the receipt of enforcement notices, such as Notices of Violation (NOVs), consent orders, or RCRA compliance agreements; advise all waste generating activities on state, Federal, host nation, and Army requirements for managing hazardous

waste, including requirements for permits and reporting and recordkeeping; prepare all required reports on hazardous waste, including the biennial report (USEPA Form 8700-13A), the A-106 report (see Section 16), and the annual hazardous waste report; monitor installation compliance with Federal, state, local, and host nation hazardous waste requirements, including activities of tenants and subinstallations; prepare and monitor compliance with the hazardous waste management plan that establishes procedures and responsibilities for managing hazardous wastes.

In the area of waste management (including disposal), the DEH/DSH will advise the IC, in coordination with generating activities, on the most cost-effective and efficient means of waste storage, treatment, and disposal; provide technical assistance and guidance to hazardous waste generating activities, tenants, and operators of RCRA hazardous waste TSDFs; provide for analysis of waste to determine if it is hazardous under applicable laws; ensure hazardous wastes are properly identified, segregated, and weighed before treatment, storage, disposal, or transportation; certify that wastes are hazardous wastes and provide copies of waste analysis before arranging for offpost transportation; coordinate an annual installation-wide inventory of all hazardous waste, and identify the waste generating activities; establish, monitor, and execute programs in waste management, including waste minimization, resource recovery, and recycling.

- Director of Logistics (DOL) - The DOL will monitor installation-wide use of hazardous materials to ensure progress in meeting Federal and Army hazardous waste minimization goals and requirements, and provide quarterly progress reports to the DEH. On a semi-annual basis, the DOL will recommend opportunities and provide a progress report to the IC in reducing the use and toxicity of hazardous materials, following the concurrence of the DEH.

  Additionally, the DOL will arrange for and monitor all onpost and offpost shipments of hazardous waste, ensuring compliance with applicable laws and requirements; prepare and maintain records on transporting hazardous wastes, including manifests, and records maintained by the DRMO where co-located on an Army installation; sign the hazardous waste manifest as the IC's designee; coordinate with the DEH to obtain certification that wastes meet the Federal and state definition of hazardous wastes before offering for offpost transportation; advise waste generating activities on proper requirements for packaging, labelling, and shipping of solid waste and hazardous waste to enable the DOL to ensure that offpost transportation of these wastes conforms with Federal, state, Army, DOD, and host nation requirements; actively support the DEH in measuring progress to meet Federal and Army waste reduction goals and re-

quirements; and communicate regularly with the Defense Logistics Agency (DLA) activity serving the installation to maintain current information on markets for hazardous wastes.

If not done by DOL, the Environmental Manager's Office may assume responsibility for manifesting, shipment and record keeping.

- Commanders of Medical Department Activities (MEDDACS) and U.S. Army Medical Centers (MEDCENS) - MEDDAC and MEDCEN commanders will: provide the IC or IC's designee with the hazardous waste management implications of new and revised MEDDAC/MEDCEN practices for review and concurrence; and prepare and maintain a management plan for the disposal of medical waste.

- Installation Preventive Medicine Services (PVNTMED) - PVNTMED personnel will support the hazardous waste management programs, provide technical assistance in identifying wastes and inventorying sources of hazardous wastes, and represent the MEDDAC/MEDCEN as an installation tenant and hazardous waste generator.

- Installation Safety Officers - The installation safety officer (for ARNG, the state safety officer) will monitor the storage, packaging, transportation, treatment, storage, and disposal of waste, and personnel training requirements to ensure compliance with Federal, state, and Army safety standards.

- Chief, Installation Public Affairs Office (PAO) - PAO will establish the necessary supporting public affairs program; coordinate and conduct public involvement to obtain an RCRA permit and RCRA permit modifications, including an Environmental Assessment (EA) or Environmental Impact Statement (EIS); and assist the commander in preparing for any public hearings or public meetings sponsored by USEPA or states to issue or modify a RCRA permit for the installation.

- Tenants (Federal and non-Federal) - Tenants (such as the DRMO) on Army properties or where the Army is a tenant on non-Army property will comply equally with all laws and requirements.

- Managers of Government-owned Contractor-operated (GOCO) facilities - GOCOs that produce hazardous waste on Army installations will: Apportion fees to support the treatment, storage, and disposal of hazardous wastes; establish administrative requirements to preclude the Federal Government from incurring liability associated with treatment, storage, or disposal of hazardous wastes; prohibit the use of DOD personnel in handling solid and hazardous wastes; comply with Federal, state, and local laws and regulations and Army policies on reducing the volume, quantity, or toxicity of hazardous waste;

prohibit the use of onsite hazardous waste TSDFs for non-DOD owned hazardous wastes generated offsite; pay fines assessed by state and Federal regulatory agencies for noncompliance (the Army cannot reimburse for such fines).

- Hazardous Waste Generators - Generators will properly identify, label, package, treat, store, dispose of, measure, transport onpost, or offer for transport offpost, hazardous wastes per requirements of RCRA, DOT, and the IHWP. Also, generators will ensure that all hazardous wastes generated during operations are certified by the DEH and tracked to minimize the potential for worker exposure, spills, or mixture with nonhazardous wastes; maintain accountability for and document the flow of hazardous materials from the point of receipt to point of turn-in for disposal; minimize waste generation wherever possible and feasible; provide the DEH with the information necessary to prepare reports per the hazardous waste management plan; maintain an accurate inventory of hazardous waste that reflects changes in operation.

- Hazardous Waste TSDF Operators - Each TSDF operator is responsible for ensuring compliance with hazardous waste regulations and permit standards applicable to the facility including maintaining operational and training records.

- Defense Reutilization and Marketing Service (DRMS) - This agency may or may not be located on the installation. Regardless, it is the single agency designated by DOD to provide hazardous waste disposal service to the installation on a pay-for-services-rendered basis. The DRMS is responsible for compliance with all USEPA, state, and Army (including installation guidance) regulations at its storage/disposal facility. The DRMS may sign a manifest on behalf of the IC but the commander is still responsible for correct waste classification and manifest information.

H. Key Compliance Definitions

These definitions were obtained from the Federal, DOD, and U.S. ARs cited previously.

- *Aboveground Tank* - a device that meets the definition of a "tank" in 40 CFR 260.10 and that is situated in such a way that the entire surface area of the tank is completely above the plane of the adjacent surrounding surface and the entire surface area of the tank (including the tank bottom) is able to be visually inspected (40 CFR 260.10).

- *Active Life* - the period from the initial receipt of hazardous waste at the facility until the Regional Administrator receives certification of final closure (40 CFR 260.10).

- *Active Portion* - that portion of a facility where treatment, storage, or disposal operations are being or have been conducted and which is not a "closed portion" (40 CFR 260.10).

- *Acute Hazardous Waste* - any waste listed under 40 CFR 261.31 through 261.33(c) with a hazard code of "H." These include USEPA Hazardous waste numbers: F020, F021, F022, F023, F026, and F027 (40 CFR 261.31 through 261.33).

- *Ancillary Equipment* - any device including, but not limited to piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of hazardous waste from its point of generation to a storage or treatment tank(s), between hazardous waste storage and treatment tanks to a point of disposal onsite, or to a point of shipment offsite (40 CFR 260.10).

- *Aquifer* - a geologic formation or group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs (40 CFR 260.10).

- *Boiler* - an enclosed device using controlled flame combustion and having the following characteristics:
    1. the unit has physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases
    2. the unit's combustion chamber and primary energy recovery section(s) must be of integral design
    3. while in operation the unit maintains a thermal energy recover efficiency of at least 60 percent
    4. the unit has been approved by the Administrator (40 CFR 260.10).

- *Certification* - a statement of professional opinion based upon knowledge and belief (40 CFR 260.10).

- *Characteristics of Hazardous Waste* - the characteristics of ignitability, corrosivity, reactivity, and toxicity which identify hazardous waste (40 CFR 261.20 through 261.24).

- *Chemical Warfare Agent* - a substance, which because of its chemical properties is used in military operations to kill, seriously injure, or incapacitate humans or animals or deny use of indigenous resources (AR 200-1, Glossary).

- *Closed Portion* - the portion of a facility which has been closed in accordance with the approved closure plan and all applicable closure requirements (40 CFR 260.10).

- *Component* - refers to either the tank or the ancillary equipment of the tank system (40 CFR 260.10).

- *Consignee* - the ultimate TSDF in a receiving country to which the hazardous waste will be sent (40 CFR 262.51).

- *Container* - any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled (40 CFR 260.10).

- *Container* - in relation to used oil, any portable device in which material is stored, transported, treated, disposed of, or otherwise handled (40 CFR 279.1).

- *Containment Building* - a hazardous waste management unit that is used to store or treat hazardous waste under 40 CFR 264.1100 through 264.1103 and 40 CFR 265.1100 through 1103 (40 CFR 260.10).

- *Contingency Plan* - a document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment (40 CFR 260.10).

- *Corrective Action Management Unit (CAMU)* - an area within a facility that is designated by the Regional Administrator under 40 CFR 264 subpart S, for the purpose of implementing corrective action requirements under 264.101 and RCRA Section 3008(h). A CAMU shall only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility (40 CFR 264.10).

- *Corrosion Expert* - a person who, by reason of knowledge of the physical sciences and the principles of engineering and mathematics, acquired by a professional education and related practical experiences is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be certified as being qualified by the National Association of Corrosion Engineers (NACE) or be a registered professional engineer who has certification and licensing that includes education and experience in corrosion control and or buried or submerged metal piping systems or tanks (40 CFR 260.10).

- *Debris* - solid material exceeding a 60 millimeter (mm) particle size that is intended for disposal and that is: a manufactured object; or plant or animal matter; or natural geologic material. The following materials are not debris:

any material for which a specific treatment standard is provided; process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emissions residues; and intact containers of hazardous waste that are not ruptured and retain at least 75 percent of their original volume (40 CFR 268.2).

- *Designated Facility* - a hazardous waste TSDF that is identified on a manifest as the destination of a hazardous waste shipment. The facility must have an appropriate permit, interim status, or be regulated under specific recycling requirements (40 CFR 260.10).

- *Dike* - an embankment or ridge of either natural or manmade materials used to prevent the movement of liquids, sludges, solids, or other materials (40 CFR 260.10).

- *Discharge or Hazardous Waste Discharge* - the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous waste into or onto any land or water (40 CFR 260.10).

- *Disposal* - the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or onto any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwaters (40 CFR 260.10).

- *Do-It-Yourself Use Oil Collection Center* - any site or facility that accepts aggregates and stores used oil collected only from household do-it-yourselfers (40 CFR 279.1).

- *Existing Tank* - a tank that is used for the storage or processing of used oil and that is in operation, or for which installation has commenced on, or prior to the effective date of the authorized used oil program for the state in which the tank is located (40 CFR 279.1).

- *Elementary Neutralization Unit* - a device used for neutralizing only those hazardous wastes that exhibit corrosivity (as defined in 40 CFR 261.22) or are listed in Subpart D of 40 CFR 261 only because of corrosivity and meet the definition of tank, tank system container, transport vehicle, or vessel in 40 CFR 261.10 (40 CFR 260.10).

- *EPA Acknowledgement of Consent* - the cable sent to the USEPA from the U.S. Embassy in a receiving country that acknowledges the written consent of the receiving country to accept the hazardous waste and describes the terms and conditions of the receiving country's consent to the shipment (40 CFR 262.51).

- *EPA Hazardous Waste Number* - the number assigned by USEPA to each hazardous waste listed in 40 CFR 261, Subpart D and to each characteristic identified in 40 CFR 261, Subpart C (40 CFR 260.10).

- *EPA Identification Number* - the number assigned by USEPA to each generator, transporter, and TSDF (40 CFR 260.10).

- *Existing Hazardous Waste Management (HWM) Facility or Existing Facility* - a facility which was in operation or for which construction commenced on or before 19 November 1980 (40 CFR 260.10).

- *Existing Portion* - the land surface area of an existing waste management unit, included in the original Part A permit application, on which wastes have been placed prior to the issuance of a permit (40 CFR 260.10).

- *Existing Tank System or Existing Component* - a tank system or component that is used for the storage or treatment of hazardous waste and that is in operation, or for which installation has commenced on or before 14 July 1986. Installations will have been considered to be commenced if the owner or operator has obtained all Federal, state, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system and if either:
    1. a continuous onsite physical construction of the site or installation program has begun, or
    2. the owner or operator has entered into contractual obligations that cannot be canceled or modified without substantial loss for physical construction of the site or installation of the tank system to be completed within a reasonable time (40 CFR 260.20).

- *Facility* - all contiguous land and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (i.e., one or more landfills, surface impoundments, or combination of them) (40 CFR 260.10).

- *Final Closure* - the closure of all hazardous waste management units at the facility in accordance with all applicable closure requirements so that hazardous waste management activities under 40 CFR 264 and 265 are no longer conducted at the facility unless subject to the provisions of 262.34 (40 CFR 260.10).

- *Food-Chain Crops* - tobacco, crops grown for human consumption, and crops grown for feed for animals whose products are consumed by humans (40 CFR 260.10).

- *Free Liquids* - liquids which readily separate from the solid portion of a waste under ambient temperature and pressure (40 CFR 260.10).

- *Freeboard* - the vertical distance between the top of a tank or surface impoundment dike, and the surface of the waste contained within it (40 CFR 260.10).

- *Generator* - any person, by site, whose act or process produces hazardous waste identified or listed in 40 CFR 261, or whose act first causes a hazardous waste to become subject to regulation (40 CFR 260.10). (NOTE: This typically is used to refer to an installation producing hazardous waste in quantities greater than 1000 kg (2200 lb) per month.)

- *Good Management Practice (GMP)* - schedules of activities, prohibitions of practices, maintenance procedures, and other management procedures, to prevent or reduce hazards to the environment.

- *Groundwater* - water below the land surface in a zone of saturation (40 CFR 260.10).

- *Halogenated Organic Compounds (HOC)* - those compounds having a carbon-halogen bond which are listed in Appendix 4-9 (40 CFR 268.2).

- *Hazardous Debris* - debris that contains a hazardous waste or that exhibits a characteristic of hazardous waste (40 CFR 268.2).

- *Hazardous Waste* - a solid waste identified as a characteristic or listed hazardous waste in 40 CFR 261.3 (40 CFR 260.10).

- *Hazardous Waste Constituent* - a constituent that caused the hazardous waste to be listed in 40 CFR 261, Subpart D (lists of hazardous wastes from nonspecific and specific sources, and listed hazardous wastes), or a constituent listed in the table of maximum concentrations of contaminants for the toxicity characteristic (40 CFR 260.10).

- *Hazardous Waste Management Unit* - a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is significant likelihood of mixing hazardous waste constituents in the same area. Examples are a surface impoundment, a waste pile, a treatment area, a landfill cell, an incinerator, a tank and its associated piping and underlying containment system and a container storage area. A container alone does not constitute a unit; the unit includes containers and the land or pad upon which they are placed (40 CFR 260.10).

- *Household "Do-It-Yourselfer" Used Oil* - oil that is derived from households, such as used oil generated by individuals who generate used oil through the maintenance of their personal vehicles (40 CFR 279.1).

- *Incinerator* - an enclosed device using controlled flame combustion that neither meets the criteria for classification as a boiler nor is listed as an industrial furnace (40 CFR 260.10).

- *Incompatible Waste* - a hazardous waste that is unsuitable for (40 CFR 260.10):
    1. placement in a particular device or facility because it may cause corrosion or decay of containment materials (i.e., container liners or tank walls)
    2. Commingling with another waste or material under uncontrolled conditions because the commingling conditions produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes, or gases, or flammable fumes or gases.

- *Individual Generation Site* - the contiguous site at or on which one or more hazardous wastes are generated. An individual generation site, such as a large manufacturing plant, may have one or more sources of hazardous waste, but is considered a single or individual generation site if the site or property is contiguous (40 CFR 260.10).

- *Industrial Furnace* - any of the following enclosed devices that are integral components of manufacturing processes and that use controlled flame devices to accomplish recovery of materials or energy; cement kilns, lime kilns, aggregate kilns, phosphate kilns, coke ovens, blast furnaces, smelting, melting and refining furnaces, titanium dioxide chloride process oxidation reactors, methane reforming furnaces, pulping liquor recovery furnaces, combustion devices used in the recovery of sulfur values from spent sulfuric acid, halogen acid furnaces, and other devices designated by the Administrator (40 CFR 260.10).

- *In-ground Tank* - a device meeting the definition of "tank" in 40 CFR 260.10 whereby a portion of the tank is situated to any degree within the ground, thereby preventing visual inspection of that external surface area of the tank that is in the ground (40 CFR 260.10).

- *Injection Wells* - a well into which fluids are injected (40 CFR 260.10).

- *Inner Liner* - a continuous layer of material placed inside a tank or container which protects the construction materials of the tank or container from the contained waste or reagents used to treat the waste (40 CFR 260.10).

- *Installation Inspector* - a person who by means of his knowledge of the physical sciences and the principles of engineering, acquired by a professional education and related practical experience, is qualified to supervise the installation of tank systems (40 CFR 260.10).

- *International Shipment* - the transportation of hazardous waste into or out of the jurisdiction of the United States (40 CFR 260.10).

- *Land Disposal* - includes, but is not limited to, any placement of hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or glacement in a concrete vault or bunker intended for disposal purposes (40 CFR 268.2).

- *Land Treatment Facility* - a facility or part of a facility at which hazardous waste is applied onto or incorporated into the soil surface; such facilities are disposal facilities if the waste will remain after closure (40 CFR 260.10).

- *Landfill* - a disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a land treatment facility, a surface impoundment, an underground injection well, a salt bed formation, an underground mine, or a cave (40 CFR 260.10).

- *Landfill Cell* - a discrete volume of a hazardous waste landfill which uses a liner to provide isolation of wastes from adjacent cells or wastes. Examples are trenches and pits (40 CFR 260.10).

- *Large Quantity Generator (LQG)* - see Generator.

- *Leachate* - any liquid, including any suspended components in the liquid, that has percolated through or drained from hazardous waste (40 CFR 260.10).

- *Leak Detection System* - a system capable of detecting the failure of either the primary or secondary containment structure or the presence of a release of hazardous waste or accumulated liquid in the secondary structure. Such a system must employ operational controls (i.e., daily visible containment for releases into the secondary containment system of aboveground tanks) or consist of an interstitial monitoring devise designed to detect continuously and automatically the failure of the primary or secondary containment structure or the presence of a release of hazardous waste into the secondary containment structure (40 CFR 260.10).

- *Liner* - a continuous layer of natural or manmade materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate (40 CFR 260.10).

- *Management or Hazardous Waste Management (HWM)* - the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous waste (40 CFR 260.10).

- *Manifest* - the shipping document originated and signed by the generator containing the information required by 40 CFR 262, Subpart B (40 CFR 260.10).

- *Manifest Document Number* - the USEPA 12-digit ID No. assigned to the generator plus a unique 5-digit document number assigned to the manifest by the generator for recording and reporting purposes (40 CFR 260.10).

- *Miscellaneous Unit* - a hazardous waste management unit where hazardous waste is treated, stored, or disposed of and that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground injection well with appropriate technical standards under 40 CFR 146, containment building, or unit eligible for a research development and demonstration permit under 40 CFR 270.65 (40 CFR 260.10).

- *Movement* - that hazardous waste transported to a facility in an individual vehicle (40 CFR 260.10).

- *National Response Center (NRC)* - the Washington D.C. Headquarters that coordinates activities relative to pollution emergencies. It is located at Headquarters U.S. Coast Guard (USCG) (AR 200-1, Glossary).

- *New Hazardous Waste Management Facility* - a facility which began operation, or for which construction commenced after 21 October 1976 (40 CFR 260.10).

- *New Tank* - in relation to used oil, a tank that will be used to store or process used oil and for which installation has started after the effective date of the authorized used oil program for the state in which the tank is located (40 CFR 279.1).

- *New Tank System or New Component System* - a tank system or component that will be used for the storage and treatment of hazardous waste and for which installation has commenced after 14 July 1986, except however, for purposes of 264.193(g)(2) and 265.193(g)(2), a new tank system is one for which construction commenced after 14 July 1986. (See also "existing tank system.") (40 CFR 260.10).

- *Nonwastewaters* - wastes that do not meet the criteria for wastewaters (40 CFR 268.2).

- *Off-specification Used Oil* - used oil burned for energy recovery and any fuel produced from used oil that exceeds the following allowable limits: (40 CFR 279)

Arsenic	5 parts per million (ppm) maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash Point	100 degrees F (^{O}F) minimum
Total halogens	4000 ppm maximum

- *On-Ground Tank* - a device meeting the definition of "tank" in 40 CFR 260.10 and that is situated in such a way that the bottom of the tank is on the same level as the adjacent surrounding surface so that the external tank bottom cannot be visibly inspected (40 CFR 260.10).

- *Onsite* - the same or geographically continuous property which may be divided by a public right-of-way, provided the entrance and exit between the properties is at a cross-roads intersection and access is by crossing as opposed to going along the right-of-way (40 CFR 260.10).

- *Open Burning* - the combustion of any material without the following characteristics:
  1. control of combustion air to maintain adequate temperature for efficient combustion
  2. containment of the combustion-reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion
  3. control of emission of the gaseous combustion products (40 CFR 260.10).

- *Partial Closure* - the closure of a hazardous waste management unit in accordance with the applicable closure requirements of 40 CFR 264 and 265 at a facility that contains other active hazardous waste management units. For example, partial closure may include the closure of a tank (including its associated piping and underlying containment systems) while other units of the same facility continue to operate (40 CFR 260.10).

- *Pile* - any noncontainerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage that is not a containment building (40 CFR 260.10).

- *Point Source* - any discernible, confined, and discrete conveyance, including, but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture (40 CFR 260.10).

- *Primary Exporter* - any person who is required to originate the manifest for a shipment of hazardous waste, in accordance with 40 CFR 262, Subpart B or an equivalent state provision, that specifies the TSDF in a receiving country as the facility to which the hazardous waste will be sent and any intermediate arranging for the export (40 CFR 262.51).

- *Processing* - means chemical or physical operations designed to produce from used oil, or to make used oil more amenable for the production of fuel oils, lubricants, or other used oil-derived product. Processing includes, but is not limited to blending used oil with Virgin petroleum products, blending used oils to meet the fuel specification, filtration, simple distillation, chemical or physical separation and re-refining (40 CFR 279.1).

- *Publicly Owned Treatment Works (POTW)* - any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "state" or "municipality" (as defined by Section 502(4) of the CWA). This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment (40 CFR 260.10).

- *Pump Operating Level* - a liquid level proposed by the owner or operator and approved the Regional Administrator based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump (40 CFR 264.226(d)(3)).

- *Qualified Groundwater Scientist* - a scientist or engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields as may be demonstrated by state registration, professional certification, or completion of accredited university courses that enable that individual to make sound professional judgements regarding groundwater monitoring and contaminant fate and transport (40 CFR 260.10).

- *Receiving Country* - a foreign country to which a hazardous waste is sent for the purpose of treatment, storage, or disposal (except short-term storage incidental to transportation) (40 CFR 262.51).

- *Replacement Unit* - a landfill, surface impoundment or waste pile unit (40 CFR 260.10):
    1. from which all or substantially all of the waste is removed
    2. that is subsequently reused to treat, store, or dispose of hazardous waste.

  This does not apply to a unit from which waste is removed during closure, if the subsequent reuse solely involves the disposal of waste

from that unit and other closing units or corrective action areas at the facility, in accordance with an approved closure plan or USEPA or state approved corrective action.

- *Representative Sample* - a sample of a universe or whole (i.e., waste pile, lagoon, groundwater) which can be expected to exhibit the average properties of the universe or whole (40 CFR 260.10).

- *Re-refining Distillation Bottoms* - the heavy fractions produced by vacuum distillation of filtered and dehydrated used oil. The composition of still bottoms varies with column operation and feedback (40 CFR 279.1)

- *Restricted Wastes* - those categories of hazardous wastes that are prohibited from land disposal either by regulation or by statute; in other words, a hazardous waste that is restricted no later than the date of the deadline established in RCRA Section 3004 (40 CFR 268).

- *Runoff* - any rainwater, leachate, or other liquid that drains over land from any part of a facility (40 CFR 260.10).

- *Run-on* - any rainwater, leachate, or other liquid that drains over land onto any part of a facility (40 CFR 260.10).

- *Sludge* - any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant (40 CFR 260.10).

- *Small Quantity Generator (SQG)* - a generator who generates less than 1000 kg (2200 lb) of hazardous waste in a calendar month but more than 100 kg (220 lb) (40 CFR 260.10).

- *Storage* - the holding of hazardous wastes for a temporary period, at the end of which the hazardous wastes are treated, disposed of, or stored elsewhere (40 CFR 260.10).

- *Sump* - any pit or reservoir that meets the definition of tank and those troughs/trenches connected to it that serve to collect hazardous waste for transport to hazardous waste TSDFs; except that as used in the landfill, surface impoundment, and waste pile rules, "sump" means any lined pit or reservoir that serves to collect liquids drained from a leachate collection and removal system or leak detection system for subsequent removal from the system (40 CFR 260.10).

- *Surface Impoundment* - a facility or part of a facility that is a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials designed to hold an accumulation of liquid wastes or wastes containing free liquids and which is not an injection well (40 CFR 260.10).

- *Tank* - a stationary device designed to contain an accumulation of hazardous waste that is constructed primarily of nonearthen materials (i.e., wood, concrete, steel, plastic) which provide structural support (40 CFR 260.10).

- *Tank* - in relation to used oil, any stationary device, designed to contain an accumulation of used oil which is constructed primarily of nonearthen materials which provides structural support (40 CFR 279.1).

- *Tank System* - a hazardous waste storage or treatment tank and its associated ancillary equipment and containment system (40 CFR 260.10).

- *Thermal Treatment* - the treatment of hazardous waste in a device that uses elevated temperature as the primary means to change the chemical, physical, or biological character or composition of the hazardous waste (40 CFR 260.10).

- *Transfer Facility* - any transportation related facility including loading docks, parking areas, storage areas and other similar areas where shipments of hazardous wastes are held during the normal course of transportation (40 CFR 260.10).

- *Transit Country* - any foreign country, other than a receiving country, through which a hazardous waste is transported (40 CFR 260.10).

- *Transport Vehicle* - a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, railroad freight car, etc.) is a separate transport vehicle (40 CFR 260.10).

- *Transporter* - a person engaged in the offsite transportation of hazardous wastes by air, rail, highway, or water (40 CFR 260.10).

- *Treatability Study* - a study in which a hazardous waste is subjected to a treatment process to determine:
    1. whether the waste is amenable to the treatment process
    2. what pretreatment (if any) is required
    3. the optimal process conditions needed to achieve the desired treatment
    4. the efficiency of a treatment process for a specific waste or wastes, or
    5. the characteristics and volumes of residuals from a particular treatment process (40 CFR 260.10).

Also included in this definition for the purpose of the 261.4(e) and (f) exemptions are liner compatibility, corrosion, and other material compatibility studies and toxicological and health effects studies. A "treatability study" is not a means to commercially treat or dispose of hazardous waste.

- *Treatment* - any method, technique, or process, including neutralization, designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste nonhazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume (40 CFR 260.10).

- *Treatment Zone* - a soil area of the unsaturated zone of a land treatment unit within which hazardous constituents are degraded, transformed, or immobilized (40 CFR 260.10).

- *Underground Injection* - the subsurface emplacement of fluids through a bored, drilled or driven well; or through a dug well where the depth of the dug well is greater than than the largest surface dimension (40 CFR 260.10).

- *Underground Tank* - a device meeting the definition of "tank" in 40 CFR 260.10 whose entire surface area is totally below the surface and covered by the ground (40 CFR 260.10).

- *Unfit-for-Use Tank System* - a tank system that has been determined through an integrity assessment or other inspection to be no longer capable of storing or treating hazardous waste without posing a threat of release of hazardous waste to the environment (40 CFR 260.10).

- *Unsaturated Zone or Zone of Aeration* - the zone between the land surface and the water table (40 CFR 260.10).

- *United States* - the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Marianas Islands (40 CFR 260.10).

- *Uppermost Aquifer* - the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary (40 CFR 260.10).

- *Used Oil* - any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities (40 CFR 279.1).

- *Used Oil Aggregation Point* - any site or facility that accepts, aggregates, and/or stores used oil collected only from other used oil generation sites owned or operated by the owner or operator of the aggregation point, from which used oil is transported to the aggregation point in shipments of no more than 55 gal. Used oil aggregation points may also accept used oil from household do-it-yourselfers (40 CFR 279.1).

- *Used Oil Burner* - a facility where used oil not meeting the specification requirements is burned for energy recovery (40 CFR 279.1).

- *Used Oil Collection Center* - any site or facility that is registered/licensed/permitted/recognized by a state/county/municipal government to manage used oil and accepts/aggregates and stores used oil collected from used oil generators who bring used oil to the collection centers in shipments of no more than 208 L (55 gal). Used oil collection centers may accept used oil from household do-it-yourselfers (40 CFR 279.1).

- *Used Oil Fuel Marketer* - any person who conducts either of the following activities:
  1. directs a shipment of off-specification used oil from their facility to a used oil burner
  2. first claims that used oil that is to be burned for energy recovery meets used oil fuel specifications (40 CFR 279.1).

- *Used Oil Generator* - any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation (40 CFR 279.1).

- *Used Oil Processor/Re-refiner* - a facility that processes used oil (40 CFR 279.1).

- *Used Oil Transfer Facility* - any transportation related facility, including loading docks, parking areas, storage areas, and other areas where shipments of used oil are held for more than 24 hours (h) during the normal course of transportation and not longer than 35 days (40 CFR 279.2).

- *Used Oil Transporter* - any person who transports used oil, any person who collects used oil from more than one generator and transports the collected oil, and owners and operators of used oil transfer facilities. Used oil transporters may consolidate or aggregate loads of used oil for purposes of transportation, but, with the following exception, may not process used oil. Transporters may conduct incidental processing operations that occur in the normal course of used oil transportation (i.e., settling and water separation), but that are not designed to produce or make more amenable for production of used oil derived products or used oil fuel (40 CFR 279.1).

- *Wastewater Treatment Unit* - a device that is part of a wastewater treatment facility subject to regulation under Section 402 or 307 of the CWA and receives and treats or stores an influent wastewater that is a hazardous waste (as defined in 40 CFR 261.3) or that generates and accumulates a wastewater treatment sludge that is a hazardous waste, or treats or stores a wastewater treatment sludge and meets the definition of tank or tank system (40 CFR 260.10).

- *Wastewaters* - wastes that contain less than 1 percent by weight total organic compounds (40 CFR 268.2)

- *Zone of Engineering Control* - an area under the control of the owner/operator that upon detection of a hazardous waste release, can be readily cleaned up before the release of hazardous waste or hazardous constituents to groundwater or surface water (40 CFR 260.10).

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C (RCRA-C)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All Installations	4-1 through 4-12	(1)(2)(4)(6)(18)(23)(29)
All Generators:		
General	4-13 through 4-19	(1)(2)(19)(23)
Satellite Accumulation Points	4-20	(1)(2)(19)
Personnel Training	4-21 and 4-22	(1)(2)(19)
Conditionally Exempt Small Quantity Generators (CESQG)	4-23 through 4-26	(1)(2)(19)
Small Quantity Generators (SQG):		
General	4-27 through 4-30	(1)(5)(2)(19)
Containers	4-31 through 4-36	(1)(2)(19)
Container Storage Areas	4-37 through 4-39	(1)(2)(19)
Tank Systems Storage	4-40 through 4-42	(1)(2)(19)
Large Quantity Generators (LQG):		
General	4-43 through 4-50	(1)(2)(19)
Personnel Training Requirements	4-51 and 4-52	(1)(2)(4)(19)
Containers	4-53 through 4-58	(1)(2)(19)
Container Storage Areas	4-59 through 4-61	(1)(2)(19)
Tank Systems Storage	4-62 through 4-72	(1)(2)(19)
Containment Buildings	4-73 through 4-79	(1)(2)(19)
Transportation	4-80 through 4-84	(1)(2)(4)(6)(18)(23)
All Treatment/Storage/ Disposal Facilities (TSDFs)		
General	4-85 through 4-94	(1)(2)(4)(18)
Personnel Training Requirements	4-95 and 4-96	(1)(2)(4)(18)(19)(23)
Containers	4-97 through 4-101	(1)(2)(4)(18)
Container Storage Areas	4-102 through 4-104	(1)(2)(4)(18)(23)
Tank Systems Storage	4-105 through 4-115	(1)(2)(4)(18)(23)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(4) Safety and Health Officer
(5) Fire Department
(6) Director of Logistics (DOL)
(18) TSDF Operators (DEH, DOL, DRMS)
(19) Shop Activity Supervisor
(23) Defense and Revitalization Marketing Office (DRMO)
(29) Installation Commander (IC)

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All Treatment/Storage/ Disposal Facilities (TSDFs): (continued)		
Containment Buildings	4-116 through 4-122	(1)(2)(4)(18)(23)
Emissions from Process Vents	4-123 through 4-125	(1)(2)(4)(18)(23)
Air Emission Standards for Equipment Leaks	4-126 through 4-133	(1)(2)(4)(18)(23)
Documentation Requirements	4-134 through 4-145	(1)(2)(4)(18)(23)
Closure	4-146 through 4-150	(1)(2)(4)(18)(23)
Permitted TSDFs	4-151 through 4-163	(1)(2)(4)(18)(23)
Interim Status TSDFs	4-164 through 4-172	(1)(2)(4)(18)(23)
Export/Import of Hazardous Waste	4-173 through 4-180	(1)(2)(6)(23)
All Surface Impoundments	4-181	(1)(2)(18)(23)
Permitted Surface Impoundments	4-182 through 4-191	(1)(2)(18)(23)
Interim Status Surface Impoundments	4-192 through 4-195	(1)(2)(18)(23)
All Waste Piles	4-196	(1)(2)(18)(23)
Permitted Waste Piles	4-197 through 4-201	(1)(2)(18)(23)
Interim Status Waste Piles	4-202 through 4-205	(1)(2)(18)(23)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(4) Safety and Health Officer
(5) Fire Department
(6) Director of Logistics (DOL)
(18) TSDF Operators (DEH, DOL, DRMS)
(19) Shop Activity Supervisor
(23) Defense and Reutilization Marketing Office (DRMO)
(29) Installation Commander (IC)

GUIDANCE FOR WORKSHEET USERS
(continued)

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All Land Treatment Units	4-206	(1)(2)(18)(23)
Permitted Land Treatment Units	4-207 through 4-213	(1)(2)(18)(23)
Interim Status Land Treatment Units	4-214 through 4-217	(1)(2)(18)(23)
All Hazardous Waste Landfills	4-218 through 4-223	(1)(2)(18)(23)
Permitted Hazardous Waste Landfills	4-224 through 4-227	(1)(2)(18)(23)
Interim Status Hazardous Waste Landfills	4-228	(1)(2)(18)(23)
Permitted Incinerators	4-229 through 4-237	(1)(2)(18)(23)
Permitted Miscellaneous Units	4-238 through 4-240	(1)(2)(18)(23)
Interim Status Thermal Treatment	4-241 through 4-243	(1)(2)(18)(23)
Interim Status Chemical/ Physical/Biological Treatment	4-244 through 4-246	(1)(2)(18)(23)
Land Disposal of Restricted Wastes	4-247 through 4-256	(1)(2)(18)(19)(23)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(4) Safety and Health Officer
(5) Fire Department
(6) Director of Logistics (DOL)
(18) TSDF Operators (DEH, DOL, DRMS)
(19) Shop Activity Supervisor
(23) Defense and Reutilization Marketing Office (DRMO)
(29) Installation Commander (IC)

GUIDANCE FOR WORKSHEET USERS
(continued)

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
Used Oil	4-257	(1)(2)(6)(18)(19)(23)
Used Oil Generators:		
General	4-258 through 4-262	(1)(2)(6)(18)(19)(23)
Containers and Tanks	4-263 through 4-274	(1)(2)(6)(18)(19)(23)
Used Oil Collection Centers and Aggregation Points	4-275 through 4-277	(1)(2)(6)(18)(19)(23)
Used Oil Transportation	4-278 through 4-286	(1)(2)(6)(18)(19)(23)
Used Oil Burners	4-287 through 4-293	(1)(2)(6)(18)(19)(23)
Used Oil Marketing	4-294 through 4-298	(1)(2)(6)(18)(19)(23)
Used Oil Dust Suppression	4-299	(1)(2)(6)(18)(19)(23)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(4) Safety and Health Officer
(5) Fire Department
(6) Director of Logistics (DOL)
(18) TSDF Operators (DEH, DOL, DRMS)
(19) Shop Activity Supervisor
(23) Defense and Reutilization Marketing Office (DRMO)
(29) Installation Commander (IC)

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C (RCRA-C)

Plans and Maps to Review

- Hazardous Waste Management Plan
- Waste analysis plan(s)
- Part A/B permit including:
  -inspection plan
  -training plan
  -closure/post-closure plans
- Hazardous waste inventory

Records to Review

Generator (including TSDFs if they are also generators):

- Notification (USEPA ID No.)
- Hazardous waste manifests
- Manifest exception reports
- Biennial reports (LQGs only)
- Delistings
- Speculative accumulation records
- Land disposal restriction certifications
- Employee training documentation
- Hazardous waste tank integrity assessments
- Contingency plan (LQGs only)
- Notifications of hazardous waste oil fuel marketing or blending activity
- Accumulation point inspection records
- Used Solvent Elimination Program Contract (DEH or DOL)

In addition to the above, TSDFs would require:

- Location map of TSDFs
- Unmanifested waste reports
- Facility review reports (Inspection log)
- Operating record
- Groundwater monitoring records and annual reports (where required)
- Facility Biennial reports
- Closure/Post-Closure Notices (where applicable)
- Other documents as required by the Permit

Physical Features to Examine

- Disposal sites
- Accumulations points
- Incinerators
- Vehicles used for transport
- Storage facilities (including drums)
- Surface impoundments

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Safety and Health Officer
- Fire Department
- Director of Logistics (DOL)
- TSDF Operators (DEH, DOL, DRMS)
- Shop Activity Supervisor
- Defense and Reutilization Marketing Office (DRMO)
- Director of Personnel and Community Activities

OPERATIONS/PROCESSES AND RELATED HW STREAMS*

***Not all operations listed will generate HW. Wastes listed may be a solid waste, a state HW or a RCRA HW.**

Directorate of Logistics

- maintenance/transportation operations (opns) - solvents, hydraulic fluids, fuels, ethylene glycol. battery acids, paint washes, oils, brake fluid, spill residue, contaminated rags, oil filters, heavy metal contaminated sludges, brake pads, batteries
- painting operations - paint strippers, paint thinners, paint wastes (slop), epoxy (resin), filters, abrasive blast residue
- battery shop - battery acids, spill residue, alkaline battery fluids, heavy metals
- materials central storage facility - spill residue, HM that become HW due to shelf-life, expiration or package deterioration (check supplies, inventory management, waste management)
- drycleaning/laundry operations - filters, perchloroethylene, corrosives

Directorate of Engineering & Housing/Directorate of Public Works

- vehicle and engine maintenance (maint) operations - solvents, hydraulic fluids, fuels, ethylene glycol, battery acids, paint wastes, oils, brake fluid, spill residue, contaminated rags, oil filters, heavy metal contaminated sludges, brake pads, batteries
- residential/occupational housing maintenance - lead paint debris, lead paint, paint wastes, solvents, oils, contaminated rags
- electrical maintenance - oils, solvents, PCB (transformer fluids)
- roads and grounds maintenance - oils, fuels, spill residue, paint
- energy operations - boiler blowdown wastes, feed water chemicals, feed water testing wastes
- carpentry shops - varnishes, stains, adhesives, sealants
- metal shops - cutting oils, toxic metals
- painting operations - paint strippers, paint thinners, paint wastes (slop), epoxy (resin), filters, residue from abrasive blasting operations
- incinerator - ash

Medical Facility

- pathology dept - alcohol, methanol, acetone, formaldehyde, xylene, miscellaneous chemicals
- x-ray operations - silver recovery unit
- pharmacy - pharmaceuticals

Motorpools - (track waste from point of generation to storage location) solvents, hydraulic fluids, fuels, ethylene glycol, battery acids, paint wastes, oils, brake fluid, spill residue, contaminated rags, oil filters, heavy metal contaminated sludges, brake pads, batteries

Airfields - solvents, hydraulic fluids, fuels, ethylene glycol, battery acids, paint wastes, oils, brake fluid, spill residue, contaminated rags, oil filters, heavy metal contaminated sludges, brake pads, paint strippers, paint thinners, epoxy (resin), filters, batteries, residue from abrasive blasting operations

NBC Operations/Storage Areas - DS2, STB, decontamination kits, filters, batteries

Print Plant - inks, solvents, rags

TASC - photographic processing chemicals, paint wastes, inks, solvents, residue from abrasive blasting operations, waste from plastics modeling operations

Open Burning/Open Detonation sites - check permit and operations for compliance

TSDF - check permit and operations for compliance

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
4-1. Determine actions or changes since previous review of hazardous waste management (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)
...	...
4-2. Copies of all relevant Federal and state regulations, DOD directives, ARs, and guidance documents on hazardous waste should be maintained at the installation (GMP).	Verify that current copies of the following, which are applicable, are maintained at the installation: (1)(5)(6)(18) - 40 CFR 260, *Hazardous Waste Management Systems: General.* - 40 CFR 261, *Identification and Listing of Hazardous Waste.* - 40 CFR 262, *Standards Applicable to Generators of Hazardous Waste.* - 40 CFR 263, *Standards Applicable to Transporters of Hazardous Waste.* - 40 CFR 264, *Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.* - 40 CFR 265, *Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.* - 40 CFR 266, *Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities.* - 40 CFR 268, *Land Disposal Restriction.* - 40 CFR 270, *The Hazardous Waste Permit Program.* - 40 CFR 279, *Standards for the Management of Used Oil.* - 49 CFR 171, *General Information, Regulations, and Definitions.* - 49 CFR 172, *Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements.* - 49 CFR 173, *General Requirements for Shipments and Packaging.* - 49 CFR 178, *Specifications for Packaging.* - NFPA, *Fire Protection Guide of Hazardous Materials.* - DEQPPM 80-5, *DOD Hazardous Materials Disposal Policy.* - DEQPPM 80-8, *RCRA Hazardous Waste Management Regulations.* - AR 200-1, *Environmental Protection and Enhancement*, 23 May 1990. - Policy Letters. - Applicable state and local regulations. Determine if installation environmental staff is familiar with and knowledgeable about regulatory requirements. (1)(4) (NOTE: State may obtain authorization to operate the RCRA program from USEPA, provided regulations at least as stringent as USEPA regulations have been passed and an agreement has been signed with USEPA. State may pass more stringent regulations.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-3. Installations are required to comply with applicable state and local requirements (FFCA, Section 102(a)(3)).	Verify that the installation is complying with state and local requirements. (1) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2) (NOTE: Examples of areas regulated by state and local agencies or regulated more stringently than the Federal regulations: - additional manifest requirements - more frequent reporting requirements - transportation of hazardous waste - identification of special waste or waste categories - regulation of specific substances as hazardous waste such as: medical, pathological, and infectious wastes; used oil; explosives; used batteries - SQG requirements - disposal requirements - construction and operation of storage and disposal facilities.)
...	...
4-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes NOVs, letters of citation, promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2)(29) Verify that the existing system addresses the issues associated with hazardous waste management by: (1)(2)(29) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)(29) Determine how hazardous waste is managed by starting at a point of generation and identifying through interviews, site visits, and paperwork review: (1)(2)(29) - how, where and when the waste was generated - how the waste was identified as being hazardous - how waste is handled to prepare it for disposal or treatment - where the waste is finally disposed of or treated.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding.)	Determine if any new regulations concerning hazardous waste have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the regulatory requirement and the basis of funding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...
4-6. Each installation will have a written hazardous waste management plan (AR 200-1, para 6-4b).	Verify that the DEH has prepared a hazardous waste management plan and provided copies to all facility personnel that generate, transport, treat, store, and dispose of hazardous waste. (1) Verify that the plan is signed by the IC and includes the following: (1) - responsibilities of installation organizations and personnel for hazardous waste activities - USEPA and state ID No. - types and quantities of hazardous waste for each hazardous waste generating activity, including tenants - description of waste minimization projects - locations of all hazardous waste storage, treatment and disposal units - description of installation procedures to treat, store, dispose of, transport onpost, or offer for transport offsite hazardous waste - procedures to analyze hazardous waste - inspection procedures - procedures for the prevention of unauthorized entry to the hazardous waste units - description of training programs - contingency plan measures - procedures to temporarily treat, store, dispose of hazardous waste if the use of existing facilities is unavailable - copies of any RCRA permits - location of the SPCC Plan and the ISCP.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-7. Each installation will conduct an annual inventory of hazardous waste (AR 200-1, para 6-4c).	Verify that the DEH has conducted an annual inventory of hazardous wastes, that it is certified by the IC, and that it includes: (1) - the hazardous waste generators - names, addresses, and state/USEPA ID No. of offsite TSDFs receiving the installation's hazardous waste - the name and USEPA ID No. of each transporter used for offsite shipments of hazardous waste - description, USEPA hazardous waste number (from 40 CFR 261, subpart C or D), DOT hazard class, and quantity of each hazardous waste shipped offsite - the USEPA ID No. of the offsite facility to which the waste was shipped - a description of efforts undertaken during the year to reduce the volume and toxicity of wastes generated - a description of the changes in volume and toxicity of waste actually achieved in comparison to previous years, beginning with 1985.
...	...
4-8. Army material resources should be procured and used in a way that minimizes waste production (AR 200-1, para 1-27a and 6-6).	Verify that the DOL monitors installation-wide use of hazardous materials to ensure progress in meeting HAZMIN goals and provides quarterly progress reports to the DEH. (6) Verify that the DOL provides semiannual progress reports to the IC on the reduction of use and toxicity of hazardous materials, recommending opportunities for further reduction. (6)
...	...
4-9. Installations are required to report HAZMIN efforts (AR 200-1 para 6-6c(1)).	Verify that the installation submits, by 1 March of even numbered years, USEPA Form 8700-13A/B to the appropriate state or USEPA regional administrator (depending upon whether the state has an USEPA-approved RCRA program). (1)(6) Verify that the report includes a description of efforts undertaken during the year to reduce the volume and toxicity of hazardous waste generated, and a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years. (1)(6)
...	...
4-10. Munitions and ordnance which have been designated as waste are required to be handled according to RCRA hazardous waste management requirements (AR 200-1, para 6-7e).	Confirm that if installation has explosive ordnance that become waste, the installation proactively adheres to AR 200-1, and appropriate state and Federal RCRA requirements. (1)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-11. Chemical warfare agents destined for disposal will be managed as hazardous waste under RCRA, if applicable (AR 200-1, para 6-9a).	Verify that if the installation does have chemical warfare agents destined for disposal, they are treated as hazardous waste under RCRA. (1) Verify that the IC reports through command channels to Headquarters, Department of the Army (HQDA) (DALO-SMZ) on the handling, use, inventory, or disposal of chemical warfare agents. Commanders will report on chemical accidents and incidents as required. (1)(18)
...	...
4-12. Disposal of medical, dental, and veterinary supplies and wastes must meet specific requirements (AR 200-1, para 6-11).	Verify that medical, dental and veterinary supplies and wastes that are RCRA listed or characteristic wastes are managed through the DRMO or a commercial contract with a permitted disposal firm. (1)(2)(23) Determine if the generator possess the technical capability and facilities to dispose of items that are not RCRA listed but should be treated as a RCRA hazardous waste. (1)(23) Verify that if the generator cannot dispose of the hazardous waste according to approved methods, the generator contacts DRMO for guidance. (1)(23) Confirm that IC disposing of such medical, dental, and veterinary wastes by land burial maintain records on: (1)(23) - quantities disposed - disposal method used - disposal site location.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL GENERATORS **General** **4-13.** Installations that generate solid wastes must determine if the wastes are hazardous wastes (40 CFR 261.3, 262.11, and 261.24).	(NOTE: Expired materials which cannot be excessed, and unidentified waste materials, may have to be disposed of as hazardous waste depending on their constituents. Determination of whether or not a waste is a hazardous waste can be done through one of the following: - knowledge of all the constituents of the waste - laboratory analysis.) Discuss with staff how wastes generated on the installation were identified and classified. (2)(19) Determine if the installation followed USEPA criteria for identifying the characteristics of hazardous waste and USEPA's listed wastes in 40 CFR 261. (2)(19) Determine whether the installation generates, transports, treats, stores, or disposes of any hazardous waste (see Appendix 4-1 for guidance) and the quantity. If so, go to the appropriate section. (2)(19) (NOTE: The following solid wastes are not considered to be hazardous wastes: - household waste - fly ash waste, bottom ash waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels except for installations that burn hazardous waste - drilling fluids, produced waters and other wastes affiliated with the explorations, development, or production of crude oil, natural gas, or geothermal energy - solid waste which consists of discarded arsenical-treated wood or wood products which fail the test for Toxicity Characteristics for Hazardous Waste Codes 0004 through 0017 and which is not a hazardous waste for any other reason if the waste is generated by persons who utilize the arsenical treated wood and wood products for those materials' intended end use - petroleum contaminated media and debris that fail the test for Toxicity Characteristic (Hazardous Waste Codes D018 through D043 only) and and are required to meet the corrective action regulations under 40 CFR 280 (see *RCRA-I*)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-13. (continued)	- used chlorofluorocarbon refrigerants from totally enclosed heat transfer equipment, including mobile air conditioning systems, mobile refrigeration and commercial and industrial air conditioning and refrigeration systems that use chlorofluorocarbons as the heat transfer fluid in a refrigeration cycle, provided that the refrigerant is reclaimed for further use
	- used oil containing less than 1000 ppm halogens
	- nontern plated used oil filters that are not mixed with a listed hazardous waste if these oil filters have been gravity hot-drained using one of the following methods:
	  - puncturing the filter anti-drain back valve or the filter dome end and hot-draining
	  - hot-draining and crushing
	  - dismantling and hot-draining
	  - any other equivalent hot-draining method which will remove used oil.)
	
	Verify that wastes are tested for toxicity characteristics or are previously identified as toxic (see Appendix 4-2). (1)(2)(19)(23)
	
	Determine if wastes contain contaminants in greater concentrations than the Toxicity Characteristics listed in Appendix 4-3. (1)(2)(19)(23)
	
	Verify that wastes are tested for ignitability, corrosivity, and reactivity. (1)(2)(19)(23)
	
	Verify that wastes which exceed toxicity, ignitability, corrosivity, or reactivity characteristics are handled as hazardous wastes. (1)(2)(19)(23)
	
	Verify that all data, including quality assurance data is maintained and kept available for reference or inspection. (1)(2)(19)(23)

...	...
4-14. Installations that generate hazardous wastes must test their wastes or use prior knowledge to determine if it is restricted from land disposal (40 CFR 268.7).	Determine whether the generator tests for restricted wastes. (1)(2)(19) Determine if the installation generates restricted wastes by reviewing test results (see Appendix 4-4). (1)(2)(19)(23) (NOTE: Use the Land Disposal section questions for generators of these wastes in addition to the questions in this section.)
...	...
4-15. An installation must not offer its hazardous waste to transporters or to TSDFs that have not received an USEPA ID No. (40 CFR 262.12(c)).	Examine records pertaining to TSDF and transporter contract awards; verify that all transporters of hazardous wastes or TSDFs have an USEPA ID No. (1)(2)(18)(19)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-16. All generators of hazardous waste must submit a biennial report to the Regional Administrator by 1 March of even numbered years (40 CFR 262.40(b) and 262.41(a)).	Verify that the biennial report (USEPA Form 8700-13A) is complete and was submitted in a timely manner. (1)(2)(19) Verify that copies are kept for 3 yr. (1)(2)(19) (NOTE: Reporting for exports of hazardous waste is not required.) (NOTE: This does not apply to CESQGs.)
...	...
4-17. Installations that are generators are required to use manifests, and maintain records (40 CFR 262.40(a), 262.40 (b), and 262.40(d)).	Verify that copies of manifests are kept for 3 yr. (1)(2)(18)(19) (NOTE: Periods of retention for manifests may be extended automatically during the course of any unresolved enforcement action.)
...	...
4-18. Generators are required to keep records of waste analyses, test and waste determinations (40 CFR 262.40(c)).	Verify that appropriate records are kept for at least 3 yr from the date the waste was last sent to onsite or offsite TSDF. (1)(2)(19)
...	...
4-19. Specific persons should be designated responsible for hazardous waste storage areas, and the precise nature of their responsibilities should be specified (GMP).	Verify that specific individuals have been designated responsible for hazardous waste storage areas. (1)(2)(18)(19) Verify that the individuals designated responsible for hazardous waste storage areas are aware of the precise nature of their responsibilities. (1)(2)(18)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Satellite Accumulation Points **4-20.** All generators may accumulate as much as 55 gal of hazardous waste or 1 qt of acutely hazardous waste in containers at or near any point of initial generation without complying with the requirements for onsite storage if specific standards are met (40 CFR 262.34(c)). (NOTE: This type of storage is often referred to as a satellite accumulation point.) ...	Verify that the satellite accumulation point is near the point of generation and is under the control of the operator of the waste generating process. (1)(2)(19) Determine how much waste is being generated by interviewing personnel. (1)(2)(19) Verify that the containers are in good condition and are compatible with the waste stored in them and that the containers are kept closed except when waste is being added or removed. (1)(2)(19) Verify that the containers are marked HAZARDOUS WASTE or other appropriate identification. (1)(2)(19) (NOTE: See Appendix 4-1 and 4-5 for a guidance list of hazardous and acute wastes.) Verify that when waste is accumulated in excess of quantity limitations the following actions are taken by interviewing the shop managers: (1)(2)(19) - the excess container is marked with the date the excess amount began accumulating - the waste is transferred to a 90 day or permitted storage area within 3 days. ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Personnel Training **4-21.** All generator personnel who handle hazardous waste should meet certain training requirements (GMP).	Verify that the training program is directed by a person trained in hazardous waste management procedures. (1)(2)(19) Verify that the training program includes the following: (1)(2)(19) - contingency plan implementation - key parameters for automatic waste feed cutoff system - procedures for using, inspecting, and repairing emergency and monitoring equipment - operation of communications and alarm systems - response to fire or explosion - response to leaks or spills - waste turn-in procedures - identification of hazardous wastes - container use, marking, labeling, and on-facility transportation - manifesting and off-facility transportation - accumulation point management - personnel health and safety and fire safety - facility shutdown procedures. Verify that new employee training is completed within 6 mo of employment. (1)(2)(19) Verify that an annual review of initial training is provided. (1)(2)(19) Verify that employees do not work unsupervised until training is completed. (1)(2)(19) Verify specifically that accumulation point managers and hazardous waste handlers have been trained. (1)(2)
...	...
4-22. Training records must be maintained for all generator staff who manage hazardous waste (GMP).	Examine training records and verify they include the following: (1)(2) - job title and description for each employee by name - written description of how much training each position will obtain - documentation of training received by name. Determine if training records are retained for 3 yr after employment at the facility. (1)(2) Verify that records are transferred with employees. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS (CESQG)	

4-23. Generators of no more than 100 kg (220 lb)/mo of hazardous waste may qualify as CESQGs when they meet specific requirements (40 CFR 261.5).	Verify that the following quantity and storage limitations are met: (1)(2)(19)
	- no more than 100 kg (220 lb) of hazardous waste is generated in a calendar month
	- total onsite accumulation does not exceed more than 1000 kg (2200 lb) of hazardous waste
	- no more than 1 kg (2.2 lb) of acute hazardous waste (see Appendix 4-5) is generated in a calendar month, or
	- no more than a total of 100 kg (220 lb) of any residue or contaminated soil, waste, or other debris resulting from the cleanup of any acute wastes in a calendar month is generated.
	
	Verify that wastes are either treated or disposed of in an onsite facility or delivered to an off-site TSDF, either of which are one of the following: (1)(2)(19)
	- permitted
	- interim status
	- authorized to manage hazardous waste by a state with an approved hazardous waste management program
	- permitted, licensed, or registered by a state to manage municipal or industrial solid waste
	- a facility which does one of the following:
	  - beneficially uses or reuses, or legitimately recycles or reclaims its waste
	  - treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation.
	
	(NOTE: Hazardous waste generators who meet the requirements for being a CESQG, are not required to meet any of the standards outlined in 40 CFR 262 through 266 (except 262.11), 268, and 270.)
	
	(NOTE: If a installation mixes its waste with used oil, the mixture is subject to the requirements in Subpart G of 40 CFR 279 if it is destined to be burned for energy recovery.)
	
	(NOTE: Quantities of acute hazardous waste greater than listed amounts are required to be handled according to the standards in 40 CFR 262 through 266, 268, 270, and 124.)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-24. Empty containers at CESQGs previously holding hazardous wastes must meet the regulatory definition of 'empty' before they are exempted from hazardous waste requirements (40 CFR 261.7).	Verify that for containers or inner liners holding hazardous wastes that all wastes are removed that can be removed using common practices and no more than 2.5 centimeters (cm) (1 in) of residue remains. (1)(2)(19) Verify that for containers or inner liners if the container is less than or equal to 417 L (110 gal) that no more than 3 percent by weight of total container capacity remains. (1)(2)(19) Verify that for containers or inner liners when the container is greater than 417 L (110 gal) no more than 0.3 percent by weight of the total container capacity remains. (1)(2)(19) Verify that for containers that held a compressed gas the pressure in the container approaches atmospheric. (1)(2)(19) Verify that for containers or inner liners that held an acute hazardous waste listed in Appendix 4-5 that one of the following is done: (1)(2)(19) - it is triple rinsed - it is cleaned by another method identified through the literature or testing as achieving equivalent removal - the inner liner is removed.
...	...
4-25. Containers at CESQGs should be managed in accordance with good management practices (GMP).	Verify the following by inspecting storage areas: (1)(2)(19) - containers are not stored more than two high and have pallets between them - containers of highly flammable wastes are electrically grounded (check for clips and wires and make sure wires lead to ground rod or system) - at least 91 cm (3 feet (ft)) of aisle space is provided between rows of containers.
...	...
4-26. Containers of hazardous waste should be kept in designated storage areas at CESQGs (GMP).	Verify that all hazardous waste containers are identified and stored in appropriate areas. (1)(2)(19) (NOTE: Any unidentified contents of solid waste containers and/or containers not in designated storage areas must be tested to determine if solid or hazardous waste requirements apply.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
SMALL QUANTITY GENERATORS (SQGs) **General**	
4-27. Generators of more than 100 kg (220 lb) but less than 1000 kg (2200 lb) of hazardous waste per month may qualify as a SQG which can accumulate hazardous waste onsite for 180 days without a permit if specific conditions are met (40 CFR 262.34 (d)(1), 262.34(d)(4), 262.34(e) and 262.34(f)).	Inspect containers, storage, and records. (1)(2)(5)(19) Verify that no more than 1000 kg (2200 lb) of hazardous waste is generated in any month. (1)(2)(5)(19) Verify that the onsite accumulation time does not exceed 180 days. (1)(2)(5)(19) (NOTE: The 180 day time period is extended to 270 days if the waste must be transported more than 200 mi to a TSDF.) Verify that no more than 6000 kg (13,200 lb) is allowed to accumulate at the installation. (1)(2)(5)(19) Verify that containers are marked with the date accumulation began and the words HAZARDOUS WASTE. (1)(2)(5)(19) Verify that the containers and the areas where containers are stored meet the requirements outlined in the *SQGs: Containers*, *SQGs: Container Storage*, and *SQGs: Tank Systems Storage*. (1)(2)(5)(19) (NOTE: When a SQG exceeds the quantity generation or the amount accumulation it becomes subject to either LQG requirements or all TSDF requirements. When a SQG exceeds the storage time limitation, it becomes subject to full TSDF regulation.)
...	...
4-28. SQGs that generate, transports, or handle hazardous wastes must obtain an USEPA ID No. (40 CFR 262.12(a), 262.12 (b), 264.11, and 265.11).	Examine documentation from USEPA for the installation's generator ID No.. (1)(2)(19) Verify that correct ID No. is used on all appropriate documentation (i.e., manifests). (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-29. SQGs of hazardous waste are required to use manifests and keep records of hazardous waste activity (40 CFR 262.20, 262.42(b), and 262.44).	Verify that signed copies of returned manifests are kept for 3 yr. (1)(2)(19) Verify that exception reports were submitted to the USEPA Regional Administrator when a signed manifest copy was not received within 60 days of the waste being accepted by the initial transporter. (1)(2)(19) Verify that exception reports are kept for at least 3 yr. (1)(2)(19) Verify that records of test results, waste analyses, and determinations are kept for 3 yr. (1)(2)(19) (NOTE: The requirement to prepare a manifest does not apply if: - the waste is reclaimed under contractual agreement: - the type of waste and frequency of shipments are specified in the agreement - the vehicle used to transport the waste to the recycling facility and to deliver regenerated material back to the generator is owned and operated by the reclaimer - the generator maintains a copy of the reclamation agreement for at least 3 yr after termination of the agreement.) (NOTE: Period of retention of records is extended automatically during the course of any unresolved enforcement action.)
...	...
4-30. SQGs are required to have an emergency coordinator and emergency response planning (40 CFR 262.34(d)(5)).	Verify that the installation has an emergency coordinator. (1)(2)(19) Verify that emergency information is posted next to the telephone: (1)(2)(19) - name and telephone number of emergency coordinator - location of fire extinguishers and spill control materials - location of fire alarms (if present) - telephone number of fire department. Verify that waste handlers are familiar with waste handling and emergency procedures. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Containers	
4-31. Empty containers at SQGs previously holding hazardous wastes must meet the regulatory definition of 'empty' before they are exempted from hazardous waste requirements (40 CFR 261.7).	Verify that for containers or inner liners holding hazardous wastes that all wastes are removed that can be removed using common practices and no more than 2.5 cm (1 in) of residue remains. (1)(2)(19) Verify that for containers or inner liners if the container is less than or equal to 417 L (110 gal) that no more than 3 percent by weight of total container capacity remains. (1)(2) Verify that for containers or inner liners when the container is greater than 417 L (110 gal) no more than 0.3 percent by weight of the total container capacity remains. (1)(2) Verify that for containers that held a compressed gas the pressure in the container approaches atmospheric. (1)(2) Verify that for containers or inner liners that held an acute hazardous waste listed in Appendix 4-5 that one of the following is done: (1)(2) - it is triple rinsed - it is cleaned by another method identified through the literature or testing as achieving equivalent removal - the inner liner is removed.
...	...
4-32. Containers used to store hazardous waste at SQGs must be in good condition and not leaking (40 CFR 262.34(d)(2) and 265.171).	Verify that containers are not leaking, bulging, rusting, damaged or dented. (1)(2)(19) Verify that waste is transferred to a new container or managed in another appropriate manner when necessary. (1)(2)
...	...
4-33. Containers used at SQGs must be made of or lined with materials compatible with the waste stored in them (40 CFR 262.34(d)(2) and 265.172).	Verify that containers are compatible with waste. (1)(2)(19)
...	...
4-34. Containers of hazardous waste at SQGs must be closed during storage and handled in a safe manner (40 CFR 262.34(d)(2) and 265.173).	Verify that containers are closed except when it is necessary to add or remove waste (check bungs on drums, look for funnels). (1)(2)(19) Verify that handling and storage practices do not cause damage to the containers or cause them to leak. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-35. The handling of incompatible wastes, or incompatible wastes and materials in containers at SQGs must comply with safe mangement practices (40 CFR 262.34(d)(2) and 265.177).	Verify that incompatible wastes or incompatible wastes and materials are not placed in the same containers unless it is done so that it does not: (1)(2)(19) - generate extreme heat or pressure, fire, or explosion, or violent reaction - produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health - produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions - damage the structural integrity of the device or facility - by any other like means threaten human health. (NOTE: Check for hydrocarbons in acid drums and other incompatible wastes as listed in Appendix 4-6.) Verify that hazardous wastes are not placed in an unwashed container that previously held an incompatible waste or material. (1)(2)(19) Verify that containers holding hazardous wastes incompatible with wastes stored nearby in other containers, open tanks, piles, or surface impoundments are separated or protected from each other by a dike, berm, wall or other device. (1)(2)(19)
...	...
4-36. Containers of hazardous waste at SQGs should be managed in accordance with good management practices (GMP).	Inspect containers and storage areas to determine the following: (1)(2)(19) - containers are not stored more than two high and have pallets between them - containers of highly flammable wastes are electrically grounded (check for clips and wires and make sure wires lead to ground rod or system) - at least 91 cm (3 ft) of aisle space is provided between rows of containers.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Container Storage Areas	
4-37. Containers of hazardous waste at SQGs should be kept in designated storage areas (GMP).	Verify that all containers are identified and stored in appropriate areas. (1)(2)(19) (NOTE: Any unidentified contents of solid waste containers and/or containers not in designated storage areas must be tested to determine if solid or hazardous waste requirements apply.)
...	...
4-38. SQG storage areas must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned release of hazardous waste (40 CFR 262.34(d)(4) and 265.30 through 265.37).	Determine if the following required equipment is easily accessible and in working condition by inspecting the SQG facility: (1)(2)(19) - internal communications or alarm system capable of providing immediate emergency instruction to installation personnel - a telephone or hand-held two-way radio - portable fire extinguishers and special extinguishing equipment (foam, inert gas, or dry chemicals) - spill control equipment - decontamination equipment - fire hydrants or other source of water (reservoir, storage tank, etc.) with adequate volume and pressure, foam producing equipment, or automatic sprinklers, or water spray systems. Determine if equipment is tested and maintained as necessary to insure proper operation in an emergency. (1)(2)(19) 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. (1)(2)(19) Verify that police, fire departments, emergency response teams are familiar with the layout of the facility, properties of the waste being handled, and general operations. (1)(2)(19) Verify that the hospital is familiar with the site and the types of injuries that could result in an emergency. (1)(2)(19)
...	...
4-39. SQGs must conduct weekly inspections of container storage areas (40 CFR 262.34(d)(2) and 265.174).	Verify that inspections are conducted at least weekly to look for leaking containers and signs of deterioration of containers. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

Tank Systems Storage
 	
4-40. SQGs must comply with certain storage tank requirements (40 CFR 262.34(d)(3) and 265.201(a) through 265.201(c)).
	Determine if the installation is a SQG that stores or treats wastes in tanks and verify that: (1)(2)(19)
	
	- the tank prevents:
	  - generation of extreme heat or pressure, fire or explosions, or violent reactions
	  - production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment
	  - production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion
	  - damage to structural integrity of the device or facility
	  - threats to human health or the environment through other means
	- no treatment reagent or hazardous wastes are placed in the tank that would cause it to rupture, leak, corrode, or otherwise fail before the end of its intended life
	- uncovered tanks have at least 60 cm (2 ft) of freeboard unless the tank has a containment structure, drainage control system, or a diversion structure with a volume that equals or exceeds the capacity of the top 60 cm (2 ft) of the tank
	- *continuous* feed tanks have a wastefeed cutoff or other stop/bypass system.
	
	Verify that the following are inspected at the indicated times: (1)(2)(19)
	
	- discharge control equipment at least once each operating day
	- monitoring equipment (pressure and temperature gauges) at least once each operating day
	- waste level in tank at least once each operating day
	- construction material of the tank for corrosion or leakage weekly
	- surrounding area for leakage and/or contamination at least weekly.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-41. Tank systems at SQGs must comply with requirements for ignitable, reactive, or incompatible wastes (40 CFR 262.34(d)(3) and 265.201 (e) through 265.201(f)).	Verify that ignitable or reactive wastes are not placed in a tank system, unless one of the following is met: (1)(2)(19) - 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 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 NFPA's *Flammable and Combustible Liquids Code* are maintained. (1)(2)(19) Verify that incompatible waste, or incompatible wastes and materials, are not placed in the same tank system unless minimum safety requirements are met. (1)(2)(19) Verify that hazardous waste is not placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material unless minimum safety requirements are met. (1)(2)(19)
...	...
4-42. SQGs must comply with specific tank closure requirements (40 CFR 265.201(d)).	Verify that tank systems in the process of being closed or closed had all hazardous waste removed from tanks, discharge control equipment, and discharge confinement structures. (1)(2)(19)
...	...
LARGE QUANTITY GENERATOR (LQG) **General**	
4-43. A LQG that generates, transports, or handles hazardous wastes must obtain an USEPA ID No. (40 CFR 262.12(a), 262.12(b), 264.11, and 265.11).	Examine documentation from USEPA for the installation's generator ID. (1)(2)(19) Verify that correct ID No. is used on all appropriate documentation (i.e., manifests). (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-44. LQGs may accumulate hazardous waste onsite for 90 days or less without a permit or interim status provided they meet certain conditions (40 CFR 262.34 (a)(2), 262.34(a)(3), and 262.34(b)).	Inspect each accumulation point and interview the accumul t manager. Verify that: (1)(2)(19) - the recorded start date indicates no container or tank h accumulating a hazardous waste longer than 90 days - each container and tank is labeled or marked clearly with the words HAZARDOUS WASTE. Verify that containers, drip pads and tanks meet the standards outline in the sections titled *LQGs: Containers, LQGs: Container Storage Areas, LQGs: Tank System Storage, LQGs: Containment Buildings.* (1)(2)(19) (NOTE: A generator who meets these standards is exempt from meeting the closure requirements outlined in 40 CFR 265.110 through 265.120, except for 265.112 and 265.114.) (NOTE: A generator who accumulates hazardous waste for more than 90 days (without an extension), is subject to all storage facility and permitting requirements.)
...	...
4-45. All LQG facilities must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned release of hazardous waste (40 CFR 262.34(a)(4) and 265.30 through 265.37).	Determine if the following required equipment is easily accessible and in working condition at the facility: (1)(2)(19) - internal communications or alarm system capable of providing immediate emergency instruction to facility personnel - a telephone or hand-held two-way radio - portable fire extinguishers and special extinguishing equipment (foam, inert gas, or dry chemicals) - spill control equipment - decontamination equipment - fire hydrants or other source of water (reservoir, storage tank, etc.) with adequate volume and pressure, foam producing equipment, or automatic sprinklers, or water spray systems. Determine if equipment is tested and maintained as necessary to insure proper operation in an emergency. (1)(2)(19) 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. (1)(2)(19) Verify that police, fire departments, emergency response teams are familiar with the layout of the facility, properties of the waste being handled, and general operations. (1)(2)(19) Verify that the hospital is familiar with the site and the types of injuries that could result in an emergency. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-46. LQGs must have a contingency plan (40 CFR 262.34(a)(4) and 265.50 through 265.54). (NOTE: Generating facilities may be addressed in the installation's SPCC plan or other emergency plan, or if none exists, in a separate contingency plan.)	Verify that the contingency plan is designed to minimize hazards to human health or the environmental from fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents. (1)(2)(19) Verify that the plan includes the following: (1)(2)(19) - a description of actions to be taken during an emergency - a description of arrangements made with local police departments, fire departments, hospitals, contractors, and state and local emergency response teams - names, addresses, and phone numbers of all persons qualified to act as emergency coordinator - a list of all emergency equipment at the installation and where this equipment is required, located, and what it looks like - an evacuation plan for installation personnel where there is a possibility evacuation would be needed. Verify that copies of the contingency plan are maintained at the installation and also have been submitted to organizations which may be called upon to provide emergency services. (1)(2)(19) Verify that the contingency plan is routinely reviewed and updated, especially when the installation is issued a new permit, the plan fails in an emergency, the emergency coordinators change, the waste being handled changes, and/or the list of emergency equipment changes. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-47. Each LQG must have an emergency coordinator on the installation premises or on call at all times (40 CFR 262.34 (a)(4) and 265.55).	Verify that, at all times, there is at least one employee at the installation or on call with responsibility for coordinating all emergency response measures. (1)(2)(19) Verify that the emergency coordinator is thoroughly familiar with the installation, the characteristics of the waste handled, and the provisions of the contingency plan. In addition, verify the emergency coordinator has the authority to commit the resources needed to carry out the contingency plan. (1)(2)(19)
...	...
4-48. Emergency coordinators at LQGs must follow certain emergency procedures whenever there is an imminent or actual emergency situation (40 CFR 262.34(a)(4) and 265.56(a) through 265.56(i)).	Review the contingency plan for the LQG. (1)(2)(19) Verify that the emergency coordinator is required to follow these emergency procedures: (1)(2)(19) - immediately activate installation alarms or communication systems and notify appropriate installation, state, and local response parties - identify the character, exact source, amount, and real extent of any released materials - assess possible hazards to human health or the environment, including direct and indirect effects (i.e., release of gases, surface runoff from water or chemicals used to control fire or explosions, etc.) - stop processes and operations at the installation when necessary to prevent fires, explosions, or further releases - collect and contain the released waste - remove or isolate containers when necessary - monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment whenever appropriate - provide for treatment, storage, or disposal of recovered waste, contaminated soil, or surface water, or other material - ensure that no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup is completed - ensure that all emergency equipment is cleaned and fit for its intended use before operations are resumed - notify USEPA, and appropriate state and local authorities when cleanup is complete and operation resumes.
...	...
4-49. LQG operators must record the time, date, and details of any incident that requires implementing the contingency plan (40 CFR 262.34(a)(4) and 265.56 (j)).	Determine if incidents have been recorded and corrective actions taken through a review of the installation's operating records. (1)(2)(19) Verify that written reports have been submitted to the USEPA regional administrator within 15 days after the incident. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-50. Installations that are LQGs are required to use manifests, maintain records, and file manifest exception reports (40 CFR 262.42(a)).	Verify that exception reports are filed with the USEPA Regional Administrator if a copy of the manifest is not received within 45 days of after the waste is accepted by the initial transporter. (1)(2)(19) Verify that exception reports are kept for 3 yr. (1)(2)(19) (NOTE: Periods of retention for reports may be extended automatically during the course of any unresolved enforcement action.)
...	...
Personnel Training Requirements	
4-51. All LQG personnel who handle hazardous waste must meet certain training requirements (40 CFR 262.34(a)(4) and 265.16(a) through 265.16 (c)).	Verify that the training program is directed by a person trained in hazardous waste management procedures. (1)(2)(4)(19) Verify that the training program includes the following: (1)(2)(4)(19) - contingency plan implementation - key parameters for automatic waste feed cut-off system - procedures for using, inspecting, and repairing emergency and monitoring equipment - operation of communications and alarm systems - response to fire or explosion - response to leaks or spills - waste turn-in procedures - identification of hazardous wastes - container use, marking, labeling, and on-facility transportation - manifesting and off-facility transportation - accumulation point management - personnel health and safety and fire safety - facility shutdown procedures. Verify that new employee training is completed within 6 mo of employment. (1)(2)(4)(19) Verify that an annual review of initial training is provided. (1)(2)(4)(19) Verify that employees do not work unsupervised until training is completed. (1)(2)(4)(19) Verify specifically that accumulation point managers and hazardous waste handlers have been trained. (1)(2)(4)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-52. Training records must be maintained for all LQG staff who manage hazardous waste (40 CFR 264.16(d), 264.16(e), 265.16(d), and 265.16(e)).	Examine training records and verify they include the following: (1)(2)(4)(19) - job title and description for each employee by name - written description of how much training each position will obtain - documentation of training received by name. Determine if training records are retained for 3 yr after employment at the facility. (1)(2)(4)(19) Verify that records are transferred with employees. (1)(2)(4)(19)
...	...
Containers	
4-53. Empty containers at LQGs previously holding hazardous wastes must meet the regulatory definition of 'empty' before they are exempted from hazardous waste requirements (40 CFR 261.7).	Verify that for containers or inner liners holding hazardous wastes that all wastes are removed that can be removed using common practices and no more than 2.5 cm (1 in.) of residue remains. (1)(2)(19) Verify that for containers or inner liners if the container is less than or equal to 417 L (110 gal) that no more than 3 percent by weight of total container capacity remains. (1)(2) Verify that for containers or inner liners when the container is greater than 417 L (110 gal) no more than 0.3 percent by weight of the total container capacity remains. (1)(2) Verify that for containers that held a compressed gas the pressure in the container approaches atmospheric. (1)(2) Verify that for containers or inner liners that held an acute hazardous waste listed in Appendix 4-5 that one of the following is done: (1)(2) - it is triple rinsed - it is cleaned by another method identified through the literature or testing as achieving equivalent removal - the inner liner is removed.
...	...
4-54. Containers used to store hazardous waste at LQGs must be in good condition and not leaking (40 CFR 262.34(a)(1)(i) and 265.171).	Verify that containers are not leaking, bulging, rusting, damaged or dented. (1)(2)(19) Verify that waste is transferred to a new container or managed in another appropriate manner when necessary. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-55. Containers used at LQGs must be made of or lined with materials compatible with the waste stored in them (40 CFR 262.34(a)(1)(i) and 265.172).	Verify that containers are compatible with waste. (1)(2)(19)
...	...
4-56. Containers must be closed during storage and handled in a safe manner at LQGs (40 CFR 262.34(a)(1)(i) and 265.173).	Verify that containers are closed except when it is necessary to add or remove waste (check bungs on drums, look for funnels). (1)(2)(19) Verify that handling and storage practices do not cause damage to the containers or cause them to leak. (1)(2)(19)
...	...
4-57. The handling of incompatible wastes, or incompatible wastes and materials in containers at LQGs must comply with safe mangement practices (40 CFR 262.34(a)(1)(i) and 265.177).	Verify that incompatible wastes or incompatible wastes and materials are not placed in the same containers unless it is done so that it does not: (1)(2)(19) - generate extreme heat or pressure, fire, or explosion, or violent reaction - produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health - produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions - damage the structural integrity of the device or facility - by any other like means threaten human health. (NOTE: Check for hydrocarbons in acid drums and other incompatible wastes as listed in Appendix 4-6.) Verify that hazardous wastes are not placed in an unwashed container that previously held an incompatible waste or material. (1)(2)(19) Verify that containers holding hazardous wastes incompatible with wastes stored nearby in other containers, open tanks, piles, or surface impoundments are separated or protected from each other by a dike, berm, wall or other device. (1)(2)(19)
...	...
4-58. Containers used to store hazardous waste at LQGs should be managed in accordance with good management practices (GMP).	Verify the following by inspecting container storage areas: (1)(2)(19) - containers are not stored more than two high and have pallets between them - containers of highly flammable wastes are electrically grounded (check for clips and wires and make sure wires lead to ground rod or system) - at least 91 cm (3 ft) of aisle space is provided between rows of containers.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Container Storage Areas	
4-59. At LQGs, containers of hazardous waste should be kept in designated storage areas (GMP).	Verify that all containers are identified and stored in appropriate areas. (1)(2)(19) (NOTE: Any unidentified contents of solid waste containers and/or containers not in designated storage areas must be tested to determine if solid or hazardous waste requirements apply.)
...	...
4-60. Containers holding ignitable or reactive waste must be located 1524 cm (50 ft) from the property line at LQGs (40 CFR 262.34(a)(1)(i) and 265.176).	Determine the distance from storage containers holding ignitable or reactive waste to the property line. (1)(2)(19)
...	...
4-61. LQGs must conduct weekly inspections of container storage areas (40 CFR 262.34(a)(1)(i) and 265.174).	Verify that inspections are conducted at least weekly in areas where containers are stored to look for leaking containers and signs of deterioration of containers. (1)(2)(19)
...	...
Tank System Storage	
4-62. Secondary containment is required for specific types of tank systems used to store or treat hazardous waste at LQGs (40 CFR 262.34(a)(1)(ii), 265.190(a), 265.190(b), and 265.193(a)).	Verify that the following types of tanks used to store or treat hazardous waste have secondary containment: (1)(2)(19) - all new tank systems or components - all existing tank systems used to store or treat USEPA Hazardous Waste No. FO20, FO21, FO22, FO23, FO26 and FO27 - existing tank systems of known documented age that are 15 yr of age. Verify that existing tank systems for which the age cannot be determined within 8 yr of 12 January 1987 and are at a facility that is older than 7 yr old are provided with secondary containment by time the facility reaches 15 yr of age or 12 January 1989, whichever comes later. (1)(2)(19) (NOTE: The following are exempt from these requirements: - tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor - tank systems, including sumps, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes.)
..	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-63. Secondary containment on tank systems at LQGs must meet specific requirements (40 CFR 262.34(a)(1)(ii), 265.190(a), and 265.193 (b) through 265.193(d)).	Verify that secondary containment meets the following criteria: (1)(2)(19) - it is designed, installed, and operated to prevent the migration of liquid out of the system - it is capable of detecting and collecting releases and accumulated liquids until removal is possible - it is constructed of or lined with materials compatible with the wastes - it is placed on a foundation or base that can provide appropriate support and prevent failure due to settlement, compression, or upset - a leak-detection system is present that is designed and operated to detect the failure of either the primary or secondary containment structure or the release of any hazardous waste within 24 h or the earliest practicable time - it is sloped or designed to drain and remove liquids from leaks, spills, or precipitation. Verify that spilled or leaked wastes are removed from secondary containment within 24 h or as timely as possible. (1)(2)(19) Verify that secondary containment for tanks includes one or more of the following: (1)(2)(19) - a liner (external to the tank) - a vault - a double-walled tank - an equivalent approved device. (NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)
...	...
4-64. External liners, vaults and double-walled tanks at LQGs are required to meet specific standards (40 CFR 262.34(a)(1)(ii), 265.190 (a), and 265.193(e)).	Verify that external liner systems meet the following requirements: (1)(2)(19) - they are designed and operated so that 100 percent of the capacity of the largest tank within the boundary would be contained - they prevent run-on and infiltration of precipitation into the secondary containment unless the collection system has sufficient capacity to handle run-on or infiltration - it is free of cracks or gaps - it surrounds the tank completely and covers all surrounding earth likely to come into contact with the waste if there is a release - capacity is sufficient to contain precipitation from a 25-yr, 24-h rainfall event.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-64. (continued)	Verify that vault systems meet the following criteria: (1)(2)(19) - it will contain 100 percent of the capacity of the largest tank within its boundary - it prevents run-on and infiltration of precipitation unless there is sufficient excess capacity - it is constructed with chemical-resistant water stops at all joints - it has an impermeable interior coating that is compatible with the wastes it contains - has a means to protect against the formation and ignition of vapors within the vault if the waste is ignitable or reactive - it has an exterior moisture barrier or otherwise operated to prevent migration of moisture into the vault. Verify that double-walled tanks meet the following criteria: (1)(2)(19) - it is designed as an integral structure so that any release is contained by the outer shell - it is protected from both corrosion of the primary tank and the external surface of the outer shell if constructed of metal - it has a built-in continuous leak detection system capable of detecting a release within 24 h. (NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)
...	...
4-65. Tank ancillary equipment at LQGs must also be provided with secondary containment (40 CFR 264.190(a), 264.193(b) through 264.193(d), 265.190(a), and 265.193(b) through 265.193(d)).	Verify that ancillary equipment, except for the following, has secondary containment: (1)(2)(19) - aboveground piping that are visually inspected for leaks on a daily basis - welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis - seal-less or magnetic coupling pumps and seal-less valves, that are visually inspected for leaks on a daily basis - pressurized aboveground piping systems with automatic shutoff valves that are visually inspected for leaks on a daily basis. (NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-66. Tank systems that are required to have secondary containment at LQGs that do not have secondary containment are required to meet specific requirements (40 CFR 262.34.(a)(1)(ii), 265.190(a), 265.191(a) through 265.191(c), and 265.193(i)).	Verify that tank systems without secondary containment meet the following: (1)(2)(19) - for nonenterable underground tanks a leak test is conducted annually - for other than nonenterable underground tanks either a leak test is done annually or the installation develops a schedule and procedure for an assessment of the overall condition by an independent, qualified, registered, professional engineer. Verify that the installation maintains a record of the results of testing and assessments. (1)(2)(19) Verify that tank systems which store or treat materials that become hazardous waste after 14 July 1986 are assessed within 12 mo after the waste becomes hazardous. (1)(2)(19) (NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)
...	...
4-67. LQGs with new tank systems must submit to the Regional Administrator a written assessment review certified by an independent, qualified, registered professional engineer to certify that the tank system was installed according to specific standards (40 CFR 262.34(a)(1)(ii) and 265.192).	Determine if the installation has any new tank systems. (1)(2)(19) Verify that when the tanks are installed they are handled so as to prevent damage to the tank and any backfill material that is used is a noncorrosive, porous, homogeneous substance. (1)(2)(19) Verify that the installation keeps on file the written assessments from the individuals required to certify the tank and supervise the installation of the tank. (1)(2)(19)
...	...
4-68. Tanks used for hazardous waste treatment or storage at LQGs must follow certain operating requirements (40 CFR 262.34(a)(1)(ii) and 265.194).	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 fail. (1)(2)(19) Verify that appropriate measures are taken to prevent overfill, including: (1)(2)(19) - spill prevention controls - overfill prevention controls - maintenance of sufficient freeboard to prevent overtopping by wave, wind action or precipitation for uncovered tanks.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-69. Tank systems at LQGs must comply with requirements for ignitable, reactive, or incompatible wastes (40 CFR 262.34(a)(1)(ii), 265.198, and 265.199).	Verify that ignitable or reactive wastes are not placed in a tank system, unless one of the following is met: (1)(2)(19) - 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 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 NFPA's *Flammable and Combustible Liquids Code* are maintained. (1)(2)(19) Verify that incompatible waste, or incompatible wastes and materials, are not placed in the same tank system unless minimum safety requirements are met. (1)(2)(19) Verify that hazardous waste is not placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material unless minimum safety requirements are met. (1)(2)(19)
...	...
4-70. LQGs must conduct inspections of tank systems and associated equipment (40 CFR 262.34(a)(1)(ii) and 265.195).	Verify that a schedule and procedure has been developed and is followed to inspect overfill controls at permitted facilities. (1)(2)(19) Determine if the following inspections are conducted at least once a day: (1)(2)(19) - data gathered from monitoring and detection equipment - overfill/spill control equipment at interim state facilities to ensure it is in good working order - aboveground portions of the tank to detect corrosion or releases - tank monitoring equipment (i.e., pressure and temperature gauges) - area surrounding tank including the secondary containment system for signs of leakage (wet spots, dead vegetation). Verify that the proper operation of cathodic protection systems are inspected within 6 mo after initial installation and annually thereafter. (1)(2)(19) Verify that all sources of impressed current are inspected and/or tested every other month. (1)(2)(19) Verify that inspections are documented. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-71. Tank systems or secondary containment systems at LQGs from which there has been a leak or spill or which have been declared unfit for use must be removed from service immediately and specific requirements met (40 CFR 262.34(a)(1)(ii) and 265.196).	Verify that the following steps are taken: (1)(2)(19)
	- the flow or addition of hazardous wastes to the tank is stopped
	- the hazardous waste is removed from the tank:
	  - within 24 h of detection (or other reasonable time as demonstrated by the owner/operator) remove as much waste from the tank as necessary to prevent further release and allow inspection and repair
	  - within 24 h (or in as timely a manner as is possible to prevent harm to human health and the environment) remove waste released to secondary containment system
	- a visual inspection of the release is done and:
	  - action is taken to prevent further migration to soils or surface or groundwater
	  - any visible contamination of soil and surface water is removed and disposed.
	
	Verify that notification is made within 24 h for any release to the environment to the Regional Administrator. (1)(2)(19)
	
	Verify that a report is submitted within 30 days. (1)(2)(19)
	
	(NOTE: Releases of 0.45 kg (1 lb) or less that are immediately contained and cleaned up are exempt from reporting.)
	
	Verify that the tank and/or secondary containment is repaired prior to its return to service and that extensive repairs are certified by an independent, qualified, registered, professional engineer. (1)(2)(19)

...	...
4-72. LQGs are required to follow specific procedures when closing a tank system (40 CFR 262.34(a)(1)(ii), 265.197(a), and 265.197(b)).	Determine if the installation has closed any tank systems. (1)(2)(19) Verify that all waste residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with waste have been removed or decontaminated. (1)(2)(19) Verify that if it is not possible and/or practicable to remove or decontaminate all soils, the installation closes the tank and performs post-closure care as is required for landfills. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

Containment Buildings
 	
4-73. LQGs with containment buildings that are in compliance are not subject to the definition of land disposal if specific requirements are met (40 CFR 262.34 (a)(1)(iv), 264.1100, and 265.1100).
 	
...
	Verify that the containment building meets the following: (1)(2)(19)
	
	- it is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit
	- it is designed to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes, climatic conditions, and the stress of daily operations
	- it has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling of equipment within the unit
	- if the unit is used to manage liquids:
	  - there is a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier
	  - there is a liquid collection system designed and constructed of materials to minimized the accumulation of liquid on the primary barrier
	  - there is a secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time
	- it has controls sufficient to prevent fugitive dust emissions
	- it is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel and equipment.
	
	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-74. Containment buildings are required to be designed according to specific standards (40 CFR 262.34(a)(1)(iv), 264.1101(a)(1) through 264.1101(a)(2), 264.1101 (b), 265.1101(a)(1) through 265.1101(a)(2), and 265.1101(b)).	Verify that containment buildings meet the following design standards: (1)(2)(19)
	
	- it is completely enclosed with a floor, walls, and a roof to prevent exposure to the elements and to assure containment of wastes
	- the floor and containment walls, including any required secondary containment system, are designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit
	- it is designed to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes, climatic conditions, and the stress of daily operations
	- it has sufficient structural strength to prevent collapse or other failure
	- all surfaces in contact with hazardous wastes are compatible with the wastes
	- it has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling of equipment within the unit and is appropriate for the chemical and physical characteristics of the waste.
	
	Verify that if the containment building is going to manage hazardous wastes with free liquids or treated with free liquids the following design requirements are also met: (1)(2)(19)
	
	- there is a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier (i.e., a geomembrane covered by a concrete wear surface)
	- there is a liquid collection and removal system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier:
	  - the primary barrier is sloped to drain liquids to the associated collection system
	  - liquids and wastes are collected and removed to minimized hydraulic head on the containment system at the earliest practicable time

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-74. (continued)
 	
...
	- there is a secondary containment system, including a secondary barrier, designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time
	- the leak detection component of the secondary containment system meets the following:
	  - it is constructed with a bottom slope of 1 percent or more
	  - it is constructed of a granular drainage materials with a hydraulic conductivity of 1 x 10^{-2} cm/second (sec) or more and a thickness of 30.5 cm (12 in.) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of 3 x 10^{-5} m^2/sec or more
	- if treatment is to be conducted in the building, the treatment area is designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building
	- the secondary containment system is constructed of materials that are chemically resistant to the waste and liquids managed in the building and of sufficient strength and thickness to prevent collapse under pressure exerted by overlaying materials and by any equipment used.
	
	(NOTE: An exception to the structural strength requirement may be made for light-weight doors and windows based on the nature of the waste management operations if the following criteria are met:
	- the doors and windows provide an effective barrier again fugitive dust emissions
	- the unit is designed and operated in a manner that ensures that the waste will not come in contact with the doors or windows.)
	
	(NOTE: A containment building can serve as secondary containment systems for tanks within the building if:
	- it meets the requirements of 40 CFR 264.193(d)(1) (see checklist item 4-65)
	- it meets the requirements of 40 CFR 264.193(b) and 264.193(c)(1-2) (see checklist item 4-65.)
	
	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-75. Containment buildings are required to be operated according to specific standards (40 CFR 262.34(a)(1)(iv), 264.1101(a)(3), 264.1101 (c)(1), 264.1101(c)(4), 265.1101(a)(3), 265.1101 (c)(1), and 265.1101 (c)(4)).	Verify that incompatible wastes or treatment reagents are not placed in the building or its secondary containment system if they could cause the unit or the secondary containment system to leak, corrode, or otherwise fail. (1)(2)(19) Verify that the following operational procedures are done: (1)(2)(19) - controls and practices are used to ensure the containment of the waste within the building - the primary barrier is maintained so that it is free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier - the level of the stored/treated hazardous waste is maintained so that the height of any containment wall is not exceeded - measures are implemented to prevent the tracking of hazardous waste out of the unit by personnel or equipment used in the handling of the waste - there is a designated area for the decontamination of equipment and collection of rinsate - any collected rinsate is managed as needed according to its constituents - measures are implemented to control fugitive dust emissions so that no openings exhibit visible emissions - particulate collection devices are maintained and operated according to sound air pollution control practices. Verify that data is gathered from monitoring equipment and leak detection equipment and the site is inspected at least once every 7 days and the results recorded in the operating record. (1)(2)(19) Verify that there is a written description of procedures to ensure that waste does not remain in the building for more than 90 days. (1)(2)(19) Verify that there is documentation that the waste does not remain for more than 90 days. (1)(2)(19)
...	...
4-76. Containment buildings are required to be certified by a registered professional engineer (40 CFR 262.34 (a)(1)(iv), 264.1101(c)(2), and 265.1101(c)(2)).	Verify that the building has been certified by a qualified, registered, professional engineer. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-77. Leaks in containment buildings must be repaired and reported (40 CFR 262.34(a)(1)(iv), 264.1101(c)(3), and 265.1101(c)(3)).	Verify that if a condition is detected that could lead to a leak or has already caused a leak, it is repaired promptly. (1)(2)(19) Verify that when a leak is discovered: (1)(2)(19) - the discovery is recorded in the facility operating record - the portion of the containment building that is affected is removed from service - a cleanup and repair schedule is established - within 7 days the Regional Administrator is notified and within 14 working days written notice is provided to the Regional Administrator - the Regional Administrator is notified upon the completion of all repairs and certification from a qualified, registered, professional engineer is also submitted.
...	...
4-78. Containment buildings that contain both areas with and without secondary containment must meet specific requirements (40 CFR 262.34(a)(1)(iv), 264.1101(d), and 265.1101(d)).	Verify that each area is designed and operated according to the appropriate requirements. (1)(2)(19) Verify that measures are taken to prevent the release of liquids or wet materials into areas without secondary containment. (1)(2)(19) Verify that a written description is maintained in the facility operating log of operating procedures used to maintain the integrity of areas without secondary containment. (1)(2)(19)
...	...
4-79. When a containment building is closed specific requirements must be met (40 CFR 262.34(a)(1)(iv), 264.1102, and 265.1102).	Determine if the installation has closed a containment building recently. (1)(2)(19) Verify that at closure, all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate were removed or decontaminated. (1)(2)(19) Verify that the containment building is closed in accordance with closure and post-closure requirements for TSDFs as outlined in the sections titled *ALL TSDFs - Documentation* and *ALL TSDFs - Closure*. (1)(2)(19) Verify that if it is found that not all contaminated subsoils can be practicably removed or decontaminated, the facility is closed and landfill post-closure requirements are implemented. (1)(2)(19)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
TRANSPORTATION	
4-80. Transporters of hazardous waste that is required to be manifested must have an USEPA ID No. and must comply with manifest management requirements (40 CFR 263.10(a), 263.10 (b), 263.11, 263.20(a) through 263.20(d), 263.21(a), and 263.22(a)). (NOTE: These requirements do not apply to the onsite transportation of hazardous waste.)	Determine if the installation transports hazardous waste offsite using their own vehicles or a contractor. (1)(2)(4)(6)(18)(23) Verify that the transporter has a USEPA ID No. (1)(2)(4)(6) Verify that all waste accepted for transport is accompanied by a manifest. (1)(2)(4)(6) Verify that prior to transport, the transporter signs and dates the manifest and returns a copy to the generator prior to leaving the installation. (1)(2)(4)(6) Verify that the transporter retains a copy of the manifest after delivery. (1)(2)(4)(6) Verify that manifests are kept on file for 3 yr. (1)(2)(4)(6) (NOTE: Special issues involved in the transportation of hazardous waste by rail or water are not addressed in this manual.)
...	...
4-81. Before transporting hazardous waste or offering hazardous waste for transportation offsite in the United States, the installation must package and label the waste in accordance with DOT regulations contained in 49 CFR 172, 173, 178, and 179 (40 CFR 262.30 through 262.33).	Determine what pre-transport procedures for hazardous waste are used by interviewing DRMO. (1)(2)(4)(6)(18)(23) Verify that containers are properly constructed and contain no leaks, corrosion, or bulges by inspecting a sample of containers awaiting transport. (1)(2)(4)(6) Examine end-seams for minor weeping that indicates drum failure. (1)(2)(4)(6) Verify labeling and marking on each container is compatible with the manifests. (1)(2)(4)(6) Verify that the following information is displayed on a random sample of containers of 110 gal or less in accordance with 49 CFR 172.304: (1)(2)(4)(6) - "HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency. Generator's name and address Manifest Document Number_____." Verify that proper DOT placarding is available for the transporter. (1)(2)(4)(6)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-82. Transporters of waste offsite must take immediate notification and cleanup action if a discharge occurs during transport (40 CFR 263.30 and 263.31).	Verify that transport operators have instructions to notify local authorities and take cleanup action so that the discharge does not present a hazard. (1)(2)(4)(6)(18)(23) Verify that transporters give notice to the NRC and report in writing as required by 49 CFR 171.15 and 171.16. (1)(2)(4)(6)
...	...
4-83. The installation should ensure that transportation of hazardous wastes between buildings is accomplished in accordance with good management practices to help prevent spills, releases, and accidents (GMP).	Determine from the transportation branch if procedures exist to manage movement of hazardous wastes throughout the installation. (1)(2)(4)(6) Determine if drivers are trained in spill control procedures. (1)(2)(4)(6) Determine if provisions have been made for securing wastes in vehicles when transporting. (1)(2)(4)(6)
...	...
4-84. Transporters must not store manifested shipments in containers meeting DOT packaging requirements for more than 10 days at a transfer facility (40 CFR 263.12).	Determine if the installation has a transfer facility. (1)(2)(4)(6) Verify the following: (1)(2)(4)(6) - transfer facility storage is for 10 days or less - DOT packaging requirements are met - shipments are manifested and manifests accompany shipments - storage is consistent with GMP. (NOTE: Storage for more than 10 days will require a TSDF permit.)
...	...
ALL TSDFs **General**	
4-85. All permitted facilities are required to meet the hazardous waste management requirements outlined in their permit (40 CFR 264).	Examine the facility permit for required parameters such as inspection procedures, manning requirements, and training. (1)(2)(4)(18) Verify that the facility is not treating, storing, or disposing of any waste other than those listed in its Part A application. (1)(2)(4)
...	...
4-86. All TSDFs which have Interim Status are required to meet the hazardous waste management requirements (40 CFR 265).	Examine facility interim status documentation (notification of hazardous waste activity and Part A application). (1)(2)(4)(18)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-87. All TSDFs that store, treat, transport, or handle hazardous wastes must obtain an USEPA ID No. (40 CFR 264.11 and 265.11).	Examine documentation from USEPA for the facility's generator ID No. (1)(2)(4)(18) Verify that the correct ID No. is used on all appropriate documentation (i.e., manifests). (1)(2)(4)(18)
...	...
4-88. Installations with TSDFs must control entry to the active portion of each facility (40 CFR 264.14 and 265.14).	Verify that unless the installation can demonstrate that physical contact with the waste, structures, and equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock, and that the waste would not be disturbed, the following items are in place at the TSDF: (1)(2)(4)(18) - a 24-h surveillance system (i.e., television monitors, surveillance by guards) is in place and in operation - the facility is surrounded by a fence or natural barrier - entrances are locked or monitored by an attendant or roadway access is controlled. (NOTE: These requirements are satisfied if the active portion of the facility is located within a fenced yard or locked building: - signs with the wording "Danger Unauthorized Personnel Keep Out," are posted at each entrance and other locations as appropriate - signs with the wording "Hazardous Waste Area," are posted (in two languages, if necessary) - signs are legible from 762 cm (25 ft).)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-89. All TSDFs must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned release of hazardous waste (40 CFR 264.30 through 264.37).	Determine if the following required equipment is easily accessible and in working condition by inspecting the TSDFs: (1)(2)(4)(18) - an internal communications or alarm system capable of providing immediate emergency instruction to facility personnel - a telephone or hand-held two-way radio - portable fire extinguishers and special extinguishing equipment (foam, inert gas, or dry chemicals) - spill control equipment - decontamination equipment - fire hydrants or other source of water (reservoir, storage tank, etc.) with adequate volume and pressure, foam producing equipment, or automatic sprinklers, or water spray systems. Determine if equipment is tested and maintained as necessary to insure proper operation in an emergency. (1)(2)(4) 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. (1)(2)(4) 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. (1)(2)(4)(5)(18) Verify that the hospital is familiar with the site and the types of injuries that could result in an emergency. (1)(2)(4)
...	...
4-90. All TSDFs must take precautions to prevent accidental ignition or reaction of ignitable or reactive wastes (40 CFR 264.17(a) and 265.17(a)).	Verify from the operating record and/or observation that the following safe management practices are used: (1)(2)(4)(18) - wastes are separated and protected from sources of ignition or reaction - smoking and open flame is confined to specially designated locations when ignitable or reactive wastes is handled - "No Smoking" signs are used when necessary.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-91. When TSDFs are required by specific treatment, storage, or disposal sections to prevent reactions from ignitable, reactive, or incompatible wastes, specific standards must be met (40 CFR 264.17(b) and 265.17(b)).	Verify from the operating record and/or observation that during treatment, storage, or disposal of ignitable or reactive wastes, or during mixing of incompatible wastes and other materials, precautions are taken to prevent the following reactions: (1)(2)(4)(18) - generation of extreme heat or pressure, fire or explosions, or violent reactions - production of uncontrolled toxic mists, fumes, dusts, or gases sufficient to threaten human health or the environment - production of uncontrolled flammable fumes or gases sufficient to pose a risk of fire or explosions - damage the structural integrity of the device or facility - threats to human health or the environment through other like means.
...	...
4-92. A detailed chemical and physical analysis of a representative sample, as specified in the waste analysis plan, of the hazardous waste must be obtained prior to treatment, storage or disposal (40 CFR 264.13(a) and 265.13(a)).	Verify that a detailed physical and chemical analysis is done of a representative sample of the wastes prior to treatment, storage, or disposal. (1)(2)(4)(18) (NOTE: Prior studies, published information may be included as a part of the analysis.) Verify that the analysis is repeated as necessary to ensure that it is accurate and up to date, specifically if the process or operation generating the waste has changed. (1)(2)(4)(18)
...	..
4-93. Each TSDFs must have an emergency coordinator on the facility premises or on call at all times (40 CFR 264.55 and 265.55).	Verify that, at all times, there is at least one employee at the facility or on call with responsibility for coordinating all emergency response measures. (1)(2)(4)(18) Verify that the emergency coordinator is thoroughly familiar with the facility, the characteristics of the waste handled, and the provisions of the contingency plan. In addition, verify the emergency coordinator has the authority to commit the resources needed to carry out the contingency plan. (1)(2)(4)(18)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-94. TSDF emergency coordinators must follow certain emergency procedures whenever there is an imminent or actual emergency situation (40 CFR 264.56(a) through 264.56(i) and 265.56(a) through 265.56(i)). ...	Review the contingency plan for the TSDF. (1)(2)(4)(18) Verify that the emergency coordinator is required to follow these emergency procedures: (1)(2)(4)(18) - immediately activate facility alarms or communication systems and notify appropriate facility, state, and local response parties - identify the character, exact source, amount, and real extent of any released materials - assess possible hazards to human health or the environment, including direct and indirect effects (i.e., release of gases, surface runoff from water or chemicals used to control fire or explosions, etc.) - stop processes and operations at the facility when necessary to prevent fires, explosions, or further releases - collect and contain the released waste - remove or isolate containers when necessary - monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment whenever appropriate - provide for treatment, storage, or disposal of recovered waste, contaminated soil, or surface water, or other material - ensure that no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup is completed - ensure that all emergency equipment is cleaned and fit for its intended use before operations are resumed - notify USEPA, and appropriate state and local authorities when cleanup is complete and operation resumes. ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Personnel Training Requirements	
4-95. All TSDF personnel who handle hazardous waste must meet certain training requirements (40 CFR 264.16(a) through 264.16(c) and 265.16(a) through 265.16(c)).	Verify that the training program is directed by a person trained in hazardous waste management procedures. (1)(2)(4)(18)(23) Verify that the training program includes the following: (1)(2)(4)(18)(23) - contingency plan implementation - key parameters for automatic waste feed cut-off system - procedures for using, inspecting, and repairing emergency and monitoring equipment - operation of communications and alarm systems - response to fire or explosion - response to leaks or spills - waste turn-in procedures - identification of hazardous wastes - container use, marking, labeling, and on-facility transportation - manifesting and off-facility transportation - accumulation point management - personnel health and safety and fire safety - facility shutdown procedures. Verify that new employee training is completed within 6 mo of employment. (1)(2)(4) Verify that an annual review of initial training is provided. (1)(2)(4) Verify that employees do not work unsupervised until training is completed. (1)(2)(4)
...	...
4-96. Training records must be maintained for all TSDF staff who manage hazardous waste (40 CFR 264.16(d), 264.16(e), 265.16(d), and 265.16(e)).	Examine training records and verify they include the following: (1)(2)(4)(18)(19)(23) - job title and description for each employee by name - written description of how much training each position will obtain - documentation of training received by name. Determine if training records are retained for 3 yr after employment at the facility. (1)(2)(4) Verify that records are transferred with employees. (1)(2)(4)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Containers	
4-97. Containers used to store hazardous waste at TSDFs must be in good condition and not leaking (40 CFR 264.171 and 265.171).	Verify that containers are not leaking, bulging, rusting, damaged or dented. (1)(2)(4)(18) Verify that waste is transferred to a new container or managed in another appropriate manner when necessary. (1)(2)(4)(18)
...	...
4-98. Containers used at TSDFs must be made of or lined with materials compatible with the waste stored in them (40 CFR 264.172 and 265.172).	Verify that containers are compatible with waste. (1)(2)(4)(18)
...	...
4-99. Containers at TSDFs must be closed during storage and handled in a safe manner (40 CFR 264.173 and 265.173).	Verify that containers are closed except when it is necessary to add or remove waste (check bungs and look for open funnels). (1)(2)(4)(18) Verify that handling and storage practices do not cause damage to the containers or cause them to leak. (1)(2)(4)
...	...
4-100. The handling of incompatible wastes, or incompatible wastes and materials in containers at TSDFs must comply with safe mangement practices (40 CFR 264.17(b), 264.177, 265.17(b), and 265.177).	Verify that incompatible wastes or incompatible wastes and materials are not placed in the same containers unless it is done so that it does not: (1)(2)(4)(18) - generate extreme heat or pressure, fire, or explosion, or violent reaction - produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health - produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions - damage the structural integrity of the device or facility - by any other like means threaten human health. (NOTE: Check for hydrocarbons in acid drums and other incompatible wastes as listed in Appendix 4-6.) Verify that hazardous wastes are not placed in an unwashed container that previously held an incompatible waste or material. (1)(2)(4) Verify that containers holding hazardous wastes incompatible with wastes stored nearby in other containers, open tanks, piles, or surface impoundments are separated or protected from each other by a dike, berm, wall or other device. (1)(2)(4)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-101. Containers of hazardous waste at TSDFs should be managed properly (GMP).	Inspect containers and storage areas to determine the following: (1)(2)(4)(18) - containers are not stored more than two high and have pallets between them - containers of highly flammable wastes are electrically grounded (check for clips and wires and make sure wires lead to ground rod or system) - at least 91 cm (3 ft) of aisle space is provided between rows of containers.
...	...
Container Storage Areas	
4-102. Containers at TSDFs should be kept in designated storage areas (GMP).	Verify that all containers are identified and stored in appropriate areas. (1)(2)(4)(18)(23) (NOTE: Any unidentified contents of solid waste containers and/or containers not in designated storage areas must be tested to determine if solid or hazardous waste requirements apply.)
...	...
4-103. Containers holding ignitable or reactive waste must be located 50 ft from the property line of a TSDF (40 CFR 264.176 and 265.176).	Determine the distance from any storage containers to the property line. (1)(2)(4)(18)(23) (NOTE: This restriction does not apply to SQGs.)
...	...
4-104. TSDF personnel must conduct weekly inspections of container storage areas (40 CFR 264.174 and 265.174).	Verify that inspections are conducted at least weekly to look for leaking containers and signs of deterioration of containers. (1)(2)(4)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Tank Systems Storage **4-105.** Secondary containment is required for specific types of tank systems used to store or treat hazardous waste at TSDFs (40 CFR 264.190 (a), 264.190(b), 264.193(a), 265.190 (a), 265.190(b), and 265.193 (a)). ...	Verify that the following types of tanks used to store or treat hazardous waste have secondary containment: (1)(2)(4)(18)(23) - all new tank systems or components - all existing tank systems used to store or treat USEPA Hazardous Waste Nos FO20, FO21, FO22, FO23, FO26 and FO27 - existing tank systems of known documented age that are 15 yr of age. Verify that existing tank systems for which the age cannot be determined within 8 yr of 12 January 1987 and are at a facility that is older than 7 yr old are provided with secondary containment by time the facility reaches 15 yr of age or 12 January 1989, whichever comes later. (1)(2)(4) (NOTE: The following are exempt from these requirements: - tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor - tank systems, including sumps, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes.) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-106. Secondary containment on tank systems at TSDFs must meet specific requirements (40 CFR 264.190(a), 264.193 (b) through 264.193(d), 265.190(a), and 265.193 (b) through 265.193(d)).	Verify that secondary containment meets the following criteria: (1)(2)(4)(18) - it is designed, installed, and operated to prevent the migration of liquid out of the system - it is capable of detecting and collecting releases and accumulated liquids until removal is possible - it is constructed of or lined with materials compatible with the wastes - it is placed on a foundation or base that can provide appropriate support and prevent failure due to settlement, compression, or upset - a leak-detection system is present that is designed and operated to detect the failure of either the primary or secondary containment structure or the release of any hazardous waste within 24 h or the earliest practicable time - it is sloped or designed to drain and remove liquids from leaks, spills, or precipitation. Verify that spilled or leaked wastes are removed from secondary containment within 24 h or as timely as possible. (1)(2)(4) Verify that secondary containment for tanks includes one or more of the following: (1)(2)(4) - a liner (external to the tank) - a vault - a double-walled tank, or - an equivalent approved device. (NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-107. External liners, vaults and double-walled tanks at TSDFs are required to meet specific standards (40 CFR 264.190 (a), 264.193(e), 265.190(a), and 265.193 (e)).	Verify that external liner systems meet the following requirements: (1)(2)(4)(18)(23) - it is designed and operated so that 100 percent of the capacity of the largest tank within the boundary would be contained - it prevents run-on and infiltration of precipitation into the secondary containment unless the collection system has sufficient capacity to handle run-on or infiltration - it is free of cracks or gaps - it surrounds the tank completely and covers all surrounding earth likely to come into contact with the waste if there is a release - capacity is sufficient to contain precipitation from a 25-yr, 24-h rainfall event. Verify that vault systems meet the following criteria: (1)(2)(4) - it will contain 100 percent of the capacity of the largest tank within its boundary - it prevents run-on and infiltration of precipitation unless there is sufficient excess capacity - it is constructed with chemical-resistant water stops at all joints - it has an impermeable interior coating that is compatible - it has a means to protect against the formation of and ignition of vapors within the vault if the waste is ignitable or reactive - it has an exterior moisture barrier or is otherwise operated to prevent migration of moisture into the vault. Verify that double-walled tanks meet the following criteria: (1)(2)(4) - it is designed as an integral structure so that any release is contained by the outer shell - it is protected from both corrosion of the primary tank and the external surface of the outer shell if constructed of metal - it has a built-in continuous leak detection system capable of detecting a release within 24 h. (NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-108. Tank ancillary equipment at TSDFs must also be provided with secondary containment (40 CFR 264.190(a), 264.193(f), 265.190(a), and 265.193(f)).	Verify that ancillary equipment, except for the following, has secondary containment: (1)(2)(4)(18)(23) - aboveground piping that is visually inspected for leaks on a daily basis - welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis - sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis - pressurized aboveground piping systems with automatic shutoff valves that are visually inspected for leaks on a daily basis. (NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)
...	...
4-109. Tank systems at TSDFs that are required to have secondary containment that do not have secondary containment must meet specific requirements (40 CFR 264.190(a), 264.191(a) through 264.191(c), 264.193(i), 265.190(a), 265.191(a) through 265.191(c), and 265.193 (i)).	Verify that tank systems without secondary containment meet the following: (1)(2)(4)(18)(23) - for nonenterable underground tanks a leak test is conducted annually - for other than nonenterable underground tanks either a leak test is done annually or the installation develops a schedule and procedure for an assessment of the overall condition by an independent, qualified, registered professional engineer - for ancillary equipment a leak test or other approved integrity assessment at least annually. Verify that the installation maintains a record of the results of testing and assessments. (1)(2)(4) Verify that tank systems which store or treat materials that become hazardous waste after 14 July 1986 are assessed within 12 mo after the waste becomes hazardous. (1)(2)(4) (NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)
...	...
4-110. TSDFs with new tank systems must submit to the Regional Administrator a written assessment review certified by an independent, qualified, registered professional engineer and install the tank according to specific standards (40 CFR 264.192 and 265.192).	Determine if the TSDF has any new tank systems. (1)(2)(4)(18)(23) Verify that when the tanks are installed they are handled so as to prevent damage to the tank and any backfill material that is used is a noncorrosive, porous, homogeneous substance. (1)(2)(4) Verify that the installation keeps on file the written assessments from the individuals required to certify the tank and supervise the installation of the tank. (1)(2)(4)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-111. Tanks used for hazardous waste treatment or storage at TSDFs must follow certain operating requirements (40 CFR 264.194 and 265.194).	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 fail. (1)(2)(4)(18)(23) Verify that appropriate measures are taken to prevent overfill, including: (1)(2)(4) - spill prevention controls - overfill prevention controls - maintenance of sufficient freeboard to prevent overtopping by wave, wind action or precipitation for uncovered tanks.
...	...
4-112. Tank systems at TSDFs must comply with requirements for ignitable, reactive, or incompatible wastes (40 CFR 264.198, 264.199, 265.198, and 265.199).	Verify that ignitable or reactive wastes are not placed in a tank system, unless one of the following is met: (1)(2)(4)(18)(23) - 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 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 NFPA's *Flammable and Combustible Liquids Code* are maintained. (1)(2)(4) Verify that incompatible waste, or incompatible wastes and materials, are not placed in the same tank system unless minimum safety requirements are met. (1)(2)(4) Verify that hazardous waste is not placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material unless minimum safety requirements are met. (1)(2)(4)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-113. Personnel at TSDFs must conduct inspections of tank systems and associated equipment (40 CFR 264.195 and 265.195).	Verify that a schedule and procedure has been developed and is followed to inspect overfill controls at permitted facilities. (1)(2)(4)(18)(23) Determine if the following inspections are conducted at least once a day: (1)(2)(4)(18)(23) - data gathered from monitoring and leak detection equipment - overfill/spill control equipment at interim status facilities to ensure it is in good working order - aboveground portions of the tank to detect corrosion or releases - tank monitoring equipment (i.e., pressure and temperature gauges) - area surrounding tank including the secondary containment system for signs of leakage (wet spots, dead vegetation). Verify that the proper operation of cathodic protection systems are inspected within 6 mo after initial installation and annually thereafter. (1)(2)(4)(18)(23) Verify that all sources of impressed current are inspected and/or tested every other month. (1)(2)(4)(18)(23) Verify that inspections are documented. (1)(2)(4)(18)(23)
...	...

4-114. Tank systems or secondary containment systems at TSDFs from which there has been a leak or spill or which have been declared unfit for use must be removed from service immediately and specific requirements met (40 CFR 264.196 and 265.196).	Verify that the following steps are taken: (1)(2)(4)(18)(23)
	
	- the flow or addition of hazardous wastes to the tank is stopped
	- the hazardous waste is removed from the tank:
	  - within 24 h of detection (or other reasonable time as demonstrated by the owner/operator) remove as much waste from the tank as necessary to prevent further release and allow inspection and repair
	  - within 24 h (or in as timely a manner as is possible to prevent harm to human health and the environment) remove waste released to secondary containment system
	- a visual inspection of the release is done and:
	  - action is taken to prevent further migration to soils or surface or groundwater
	  - any visible contamination of soil and surface water is removed and disposed.
	
	Verify that notification is made within 24 h for any release to the environment to the Regional Administrator. (1)(2)(4)
	
	Verify that a report is submitted within 30 days. (1)(2)(4)
	
	(NOTE: Releases of 0.45 kg (1 lb) or less that are immediately contained and cleaned up are exempt from reporting.)
	
	Verify that the tank and/or secondary containment is repaired prior to its return to service and that extensive repairs are certified by an independent, qualified, registered, professional engineer. (1)(2)(4)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-115. TSDFs are required to follow specific procedures when closing a tank system (40 CFR 264.197(a), 264.197 (b), 265.197(a), and 265.197(b)).	Determine if the TSDF has closed any tank systems. (1)(2)(4)(18)(23) Verify that all waste residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with waste have been removed or decontaminated. (1)(2)(4) Verify that if it is not possible and/or practicable to remove or decontaminate all soils, the installation closes the tank and performs post-closure care as is required for landfills. (1)(2)(4)
...	...
Containment Buildings	

4-116. Installations with containment buildings at TSDFs that are in compliance are not subject to the definition of land disposal if specific requirements are met (40 CFR 264.1100 and 265.1100).	Verify that the containment building meets the following: (1)(2)(4)(18)(23)
	
	- it is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit
	- it is designed to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes, climatic conditions, and the stress of daily operations
	- it has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling of equipment within the unit
	- if the unit is used to manage liquids:
	  - there is a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier
	  - there is a liquid collection system designed and constructed of materials to minimized the accumulation of liquid on the primary barrier
	  - there is a secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time
	- it has controls sufficient to prevent fugitive dust emissions
	- it is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel and equipment.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-117. Containment buildings are required to be designed according to specific standards (40 CFR 264.1101(a)(1) through 264.1101(a)(2), 264.1101(b), 265.1101 (a)(1) through 265.1101 (a)(2), and 265.1101 (b)).	Verify that containment buildings meet the following design standards: (1)(2)(4)(18)(23)
	
	- it is completely enclosed with a floor, walls, and a roof to prevent exposure to the elements and to assure containment of wastes
	- the floor and containment walls, including any required secondary containment system, are designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit
	- it is designed to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes, climatic conditions, and the stress of daily operations
	- it has sufficient structural strength to prevent collapse or other failure
	- all surfaces in contact with hazardous wastes are compatible with the wastes
	- it has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling of equipment within the unit and is appropriate for the chemical and physical characteristics of the waste.
	
	Verify that if the containment building is going to manage hazardous wastes with free liquids or treated with free liquids the following design requirements are also met: (1)(2)(4)
	
	- there is a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier (i.e., a geomembrane covered by a concrete wear surface)
	- there is a liquid collection and removal system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier:
	  - the primary barrier is sloped to drain liquids to the associated collection system
	  - liquids and wastes are collected and removed to minimized hydraulic head on the containment system at the earliest practicable time
	- there is a secondary containment system, including a secondary barrier, designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-117. (continued)
 	
...
	- the leak detection component of the secondary containment system meets the following:
	  - it is constructed with a bottom slope of 1 percent or more
	  - it is constructed of a granular drainage materials with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of 12 in. (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-5} m^2/sec or more
	- if treatment is to be conducted in the building, the treatment area is designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.
	- the secondary containment system is constructed of materials that are chemically resistant to the waste and liquids managed in the building and of sufficient strength and thickness to prevent collapse under pressure exerted by overlaying materials and by any equipment used.
	
	(NOTE: An exception to the structural strength requirement may be made for light-weight doors and windows based on the nature of the waste management operations if the following criteria are met:
	- the doors and windows provide an effective barrier again fugitive dust emissions
	- the unit is designed and operated in a manner that ensures that the waste will not come in contact with the doors or windows.)
	
	(NOTE: A containment building can serve as secondary containment systems for tanks within the building if:
	- it meets the requirements of 40 CFR 264.193(d)(1) (see checklist item 4-109)
	- it meets the requirements of 40 CFR 264.193(b) and 264.193(c)(1-2) (see checklist item 4-109).)
	
	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY *REQUIREMENTS:*	**REVIEWER CHECKS:**
4-118. Containment buildings are required to be operated according to specific standards (40 CFR 264.1101(a)(3), 264.1101(c)(1), 264.1101 (c)(4), 265.1101(a)(3), 265.1101(c)(1), and 265.1101(c)(4)).	Verify that incompatible wastes or treatment reagents are not placed in the building or its secondary containment system if they could cause the unit or the secondary containment system to leak, corrode, or otherwise fail. (1)(2)(4)(18)(23) Verify that the following operational procedures are done: (1)(2)(4)(18) - controls and practices are used to ensure the containment of the waste within the building - the primary barrier is maintained so that it is free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier - the level of the stored/treated hazardous waste is maintained so that the height of any containment wall is not exceeded - measures are implemented to prevent the tracking of hazardous waste out of the unit by personnel or equipment used in the handling of the waste - there is a designated area for the decontamination of equipment and collection of rinsate - any collected rinsate is managed as needed according to its constituents - measures are implemented to control fugitive dust emissions so that no openings exhibit visible emissions - particulate collection devices are *maintained and operated* according to sound air pollution control practices. Verify that data is gathered from monitoring equipment and leak detection equipment and the site is inspected at least once every 7 days and the results recorded in the operating record. (1)(2)(4)(18)
...	...
4-119. Containment buildings are required to be certified by a registered professional engineer (40 CFR 264.1101(c)(2) and 265.1101(c)(2)).	Verify that the building has been certified by a qualified, registered, professional engineer. (1)(2)(4)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-120. Leaks in containment buildings must be repaired and reported (40 CFR 264.1101(c)(3) and 265.1101(c)(3)).	Verify that if a condition is detected that could lead to a leak or has already caused a leak, it is repaired promptly. (1)(2)(4)(18)(23) Verify that when a leak is discovered: (1)(2)(4) - the discovery is recorded in the facility operating record - the portion of the containment building that is affected is removed from service - a cleanup and repair schedule is established - within 7 days the Regional Administrator is notified and within 14 working days written notice is provided to the Regional Administrator - the Regional Administrator is notified upon the completion of all repairs and certification from a qualified, registered, professional engineer is also submitted.
...	...
4-121. Containment buildings that contain both areas with and without secondary containment must meet specific requirements (40 CFR 264.1101(d) and 265.1101(d)).	Verify that each area is designed and operated according to the appropriate requirements. (1)(2)(4)(18)(23) Verify that measures are taken to prevent the release of liquids or wet materials into areas without secondary containment. (1)(2)(4) Verify that a written description is maintained in the facility operating log of operating procedures used to maintain the integrity of areas without secondary containment. (1)(2)(4)
...	...
4-122. When a containment building is closed specific requirements must be met (40 CFR 264.1102 and 265.1102).	Determine if the facility has closed a containment building recently. (1)(2)(4)(18)(23) Verify that at closure, all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate were removed or decontaminated. (1)(2)(4) Verify that the containment building is closed in accordance with closure and post-closure requirements for TSDFs as outlined in the sections titled *ALL TSDFs - Documentation* and *ALL TSDFs - Closure*. (1)(2)(4) Verify that if it is found that not all contaminated subsoils can be practicably removed or decontaminated, the facility is closed and landfill post-closure requirements are implemented. (1)(2)(4)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Emissions From Process Vents	
4-123. Installations with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppm are required to meet specific standards (40 CFR 264.1030(b), 264.1032, 265.1030(b), and 265.1032).	Verify that one of the following is met: (1)(2)(4)(18)(23) - total organic emissions from the process vents do not exceed 1.4 kg/h (3 lb/h) and 2.8 megagrams (Mg)/yr (3.1 tons/yr) - total organic emissions are reduced by use of a control device. (NOTE: These standards apply to: - TSDFs that are required to have a permit - hazardous waste recycling units that are located on a hazardous waste management facility that is required to have a permit.)
...	...
4-124. When a facility uses a closed vent system and control device to meet the standards for total organic emissions, the closed vent system and control device must meet certain minimum requirements (40 CFR 264.1033 and 265.1033).	Verify that control devices involving vapor recovery are designed and operated to recovery the organic vapors vented to the air with an efficiency of 95 weight percent or greater unless the total organic emission limit can be attained at an efficiency of less than 95 weight percent. (1)(2)(4)(18)(23) Verify that if an enclosed combustion device is used (i.e., vapor incinerator, boiler, or process heater), it is designed and operated to reduce the organic emissions vented to it by 95 weight percent or greater, to achieve a total organic compound concentration of 20 ppm or to provide a minimum residence time of 0.50 seconds (s) at a minimum temperature of 760 ^{0}C. (1)(2)(4)(18) Verify that if a boiler or process heater is used as the control device, the vent stream is introduced into the flame zone of the boiler or process heater. (1)(2)(4)(18) Verify that if flares are used: (1)(2)(4)(18) - they are designed and operated with no visible emissions except for periods not in excess of 5 minutes (min) during any 2 consecutive hours - it is operated with a flame present at all times - it is used only if the net heating value of the gas being combusted is 11.2 MJ/standard cubic meters (scm) (300 Btu/standard cubic feet (scf)) or greater if the flare is steam assisted or air-assisted

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-124. (continued)	- if they are nonassisted, the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater - if they are nonassisted or steam assisted, they have an exit velocity less than 18.3 m/s (60 ft/s) except: - when the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1000 Btu/scf) and the exit velocity is equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s). Verify that each monitor and control device is inspected on a routine basis. (1)(2)(4)
...	...
4-125. TSDFs are required to maintain specific records pertaining to process vent emissions (40 CFR 264.1035 and 265.1035).	Verify that the following information is kept in the operating record: (1)(2)(4)(18)(23) - an implementation schedule - up-to-date documentation of compliance - the test plan if test data is used to determine the organic removal efficiency or total organic compound concentration achieved by a control device - design documentation - monitoring and inspection results - notations of exceedances. Verify that records of monitoring operations and inspection information are kept for 3 yr. (1)(2)(4)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Air Emission Standards for Equipment Leaks **4-126.** TSDFs with pumps in light liquid service that contain or contacts hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR 264.1050(b), 264.1052, 265.1050(b), and 265.1052). ...	Verify that pumps in light liquid service are monitored monthly according to designated reference methods and inspected visually weekly. (1)(2)(4)(18)(23) (NOTE: A leak is detected if there is an instrument reading of 10,000 ppm or greater or if there is an indication of liquid dripping from the pump seal.) Verify that when a leak is detected, the first attempt at repair is made within 5 calendar days and repair is completed within 15 calendar days. (1)(2)(4)(18) (NOTE: Pumps equipped with dual mechanical seal systems, pumps designated for no detectable emissions that meet standards outlined below do not have to be monitored monthly or visually checked weekly.) Verify that pumps equipped with a dual mechanical seal system meet the following design and operation requirements: (1)(2)(4)(18) - the dual mechanical seal system is operated with barrier fluid at a pressure that is at all times greater than the pump stuffing box or equipped with a barrier fluid degassing reservoir that is connected by a closed vent system to a control device or equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emission to the atmosphere - the barrier fluid system is not a hazardous waste with organic concentrations 10 percent or greater by weight - the barrier fluid system is equipped with a sensor that will detect failure if the seal is broken - pumps are checked by visual inspection weekly - sensors are checked daily or equipped with an audible alarm that is checked monthly. Verify that pumps that are designated for no detectable emissions as indicated by an instrument reading of 500 ppm above background or less meet the following: (1)(2)(4)(18) - they are operated with no detectable emissions - they are tested for compliance initially upon designation, annually, and at other times as requested by the Regional Administrator. (NOTE: Any pump that is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device is exempt from these requirements.) (NOTE: These standards apply to facilities that are required to have a permit and hazardous waste recycling units that are located on hazardous waste management facilities that are required to have a permit.) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-127. TSDFs with compressors that contain or contacts hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR 264.1050(b), 264.1053, 265.1050(b), and 265.1053).	Verify that each compressor is equipped with a seal system that includes a barrier fluid system and that prevents leakage of total organic emissions to the atmosphere except: (1)(2)(4)(18)(23)
	
	- if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device
	- it is designated for no detectable emission and:
	  - it operates at an instrument reading of less than 500 ppm above background
	  - is tested for compliance initially upon designation, annually, and at times as requested by the Regional Administrator.
	
	Verify that compressor seal systems meet one of the following: (1)(2)(4)(18)
	
	- its operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure
	- its equipped with a barrier fluid system that is connected to a closed-vent system to a control device
	- its equipped with a system that purges that barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.
	
	Verify that the barrier fluid is not a hazardous waste with organic concentrations 10 percent or greater by weight. (1)(2)(4)
	
	Verify that each barrier fluid system is equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both. (1)(2)(4)
	
	Verify that each sensor is checked daily or that it is equipped with an audible alarm that is checked monthly. (1)(2)(4)
	
	(NOTE: Sensors on compressors located within the boundary of an unmanned site must be checked daily.)
	
	Verify that when a leak is detected, the first attempt at repair is made within 5 calendar days and the repair is made with 15 calendar days. (1)(2)(4)
	
	(NOTE: These standards apply to facilities that are required to have a permit and ha ardous waste recycling units that are located on hazardous waste management facilities that are required to have a permit.)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-128. TSDFs with pressure relief devices in gas/vapor service that contain or contacts hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR 264.1050(b), 264.1054, 265.1050(b), and 265.1054).	Verify that except during pressure releases, each pressure relief device in gas/vapor service is operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background. (1)(2)(4)(18)(23) Verify that if there is a pressure release, the device is returned to a no detectable emission status within 5 calendar days and the device is monitored to ensure compliance. (1)(2)(4) (NOTE: Any pressure relief device that equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device is exempt from these requirements.) (NOTE: These standards apply to facilities that are required to have a permit and hazardous waste recycling units that are located on hazardous waste management facilities that are required to have a permit.)
...	...
4-129. TSDFs with sampling connecting systems that contain or contacts hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR 264.1050(b), 264.1055, 265.1050(b), and 265.1055).	Verify that each sampling connection system is equipped with a closed purge system or closed-vent system. (1)(2)(4)(18)(23) Verify that each closed purge system or closed-vent system does one of the following: (1)(2)(4) - returns the purged hazardous waste stream directly to the hazardous waste management process line with no detectable emissions to atmosphere - collects and recycles the purged hazardous waste stream with no detectable emissions to the atmosphere - is designed and operated to capture and transport all the purged hazardous waste stream to a control device. (NOTE: In-situ sampling systems are exempt from these requirements.) (NOTE: These standards apply to facilities that are required to have a permit and hazardous waste recycling units that are located on hazardous waste management facilities that are required to have a permit.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-130. TSDFs with open-ended valves or lines that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR 264.1050(b), 264.1056, 265.1050(b), and 265.1056).	Verify that each open-ended valve or line is equipped with a cap, blind flange, plug, or a second valve. (1)(2)(4)(18)(23) Verify that the cap, blind flange, plug, or second valve seals the open end at all times except during operations requiring hazardous waste stream flow through the open-ended valve or line. (1)(2)(4) Verify that each open-ended valve or line equipped with a second valve is operated so that the valve on the hazardous waste stream end is closed before the second valve is closed. (1)(2)(4) Verify that when a double block and bleed system is being used, the bleed valve is shut or plugged except during operations that require venting the line between the block valves. (1)(2)(4) (NOTE: These standards apply to facilities that are required to have a permit and hazardous waste recycling units that are located on hazardous waste management facilities that are required to have a permit.)
...	...
4-131. TSDFs with valves in gas/vapor service or light liquid service that contain or contacts hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR 264.1050(b), 264.1057, 264.1061, 265.1050(b), 265.1057, and 265.1061).	Verify that valves in gas/vapor service or light liquid service are monitored monthly to detect leaks. (1)(2)(4)(18)(23) (NOTE: A leak is detected if an instrument reading of 10,000 ppm or greater is measured. But, if a leak is not detected for 2 consecutive months, monitoring may be cut back to quarterly until a leak is detected.) Verify that the first attempt at repairing a leak is done with 5 calendar days after detection and leak repair is completed within 15 days after detection. (1)(2)(4) (NOTE: Valve that are designated for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background do not have to be monitored monthly if: - the valve has no external actuating mechanism on contact with the hazardous waste stream - the valve is operated with emission less than 500 ppm above background - the valve is tested initially upon designation, annually, and at the request of the Regional Administrator.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-131. (continued)	(NOTE: Valves that are designated as unsafe-to-monitor are exempt from the requirement for monthly monitoring if: - the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger - a written monitoring plan is followed that requires monitoring as often as is reasonably practicable during safe-to-monitor times.) (NOTE: Valves that are designated as difficult-to-monitor are exempt from monthly monitoring requirements if: - the valve cannot be monitored without elevating the monitoring personnel more than 3 m (10 ft) above a support surface - the hazardous waste management unit within which the valve is located was in operation before 21 June 1990 - a written monitoring plan is followed that requires the monitoring of the valve at least once per calendar year.) (NOTE: The facility may elect to have all valves within a hazardous waste management unit comply with an alternative standard of no greater than 2 percent of the valves to leak.) (NOTE: These standards apply to facilities that are required to have a permit and hazardous waste recycling units that are located on hazardous waste management facilities that are required to have a permit.)
...	...
4-132. TSDFs with pumps and valves in heavy liquid service, pressure relief devices in light liquid service or heavy liquid service and other connectors that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR 264.1050(b), 264.1058, 265.1050(b), and 265.1058).	Verify that pumps and valves in heavy liquid service, pressure relief devices in light liquid service or heavy liquid service and other connectors are required to be monitored within 5 days if evidence of a potential leak is found by visual, olfactory, audible, or other detection method. (1)(2)(4)(18)(23) (NOTE: A leak is detected if an instrument reading of 10,000 ppm or greater is measured.) Verify that when a leak is detected the first attempt at repair occurs within 5 days and repair is done within 15 days after discovery. (1)(2)(4)(18) (NOTE: These standards apply to facilities that are required to have a permit and hazardous waste recycling units that are located on hazardous waste management facilities that are required to have a permit.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-133. TSDFs are required to keep specific records pertaining to the valves, pumps, pressure relief devices, and connecting systems being monitored for leaks and submit certain reports (40 CFR 264.1050(b), 264.1064, 264.1065, 265.1050(b), and 265.1064). ...	Verify that the following information is maintained in the facility operating record: (1)(2)(4)(18)(23) - equipment ID No. and hazardous management unit identification - approximate locations - type of equipment - percent-by-weight total organics in the hazardous waste stream at the equipment - hazardous waste state at the equipment (gas, liquid, vapor) - method of compliance - implementation schedule if needed - a performance plan for control devices as needed - documentation of compliance - documentation of repair. Verify that permitted TSDFs submit a semiannual report indicating leaks and repairs to the Regional Administrator. (1)(2)(4)(18) (NOTE: If repairs are made and the control device does not exceed or operate outside of the design specifications for more than 24 h a report to the Regional Administrator is not required.) (NOTE: These standards apply to facilities that are required to have a permit and hazardous waste recycling units that are located on hazardous waste management facilities that are required to have a permit.) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

Documentation Requirements
 	
4-134. Installations that treat, store, or dispose of hazardous wastes must develop and follow a written waste analysis plan (40 CFR 264.13(b), 264.13(c), 265.13(b), and 265.13(c)).
 	
...
	Determine if the installation treats, stores, or disposes of hazardous waste. (1)(2)(4)(18)(23)
	
	Verify that the installation has a waste analysis plan. (1)(2)(4)(18)(23)
	
	Verify that the installation is following the waste analysis plan by comparing the plan and records of actual procedures. (1)(2)(4)(18)(23)
	
	Verify that the waste analysis plan contains the following: (1)(2)(4)(18)(23)
	
	- testing parameters for which each hazardous waste will be analyzed
	- test methods
	- sampling methods used to obtain a representative sample
	- frequency in which the analysis will be reviewed or repeated to ensure that the analysis is up-to-date and accurate
	- waste analysis supplied by offsite generators
	- methods used to meet the additional analysis requirements for ignitable, reactive, or incompatible materials, bulk and containerized liquids, and incineration are stated (if applicable)
	- additional information as follows for offsite facilities:
	  - specific procedures to inspect (and analyze if necessary) each movement of hazardous waste received to ensure that it matches the identity of the waste designated in the manifest
	  - the method of sampling used to obtain a representative sample (if the identification method includes sampling)
	  - the procedures that an offsite landfill receiving containerized hazardous waste will use to determine if a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.
	
	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-135. TSDFs must have formal written inspection schedule and a log of inspection results (40 CFR 264.15 and 265.15).	Verify that the facility has a formal written inspection schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that are important to preventing, detecting, or responding to environmental or human health hazards. (1)(2)(4)(18)(23) Verify that the schedule is kept at the facility and lists types of problems to be looked for at the facility. (1)(2)(4) Verify that areas subject to spills, such as loading and unloading areas, are inspected daily when in use. (1)(2)(4) Verify that logs, or records, of the inspections are kept for 3 yr and include the following: (1)(2)(4) - the date and time of the inspection - the name of the inspector - a notation of the observations made - the date and nature of any repairs or other remedial actions.
...	...
4-136. TSDFs must have a contingency plan (40 CFR 264.50 through 264.54 and 265.50 through 265.54). (NOTE: TSDFs may be addressed in the facility's SPCC plan or other emergency plan, or if none exists, in a separate contingency plan.)	Verify that the contingency plan is designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents. (1)(2)(4)(18)(23) Verify that the plan includes the following: (1)(2)(4)(18)(23) - a description of actions to be taken during an emergency - a description of arrangements made with local police departments, fire departments, hospitals, contractors, and state and local emergency response teams - names, addresses, and phone numbers of all persons qualified to act as emergency coordinator - a list of all emergency equipment at the facility and where this equipment is required, located, and what it looks like - an evacuation plan for facility personnel where there is a possibility evacuation would be needed. Verify that copies of the contingency plan are maintained at the TSDF and also have been submitted to organizations which may be called upon to provide emergency services. (1)(2)(4)(18)(23) Verify that the contingency plan is routinely reviewed and updated, especially when the facility is issued a new permit, the plan fails in an emergency, the emergency coordinators change, the waste being handled changes, and/or the list of emergency equipment changes. (1)(2)(4)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-137. TSDFs operators must record the time, date, and details of any incident that requires implementing the contingency plan (40 CFR 264.56(j) and 265.56(j)).	Determine if incidents have been recorded and corrective actions taken through a review of TSDF operating records. (1)(2)(4)(18)(23) Verify that written reports have been submitted to the USEPA regional administrator within 15 days after the incident. (1)(2)(4)(18)(23)
...	...
4-138. TSDF operators must keep written operating records at the facility (40 CFR 264.73 through 264.74 and 265.73 through 265.74).	Verify that the facility has a written operating record. (1)(2)(4)(18)(23) Determine if the operating record includes: (1)(2)(4) - a description and quantity of each hazardous waste received at the facility and the method(s) and date(s) of treatment, storage, or disposal of each waste received at the facility - the location of each hazardous waste within the facility (cross-referenced to specific manifest document numbers and the quantity at each location) - for disposal facilities, the location and quantity is recorded on a map or diagram of each cell or disposal area - records and results of waste analyses - reports of all the incidents that required the implementation of the contingency plan - records and results of inspections (only a 3-yr retention period) - monitoring, testing, and analytical data (where required) - for offsite facilities, notices to the generator - annual certification that the facility has a program in place to reduce the volume and toxicity of hazardous waste, and that the proposed method of treatment, storage, or disposal minimizes the present and future threat to human health and the environment - the record of the quantities and date of placement for each shipment of hazardous waste placed in land disposal units under extension granted by 40 CFR 268.5, a petition granted under 40 CFR 268.6, or a certification granted under 40 CFR 268.8 - a copy of the applicable notice, demonstration, and certification required for any restricted hazardous wastes - certifications and demonstrations provided to generators or received from generators. (NOTE: This information must be recorded in the operating record until closure of the facility.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-139. TSDFs must prepare and submit a single copy of a biennial report to the USEPA Regional Administrator by 1 March of each even numbered year (40 CFR 264.75 and 265.75).	Obtain a copy of the biennial report (USEPA Form 8700-13D or applicable state form). (1)(2)(4)(18)(23) Verify that biennial reports are prepared and submitted and contain the following information: - USEPA ID No. - facility name and address - calendar year covered by report - description and quantity of each waste received - method of treatment, storage, or disposal for each waste - certification signed by owner or operator of the facility - offsite facilities must also report USEPA ID No. for each hazardous waste generator from which waste was received - description of efforts undertaken during the year to reduce the volume and toxicity of waste generated - description of changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent that information is available for the years prior to 1984.
...	...
4-140. TSDFs must have a written closure plan for each facility (40 CFR 264.110, 264.112(a), 264.112(b), 265.110, 265.112(a), and 265.112 (b)).	*Determine if the facility has a written closure plan.* (1)(2)(4)(18)(23) Determine, by review, if the closure plan addresses: (1)(2)(4)(18)(23) - how the facility will be closed - estimates of the maximum amount of wastes in storage and in treatment during the life of the facility - description of decontamination procedures to be used during closure - schedule for closure of each unit.
...	...
4-141. Facilities with hazardous waste disposal units are required to have a written post-closure plan (40 CFR 264.110(b), 264.118, 265.110(b), and 265.118(a) through 265.118(d)).	Verify that the plan includes the following information: (1)(2)(4)(18)(23) - identifies the activities that will be carried on after closure of each disposal unit and the frequency of these activities - name address and phone number of the person or office to contact during post-closure care. Verify that the plan is amended if there is a change in the expected year of final closure, if events occur during the life of the facility that impact closure care, or if there is a change in facility design. (1)(2)(4)(18)(23) (NOTE: These requirements apply only to the following: - all hazardous waste disposal facilities - waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure - tank systems that are required to meet the requirements for landfills - as of 18 February 1993, containment buildings that are required to meet the requirements for landfills.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-142. TSDFs that receive waste from offsite sources must comply with manifest requirements (40 CFR 264.70, 264.71, 265.70, and 265.71).	Determine if the facility receives waste from offsite sources. (1)(2)(4)(18)(23) Determine if manifests contain the following by reviewing a random number of manifests: (1)(2)(4)(18)(23) - proper signature - date of receipt. Verify that a copy was sent to the generator within 30 days of receipt of waste. (1)(2)(4)(18)(23) Verify that copies are retained at the facility for 3 yr. (1)(2)(4)(18)(23) Verify that exclusion certification from CESQGs are kept on file. (1)(2)(4)(18)(23)
...	...
4-143. TSDFs receiving hazardous waste from a foreign source must notify the Regional Administrator (40 CFR 264.12(a) and 265.12(a)).	Verify that notification is sent in writing at least 4 weeks before delivery is expected. (1)(2)(4)(18)(23)
...	...
4-144. TSDFs which receive waste from offsite sources are required to attempt to resolve manifest discrepancies when they occur (40 CFR 264.72 and 265.72).	Determine if significant discrepancies existed between the quantity or type of waste designated on the manifest or shipping paper, and the quantity or type of waste the facility received. (1)(2)(4)(18)(23) Verify that upon discovery of a significant discrepancy, an attempt was made to reconcile the discrepancy with the generator and/or the transporter. (1)(2)(4)(18)(23) Verify that if the discrepancy could not be resolved within 15 days after receipt of the waste, the Regional Administrator was notified by mail and the following was included: (1)(2)(4)(18)(23) - a letter describing the discrepancy and the attempts to reconcile it - copy of the manifest or shipping paper at issue. (NOTE: For bulk waste, variations greater than 10 percent in weight, and for batch waste, any variation in piece count is a significant discrepancy. Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper. These discrepancies may only be discovered after waste analysis.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-145. Reports must be submitted to the USEPA when a facility accepts an unmanifested waste shipment (40 CFR 264.76 and 265.76).	Determine if unmanifested shipments have been accepted. (1)(2)(4)(18)(23) Verify that reports (Form 8700-13B) are submitted within 15 days. (1)(2)(4)(18)(23) (NOTE: When small quantities (i.e., waste from a CESQG) are received without certification that the waste is excluded from manifest requirements, an unmanifested waste report should be filed.)
...	...
Closure	
4-146. TSDFs must comply with certain closure schedules (40 CFR 264.113(a) through 264.113(d), 264.114, 265.113(a) through 265.113(d), and 265.114).	Verify that within 90 days after receiving final volume of waste, all hazardous waste has been treated and removed or disposed of onsite in accordance with the closure plan. (1)(2)(4)(18)(23) (NOTE: The Regional Administrator may grant variances on the time period.) (NOTE: During partial and final closure periods all contaminated equipment, structures and soils must be properly disposed of. By removing any hazardous wastes or constituents during closure, the TSDF becomes a hazardous waste generator and is subject to the requirements of 40 CFR 262.)
...	...
4-147. All TSDFs are required to follow certain notification procedures for partial and final closure (40 CFR 264.112 (d)(1) and 265.112(d)(1)).	Verify that TSDFs with surface impoundments, waste piles, land treatment or landfill units notify the Regional Administrator: (1)(2)(4)(18)(23) - 180 days prior to expected date of beginning closure of 1st unit for interim status TSDFs without an approved closure plan, 60 days with an approved closure plan - 60 days prior to expected date of beginning closure for all permitted facilities. Verify that TSDFs with only tanks, containers or incinerator units notify the Regional Administrator within 45 days prior to date of beginning final closure. (1)(2)(4)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-148. Within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile, land treatment, and landfill unit facilities must submit a certification of closure to the Regional Administrator (40 CFR 264.115 and 265.115).	Verify that a certification of closure was sent to the Regional Administrator by registered mail. (1)(2)(4)(18)(23)
...	...
4-149. By the time that certification of closure has been submitted, facilities are required to submit a survey plan indicating the location and dimensions of landfill cells in relationship to permanently surveyed landmarks to specific authorities (40 CFR 264.110(b), 264.116, 265.110(b), and 265.116).	Verify that a survey plan was submitted to the local zoning authorities or the authority with jurisdiction over local land use, and the Regional Administrator. (1)(2)(4)(18)(23) (NOTE: These requirements apply to the following: - all hazardous waste disposal facilities - waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure - tank systems that are required to meet the requirements for landfills - as of 18 February 1993, containment buildings that are required to meet the requirements for landfills.)
...	...
4-150. Post-closure care of hazardous waste management units must meet specific parameters (40 CFR 264.110(b), 264.117, 265.110(b), and 265.117).	Verify that post-closure care last for 30 yr after closure and consists of the following: (1)(2)(4)(18)(23) - monitoring and reporting as required in other sections - maintenance of waste containment systems - use of the property is not allowed to disturb the integrity of the final cover, liner, or any other components. (NOTE: These requirements apply to the following: - all hazardous waste disposal facilities - waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure - tank systems that are required to meet the requirements for landfills - as of 18 February 1993, containment buildings that are required to meet the requirements for landfills.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PERMITTED TSDFs	
4-151. Permitted facilities that receive hazardous waste from offsite sources must inform the generator in writing that the facility has the appropriate permit and will accept the waste (40 CFR 264.12(b)).	Verify that notification is sent and a copy is kept in the operating record. (1)(2)(4)(18)(23)
...	...
4-152. Permitted facilities that treat, store, or dispose of hazardous waste with solid waste management units are required to institute corrective actions as outlined in the permit to protect human health and the environment from releases (40 CFR 264.90 (a) and 264.101). (NOTE: This applies regardless of when the waste was placed in solid waste management units.)	Verify that corrective actions required by the permit are being done. (1)(2)(4)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-153. Container storage areas at permitted TSDFs must have a containment system that meets specific standards (40 CFR 264.174, 264.175(a), and 264.175(b)).	Verify that all container storage areas meet the following criteria: (1)(2)(4)(18)(23) - containers are stored on a base that is free from cracks or gaps and is impervious so that leaks, spills, and precipitation are contained - the base is sloped (or otherwise designed) to drain and remove liquids resulting from leaks, spills, or precipitation unless the containers are elevated - spilled or leaked waste and accumulated precipitation is removed in a timely manner - the containment system has adequate capacity to contain 10 percent of the volume of the containers or the volume of the largest container whichever is greater - run-on into the containment system is prevented unless the system has sufficient capacity to contain any run-on that might enter the system in addition to the already required capacity. Verify that the containment system is inspected weekly for deterioration. (1)(2)(4)(18)(23) (NOTE: If the collected material is a hazardous waste, it must be handled accordingly. If it is discharged through a point source, it is subject to the Section 402 *Clean Water Act (CWA)* requirements.)
...	...
4-154. Containment at permitted TSDFs for containers holding wastes that do not contain free liquids must meet specific criteria which are lesser than that for general containment areas (40 CFR 264.175(c)).	Verify that the following storage area criteria are met for wastes that do not contain free liquids: (1)(2)(4)(18)(23) - the area is sloped or able to drain and remove liquid resulting from precipitation - containers are elevated or protected from contact with accumulated liquid. (NOTE: Storage areas must have complete containment systems when the containers holding F020, F022, F023, F026, and F027 do not contain free liquids.)
...	...
4-155. When container storage areas are closed at permitted TSDFs, specific conditions must be met (40 CFR 264.178).	Verify that closure criteria was met: (1)(2)(4)(18)(23) - all hazardous waste and residues were removed from the containment system - remaining containers, liners, bases, and soils (containing or contaminated with hazardous waste or hazardous waste residues) were decontaminated or removed - all hazardous wastes (including materials removed from the containment system) were managed appropriately.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-156. Facilities with permitted surface impoundments, waste piles, and land treatment units or landfills that received hazardous waste after 26 July 1982 are required to conduct monitoring and response programs under specific circumstances (40 CFR 264.90(a)(2) and 264.91).	Verify that whenever hazardous constituents specified in the permit by the Regional Administrator are detected at designated compliance points, a compliance monitoring program is started. (1)(2)(4)(18)(23) Verify that whenever groundwater protection limits are exceeded, a corrective action program is initiated. (1)(2)(4)(18)(23) Verify that whenever hazardous constituents specified in the permit by the Regional Administrator exceed concentration limits under 40 CFR 264.94 in groundwater between a designated compliance point and the downgradient facility property boundary a corrective action program or a detection monitoring program is implemented. (1)(2)(4)(18)(23) Verify that the facility is meeting the elements of the monitoring and response program specified by the Regional Administrator in the permit. (1)(2)(4)(18)(23)
...	...
4-157. Facilities with permitted surface impoundments, waste piles, and land treatment units or landfills that received hazardous waste after 26 July 1982 are required to comply with specific concentration limits in the groundwater for hazardous constituents as designated by the Regional Administrator in the permit (40 CFR 264.94).	Verify that the concentration of hazardous constituents: (1)(2)(4)(18)(23) - do not exceed the background level of that constituent in the groundwater at the time that limit is specified in the permit - do not exceed the limits outlined in 40 CFR 264.94 - do not exceed an alternate limit set by the Regional Administrator.
...	...
4-158. Facilities with permitted surface impoundments, waste piles, and land treatment units or landfills that received hazardous waste after 26 July 1982 and that detect statistically significant evidence of contamination for chemical parameters or hazardous constituents designated in the permit must meet specific requirements (40 CFR 264.98 (g)).	Verify that if statistically significant evidence of contamination is detected the following actions are taken: (1)(2)(4)(18)(23) - the Regional Administrator is notified in writing within 7 days - the groundwater in all monitoring wells is immediately sampled - sampling is repeated after 1 mo for any compounds detected that are listed in Appendix IX of 40 CFR 264 - within 90 days an application for a permit is submitted to the Regional Administrator to establish a compliance monitoring program.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-159. If during a compliance monitoring program the facility determines that the concentration limits listed in 40 CFR 264.94 are being exceeded at any monitoring well at the point of compliance, specific actions are required (40 CFR 264.99(h)).	Verify that the following actions are taken when concentration limits are exceeded: (1)(2)(4)(18)(23) - the Regional Administrator is notified in writing within 7 days - an application for a permit modification to establish a corrective action program is submitted within 180 days.
...	...
4-160. Facilities operating corrective actions programs are required to report semi-annually to the Regional Administrator on their effectiveness (40 CFR 264.100(g)).	Determine if the facility operates a corrective action program. (1)(2)(4)(18)(23)
...	...
4-161. Facilities that are seeking a permit for the treatment, storage, or disposal of hazardous waste must initiate the corrective actions needed to protect human health and the environment from all releases of hazardous waste of constituents from any solid waste management unit, regardless of when the waste was placed in the unit (40 CFR 264.101).	Verify that the corrective actions specified in the permit are being done and the compliance schedule is being met. (1)(2)(4)(18)(23) (NOTE: As a part of the corrective action program the Regional Administrator may designate an area of the facility as a Corrective Action Management Unit (CAMU) or a Temporary Unit (TU).)
...	...
4-162. All permitted TSDFs are required to document compliance with ignitable, reactive, or incompatible waste management requirements (40 CFR 264.17(c)).	Verify that compliance documentation is maintained at the facility, and that it is based on published scientific or engineering literature, data from field tests, or the results of the treatment of similar wastes by similar treatment processes or similar operating conditions. (1)(2)(4)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-163. Permitted TSDFs with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppm are required to submit a semi-annual report concerning process vent emissions (40 CFR 264.1036).	Verify that a semi-annual report is submitted to the Regional Administrator and that it includes the following: (1)(2)(4)(18)(23) - the USEPA ID No., name, and address of the facility - dates when the control device exceeded or operated outside of design specification and the exceedances were not corrected within 24 h - dates when a flare operated with visible emissions - the duration and cause of exceedances and corrective measures taken. (NOTE: If there are no exceedances a report is not required.)
...	...
INTERIM STATUS TSDFs	
4-164. Interim status TSDFs with tank systems used to treat or store a substantially different waste than before or using a substantially different process than previously must conduct waste analysis and trial tests (40 CFR 265.200).	Verify that the facility has interim status proper waste analysis and trial tests done when a tank system is used to treat or store a substantially different waste than before or if a substantially different process is used than previously. (1)(2)(4)(18)(23) Verify that if similar waste under similar operating conditions is to be treated or stored, written documentation on the waste exists. (1)(2)(4)(18)(23)
...	...
4-165. Facilities operating surface impoundments, landfills, or land treatment facilities are required to have a groundwater monitoring program that it can determine the impact of the facility on the uppermost aquifer (40 CFR 265.90(a) through 265.90 (c) and 265.90(e)).	Verify that unless the facility has demonstrated in writing that there is a low potential for water migration or received a waiver, the facility has a groundwater monitoring program. (1)(2)(4)(18)(23) Verify that the monitoring program is carried out throughout the active life of the facility and also during post-closure for disposal facilities. (1)(2)(4)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-166. Groundwater monitoring systems are required to meet specific standards (40 CFR 265.91).	Verify that the groundwater monitoring system is capable of yielding groundwater samples for analysis. (1)(2)(4)(18)(23) Verify that groundwater monitoring systems consist of the following: (1)(2)(4)(18)(23) - at least one monitoring wells installed hydraulically upgradient from the limit of the waste management area - at least three monitoring wells installed hydraulically downgradient at the limit of the waste management area - an alternate hydraulically downgradient monitoring well location that has been demonstrated in writing to be sufficient. (NOTE: Separate monitoring systems are not required for each component of a waste management system if the upgradient and downgradient sampling will detect any discharge from the waste management area.)
...	...
4-167. The facility must gather and analyze samples from the groundwater monitoring system according to a groundwater sampling and analysis plan (40 CFR 265.92).	Verify that the plan includes procedures and techniques for the following: (1)(2)(4)(18)(23) - sample collection - sample preservation and shipment - analytical procedures - chain of custody control. Verify that the facility established initial back groundwater quality. (1)(2)(4)(18)(23) Verify that the concentrations and/or values are determined for the following parameters and samples collected as indicated: (1)(2)(4)(18)(23) - parameters characterizing the suitability of groundwater as drinking water as found in *Appendix III of 40 CFR 265* - parameters of chloride, iron, manganese, phenols, sodium, sulfate: annually - parameters for pH, specific conductance, total organic carbon, total organic halogen: semi-annually. Verify that the elevation of the groundwater surface is determined each time a sample is obtained. (1)(2)(4)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-168. Installations with interim status TSDFs must have an outline of a more extensive groundwater quality assessment program (40 CFR 265.93(a)).	Determine if a groundwater quality assessment program has been developed. (1)(2)(4)(18)(23) Verify that the program is capable of determining: (1)(2)(4)(18)(23) - whether or not hazardous waste or hazardous waste constituents have entered the groundwater - the rate and extent of migration of hazardous waste or hazardous waste constituents in the groundwater - the concentrations of hazardous waste or hazardous waste constituents in the groundwater.
...	...
4-169. When there is a significant increase for pH, specific conductance, total organic carbon, or total organic halogen (or pH decrease) in the downgradient wells the facility must perform specific actions (40 CFR 265.92(c)(2) and 265.92 (d)(1) through 265.92 (d)(4)).	Verify that additional samples are taken from the wells showing a significant change. (1)(2)(4)(18)(23) Verify that if a significant increase (or pH decrease) is confirmed, written notice is issued to the Regional Administrator within 7 days of the confirmation. (1)(2)(4)(18)(23) Verify that within 15 days after the notification was submitted, the facility submits a groundwater quality assessment program. (1)(2)(4)(18)(23) Verify that the program is implemented. (1)(2)(4)(18)(23)
...	...
4-170. If a facility is required to have a groundwater assessment program, specific reports must be submitted and actions taken depending on the results of the program (40 CFR 265.93 (d)(5) through 265.93(d)(7)).	Verify that the program was implemented as soon as possible and a written report containing an assessment of the water was sent to the Regional Administrator. (1)(2)(4)(18)(23) (NOTE: If the results of the first determinations under the program show that no hazardous waste or hazardous waste constituents have entered the groundwater, the facility can return to its usual practices of monitoring.)
...	...
4-171. Unless the groundwater is being monitored to satisfy a groundwater assessment program, the facility is required to meet specific reporting and record keeping requirements (40 CFR 265.94(a)).	Verify that records of analyses and groundwater elevations are kept throughout the life of the facility, and for disposal facilities through post-closure. (1)(2)(4)(18)(23) Verify that during the first year of groundwater monitoring the results of parameter monitoring is submitted to the Regional Administrator within 15 days after completing each quarterly analysis. (1)(2)(4)(18)(23) Verify that after the first year, concentrations and values for monitored parameters are reported annually. (1)(2)(4)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-172. When the groundwater is being monitored to satisfy a groundwater assessment program, records have to be maintained of the analyses and annual reports submitted (40 CFR 265.94(b)). ...	Verify that records of analyses and evaluations specified in the plan are maintained throughout the active life of the facility, and for disposal facilities throughout post-closure. (1)(2)(4)(18)(23) Verify that the results of the program are submitted annually to the Regional Administrator by 1 March of each calendar year. (1)(2)(4)(18)(23) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
EXPORT/IMPORT OF HAZARDOUS WASTE	
4-173. Installations that export hazardous waste outside the United States must comply with specific notification requirements (40 CFR 262.53(a) and 265.53(b)).	Verify that 60 days prior to the initial shipment of hazardous waste to each country in each calendar year, the installation has notified the USEPA (in writing) of the following: (1)(2)(6)(23) - name, mailing address, telephone number, and USEPA ID No. of the primary exporter - by consignee, for each hazardous waste type: - identification of the hazardous waste shipped by USEPA ID No. - DOT shipping name, hazard class, and importer for the waste - estimated frequency/rate at which such waste(s) is to be exported - estimated total quantity (in units) - all points of entry to and departure from each foreign country the waste will pass through - a description of the approximate length of time the waste will remain in each country, and how it will be handled there - the mode of transportation used to transport the waste - type(s) of containers used - description of the treatment, storage, or disposal method to be used in the receiving country - name and address of the foreign consignee.
...	...
4-174. When shipping hazardous waste outside the United States, the installation is required to have an USEPA acknowledgement of consent that confirms the consent of the foreign country to receive the waste (40 CFR 262.52(c) and 262.53(f)).	Verify that a copy of the USEPA acknowledgement of consent is on file. (1)(2)(6)(23)
...	...
4-175. Primary exporters of hazardous waste must require confirmation of the delivery of the hazardous waste and a description of any significant discrepancies (40 CFR 262.54(f)).	Determine if the installation or a TSDF is the primary exporter. (1)(2)(6)(23) Verify that manifests are signed and returned in order to confirm delivery. (1)(2)(6)(23) Verify that discrepancies between the amount and type of waste listed in the manifest and that delivered are noted. (1)(2)(6)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-176. Primary exporters of hazardous waste outside the United States are required to use manifests with special additions (40 CFR 262.54(a) through 262.54(e) and 262.54(i)).	Verify that manifest copies comply with the general manifest requirements of 40 CFR 262.20 through 262.23. (1)(2)(6)(23) Review the manifest copies for the following exceptions and additions: (1)(2)(6)(23) - the name and address of the foreign consignee is put in the place of the designated installation's name, address, and USEPA ID No. - indication of the point of departure through which the waste must travel in the United States before entering the foreign country - the statement: "and conform to the terms of the attached USEPA Acknowledgment of Consent" is added to the end of the first sentence of the certification in Item 16. Verify that a copy of the manifest is provided for delivery to the United States Customs official at the US point of departure. (1)(2)(6)(23) (NOTE: The primary exporter's state may require the use of its manifest.)
...	...

4-177. Primary exporters of hazardous waste outside the United States are required to file an exception report under certain conditions (40 CFR 262.55).	Verify that an exception report was filed if: (1)(2)(6)(23)
	
	- a signed copy of the manifest from the transporter containing the following information was not received within 45 days from the day it was accepted by the initial transporter:
	  - date of departure of the waste from the United States
	  - place of departure of the waste from the United States
	- a written confirmation was not received by the installation from the foreign consignee stating that the hazardous waste was received within 90 days from the date the waste was accepted by the initial transporter
	- the waste is returned to the United States.

...	...
4-178. Primary exporters of hazardous waste are required to follow specific procedures for notification and manifests when a shipment cannot be delivered to the designated or alternate consignee (40 CFR 262.54(g)).	Verify that when a shipment cannot be delivered, the installation does one of the following: (1)(2)(6)(23) - renotifies USEPA of a change in the conditions of the original notification to allow shipment to a new consignee and obtains an USEPA Acknowledgement of Consent prior to delivery - instructs the transporter to return the waste to the primary exporter in the United States or designates another installation within the United States. Verify that the installation instructs the transporter to revise the manifest to reflect changes made. (1)(2)(6)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-179. An Annual Report must be filed with the Regional Administrator by 1 March of each year by the primary exporter (40 CFR 262.56).	Verify that an Annual Report has been submitted by 1 March of every calendar year. (1)(2)(6)(23) Verify that the Annual Reports contain the following information for all hazardous waste exported during the previous calendar year: (1)(2)(6)(23) - type, USEPA hazardous waste No., DOT hazard class and name for each hazardous waste(s) exported - USEPA ID No. for each transporter (where applicable) - quantity of hazardous waste(s) exported - frequency (dates) of hazardous waste(s) exported - ultimate destination for all hazardous waste(s) exported - efforts used to reduce the volume and toxicity of the waste (and the changes achieved during the year in comparison to previous years) - a certification signed by the primary exporter that states: *"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."*
...	...
4-180. Primary exporters of hazardous wastes must maintain additional records that relate to their export activities (40 CFR 262.57).	Verify that the following are kept for at least 3 yr: (1)(2)(6)(23) - a copy of each notification of intent to export - a copy of each USEPA Acknowledgement of Consent - a copy of each confirmation of delivery (signed manifests) of the waste - a copy of each annual report. (NOTE: Periods of retention are automatically extended during the course of any unresolved enforcement action.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

ALL SURFACE IMPOUNDMENTS
 	
4-181. Installations must follow specific restrictions concerning the types of wastes placed in any surface impoundment (40 CFR 264.229, 264.230, 265.229, and 265.230).
	Verify that incompatible wastes and/or materials are not placed in the same surface impoundment unless precautions are taken to prevent: (1)(2)(18)(23)
	
	- generation of extreme heat or pressure, fire or explosions, or violent reactions
	- production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment
	- production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion
	- damage to structural integrity of the device or facility
	- threats to human health or the environment through other means.
	
	Verify that ignitable or reactive wastes are not placed in surface impoundments unless the wastes and impoundments satisfy the restrictions in 40 CFR 268 (see section titled *LAND DISPOSAL*) and it is treated, rendered or mixed so that it is no longer ignitable or reactive. (1)(2)(18)(23)
	
	Verify that and one of the following conditions is met for the surface impoundment: (1)(2)(18)(23)
	
	- precautions are taken so that the following are prevented:
	  - generation of extreme heat or pressure, fire or explosions, or violent reactions
	  - production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment
	  - production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion
	  - damage to structural integrity of the device or facility
	  - threats to human health or the environment
	- the waste is managed so that it is protected from any materials or conditions which may cause it to ignite or react
	- the surface impoundment is used only for emergencies.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PERMITTED SURFACE IMPOUNDMENTS	
4-182. Permitted surface impoundments must be designed according to specific parameters ((40 CFR 264.221(a) and 264.221(g) through 264.221(i)).	Determine if the installation has a permitted surface impoundment. (1)(2)(18)(23) Verify that surface impoundments have a liner for all portions of the impoundment. (1)(2)(18)(23) Verify that the impoundment is designed, construction, maintained, and operated to prevent overtopping, overfilling, wind and wave action, rainfall, run-on, malfunctions of level controllers, alarms and other equipment, and human error. (1)(2)(18)(23) Verify that the impoundment has dikes that are designed and constructed and maintained to prevent massive failure of the dikes. (1)(2)(18)(23) (NOTE: The Regional Administrator will specify in the permit all design and operating practices that are necessary.)
...	...
4-183. New permitted surface impoundments that started construction after 29 January 1992, lateral expansions of permitted surface impoundments which started construction after 29 July 1992, and replacements of existing surface impoundments where reuse started after 29 July 1992 are required to meet specific design and operating criteria (40 CFR 264.19, 264.221(c) through 264.221(f), 264.222, 264.223, and 264.226(d)).	Verify that the impoundment has two or more liners and a leachate collection and removal system between liners, or the double liner requirement has been waived by the USEPA Regional Administrator. (1)(2)(18)(23) Verify that the liner meets the specifications stated in 40 CFR 264.221(c). (1)(2)(18)(23) Verify that the installation has a construction quality assurance (CQA) program to ensure that constructed units meet or exceed all design criteria and specifications in the permit. (1)(2)(18)(23) Verify that the designated CQA officer is a registered professional engineer. (1)(2)(18)(23)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-183. (continued)	Verify that the installation has a written CQA plan that addresses the following: (1)(2)(18)(23) - identification of applicable units and a description of how they will be constructed - identification of key personnel - a description of sampling and inspection activities Verify that waste is not received in a unit until an approved CQA plan has been submitted to the Regional Administrator. (1)(2)(18)(23) Verify that these surface impoundments comply with the action leakage rate assigned by the Regional Administrator. (1)(2)(18)(23) Verify that the surface impoundment facility has an approved response action plan prior to the receipt of waste. (1)(2)(18)(23) Verify that the amount of liquid removed from each leak detection system sump is recorded at least once a week during the active life and closure period. (1)(2)(18)(23) Verify that after a final cover is installed, the amount of liquids removed from each leak detection system sump is recorded at least monthly or: (1)(2)(18)(23) - if the liquid level in the sump stays below the pump operating level for 2 consecutive months, then the liquid amounts may be recorded quarterly - if the liquid level in the sump stays below the pump operating level for two consecutive quarters, then the liquid amounts may be recorded semi-annually. (NOTE: Installations with replacement surface impoundments may be exempt from these requirements if the existing unit was constructed in compliance with the design standards of sections 3004(o)(1)(A)(i) and (o)(5) of RCRA and there is no reason to believe the liner is not functioning as designed.)
...	...
4-184. Permitted installations must inspect liners and cover systems during construction and installation of liners (40 CFR 264.226(a)). (NOTE: This excludes existing portions of surface impoundments exempt from 264.221(a).)	Verify that liners and covers are inspected for uniformity, damage, and imperfections. (1)(2)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-185. Installations must conduct inspections while surface impoundments are in operation (40 CFR 264.226(b)).	Verify that inspections are conducted at least weekly and after storms to detect evidence of the following: (1)(2)(18)(23) - deterioration, malfunctions, or improper operation of overtop piping control systems - sudden drops in the level of the impoundment contents - severe erosion or other signs of deterioration in dikes or other containment devices.
...	...
4-186. Prior to the issuance of a permit and/or after any period of greater than 6 mo of disuse, the installation must obtain certification from a qualified engineer that surface impoundment dikes have structural integrity (40 CFR 264.226(c)).	Determine if the facility is permitted or if any impoundment has been out of service for 6 mo or more. (1)(2)(18)(23) Verify that the certification of structural integrity includes: (1)(2)(18)(23) - verification that the impoundment can withstand the amounts and types of waste it will contain - that the impoundment will not fail due to scouring or piping without dependence on any liner system.
...	...
4-187. Installations must follow specific restrictions concerning the types of wastes placed in permitted surface impoundments (40 CFR 264.231).	Verify that hazardous waste F020, F021, F022, F023, F026, and F027 are not placed in the impoundment unless it is done according to a management plan approved by the Regional Administrator. (1)(2)(18)(23)
...	...
4-188. Permitted surface impoundments are required to be removed from service under specific circumstances (40 CFR 264.227(a)).	Verify that surface impoundments have been removed from service if any of the following circumstances exist: (1)(2)(18)(23) - the level of liquid suddenly drops and the drop is not known to be caused by changes in flow - the dike leaks.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-189. In order to remove a permitted surface impoundment from service, specific parameters have to be met (40 CFR 264.227(b), 264.227 (c), and 264.227(e)).	Verify that when a surface impoundment is removed from service the following requirements are met: (1)(2)(18)(23) - the flow or addition of waste is immediately shut off or stopped - surface leakage is immediately contained - leaks are stopped or the impoundment is emptied - the Regional Administrator is notified within 7 days of problems. Verify that the contingency plan specifies a procedure for taking a surface impoundment out of service. (1)(2)(18)(23) Verify that if a surface impoundment is removed from service and it is not being repaired, it is closed. (1)(2)(18)(23)
...	...
4-190. Surface impoundments may not be restored to service unless specific standards are met (40 CFR 264.227(d)).	Verify that prior to being returned to service the following is done: (1)(2)(18)(23) - the portion of the impoundment that was failing is repaired - the dike is recertified if the reason for removal from service was faulty dike integrity - liners are correctly installed and operating.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-191. Installations that have surface impoundments must follow certain closure and post-closure requirements (40 CFR 264.228(a) and 264.228 (b)).	Determine if the installation has closed or plans to close any surface impoundment activities. (1)(2)(18)(23)
	
	Verify that at closure, the installation does one of the following: (1)(2)(18)(23)
	
	- removes or decontaminates all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate and manages them as hazardous waste
	- eliminates the free liquids by removing liquid wastes or solidifying the remaining wastes and water residue; stabilizes remaining wastes to a bearing capacity sufficient to support final cover; and cover the surface impoundment with a final cover designed and constructed to:
	  - provide long-term minimization of the migration of liquids through the closed impoundment
	  - function with minimum maintenance
	  - promote drainage and minimized erosion or abrasion of the final cover
	  - accommodate settling and subsidence so that the cover's integrity is maintained
	  - have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.
	
	Verify that if waste residues or contaminated materials are left in place, the installation meets post-closure requirements outlined in 264.117 through 264.120 and: (1)(2)(18)(23)
	
	- maintains the integrity and effectiveness of the final cover
	- maintains and monitors the leak detection system
	- maintains and monitors the groundwater monitoring system
	- prevents run-on and runoff from eroding or otherwise damaging the final cover.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
INTERIM STATUS SURFACE IMPOUNDMENTS **4-192.** New surface impoundments that started construction after 29 January 1992, lateral expansions of surface impoundments which started construction after 29 July 1992, and replacements of existing surface impoundments where reuse started after 29 July 1992 are required to meet specific design and operating criteria (40 CFR 265.19, 265.221(a) through 265.221(e), 265.221(h), 265.222, and 265.223).	Verify that the listed surface impoundments have two liners and a leachate collection and removal system between the liners unless a waiver has been granted by the Regional Administrator. (1)(2)(18)(23) Verify that the installation has a CQA program to ensure that constructed units meet or exceed all design criteria and specifications in the permit. (1)(2)(18)(23) Verify that the designated CQA officer is a registered professional engineer. (1)(2)(18)(23) Verify that the installation has a written CQA plan that addresses the following: (1)(2)(18)(23) - identification of applicable units and a description of how they will be constructed - identification of key personnel - a description of sampling and inspection activities Verify that waste is not received in a unit until an approved CQA plan has been submitted to the Regional Administrator. (1)(2)(18)(23) Verify that the Regional Administrator is notified 60 days prior to the receipt of wastes. (1)(2)(18)(23) Verify that installation submitting notice files a Part B application within 6 mo of the receipt of notice. (1)(2)(18)(23) Verify that the installation is complying with the action leakage rate established by the Regional Administrator and if the rate is exceeded by flow into any sump: (1)(2)(18)(23) - the Regional Administrator is notified within 7 days - a written notification is submitted within 14 days - the location, size and cause of any leak is determined to the extent practicable - a determination is made as to whether waste receipt should be stopped or restricted

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-192. (continued)	- the Regional Administrator is notified of actions taken and actions to be taken within 30 days after discovery of a leak - a monthly report is submitted to the Regional Administrator as long as the flow rate in the leak detection system exceeds the action leakage rate. Verify that the installation has an approved response action plan. (1)(2)(18)(23) (NOTE: As of 18 February 1993, surface impoundments that are newly subject to hazardous waste requirements because of new additions or characteristics for the identification of hazardous waste are required to meet the standards outlined above concerning having two or more liners and a leachate collection system.)
...	...

4-193. Interim status surface impoundments are required to meet specific operating and containment standards (40 CFR 265.221(f), 265.221(g), 265.223, 265.225, and 265.226).	Verify that there is enough freeboard to prevent any overtopping of the dike by overfilling, wave actions, or a storm. (1)(2)(18)(23)
	
	Verify that there is a freeboard of 60 cm unless written certification states that a lesser freeboard is acceptable. (1)(2)(18)(23)
	
	Verify that all earthen dikes have a protective cover such as grass, shale, or rock to minimize wind and water erosion and preserve integrity. (1)(2)(18)(23)
	
	Verify that the freeboard is inspected at least once each day. (1)(2)(18)(23)
	
	Verify that the surface impoundment is inspected at least once a week for signs of deterioration, leaks, or failure. (1)(2)(18)(23)
	
	Verify that the amount of liquids removed from each leak detection system sump is recorded at least: (1)(2)(18)(23)
	
	- once a week during the active life and closure period
	- monthly after the final cover is installed or:
	  - if the liquid level in the sump stays below the pump operating level for 2 consecutive months the liquid amounts may be recorded quarterly
	  - if the liquid level in the sump stays below the pump operating level for 2 consecutive quarters the liquid amounts may be recorded semi-annually.

...	...
4-194. In specific circumstances additional waste analyses must be done (40 CFR 265.225).	Verify that additional waste analyses are done whenever: (1)(2)(18)(23) - the surface impoundment is used to treat a substantially different hazardous waste from what was previously treated - a substantially different process is used to treat the waste.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-195. Specific procedures must be followed during the closure and post-closure periods for an interim status surface impoundment (40 CFR 265.228).	Verify that at closure all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate are removed or decontaminated. (1)(2)(18)(23) Verify that post-closure care includes care equivalent to that for interim status landfills and 40 CFR 265.310, including: (1)(2)(18)(23) - elimination of free liquids - stabilization of wastes to a bearing capacity sufficient to support the final cover - covering of surface impoundment - maintenance and monitoring of leak detection system. Verify that if wastes, waste residues, or contaminated materials remain after closure: (1)(2)(18)(23) - the integrity of the final cover is maintained - a groundwater monitoring system is maintained that meets the requirements of 40 CFR 265.90 through 265.94 - run-on and runoff are prevented from damaging or eroding the final cover.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

ALL WASTE PILES
 	
4-196. All waste piles containing ignitable or incompatible wastes must follow certain requirements (40 CFR 264.256 and 264.257).
	Verify that ignitable wastes are not placed into piles unless the following are met: (1)(2)(18)(23)
	
	- the waste is treated or rendered, or mixed before or immediately after placement in the pile so that:
	  - the waste or mixture no longer meets the definition of ignitable reactive waste
	  - there is no generation of extreme heat or pressure, fire or explosions, or violent reactions
	  - there is no production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment
	  - there is no production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion
	  - there is no damage to structural integrity of the device or facility
	  - there is no threat to human health or the environment through other means
	- the waste is managed in such a way that it is protected from any material or conditions that may cause it to ignite or react.
	
	Verify that incompatible wastes are not placed in the same pile and hazardous waste is not piled on the same base where incompatible wastes or materials were previously piled unless the base has been decontaminated, and the following are avoided: (1)(2)(18)(23)
	
	- generation of extreme heat or pressure, fire or explosions, or violent reactions
	- production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment
	- production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion
	- damage to structural integrity of the device or facility
	- threats to human health or the environment through other means.
	
	Verify that piles of hazardous waste that are incompatible with any waste or other material stored nearby in other 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. (1)(2)(18)(23)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PERMITTED WASTE PILES **4-197.** Permitted TSDFs that store or treat hazardous waste in waste piles must meet specific design and operating standards (40 CFR 264.250, 264.251(a), 264.251(b), and 264.251 (g) through 264.251(k)). ...	(NOTE: Waste piles closed with wastes left in place are regulated as landfills. Waste piles inside or under a protective structure are exempt from the standards in 40 CFR 264.250 through 264.259 if they contain no liquids, are protected from run-on, are designed and operated to control dispersal of waste by wind, and do not generate leachate through decomposition or other reactions.) Determine if the installation treats or stores hazardous waste in waste piles. (1)(2)(18)(23) Verify that the following standards are met for each waste pile: (1)(2)(18)(23) - the pile has a liner and is located on a foundation that provides support - the liner is installed to cover all surrounding earth likely to be in contact with the waste or leachate - a leachate collection and removal system is located immediately above the liner - leachate depth over the liner does not exceed 1 foot - protection from wind and run-on is provided - a runoff management system is in place and in operating condition - tanks and basins associated with the run-on and runoff control systems are emptied. (NOTE: The permit will designate all design and operating practices necessary to ensure that the requirements are satisfied.) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-198. Permitted waste piles constructed after 29 January 1992, lateral expansions that started after 29 July 1992, and replacement of existing waste piles where reuse started after 29 July 1992 are required to meet specific design and operating requirements (40 CFR 264.19, 264.251(c) through 264.251(f), 264.252, and 264.253).	Verify that the described waste piles have two or more liners and a leachate collection and removal system above and between the liners. (1)(2)(18)(23) Verify that the liner is designed and constructed of materials to prevent the migration of hazardous constituents into the liner during the active life and post-closure care period. (1)(2)(18)(23) (NOTE: See 40 CFR 264.251(c)(1) and 264.251(c)(2) for details on the design of the liner and the leachate collection system.) Verify that the installation has a CQA program to ensure that constructed units meet or exceed all design criteria and specifications in the permit. (1)(2)(18)(23) Verify that the designated CQA officer is a registered professional engineer. (1)(2)(18)(23) Verify that the installation has a written CQA plan that addresses the following: (1)(2)(18)(23) - identification of applicable units and a description of how they will be constructed - identification of key personnel - a description of sampling and inspection activities. Verify that waste is not received in a unit until an approved CQA plan has been submitted to the Regional Administrator. (1)(2)(18)(23) Verify that the pumpable liquids in the leak detection sumps are removed to minimize the head on the bottom liner. (1)(2)(18)(23) Verify that the facility is complying with the action leakage rate assigned by the Regional Administrator. (1)(2)(18)(23) Verify that the installation has an approved response action plan prior to the receipt of waste. (1)(2)(18)(23) (NOTE: The Regional Administrator may approve alternative designs or grant a waiver.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-199. Installations must conduct inspections of permitted waste piles during construction and while they are in operation (40 CFR 264.254).	Verify that if construction of a waste pile is occurring at the installation the following inspections are taking place: (1)(2)(18)(23) - liners and cover systems are inspected for uniformity, damage, and imperfection - synthetic liners and covers are inspected for tight seams and joints immediately after construction - soil based and admixed liners and covers are inspected for imperfections Verify that the waste pile is inspected at least weekly and after storms to detect evidence of the following: (1)(2)(18)(23) - deterioration, malfunctions, or improper operation in run-on and runoff systems - proper functioning of wind dispersal control system - presence of leachate in, and proper functioning of leachate control system. Verify that the amount of liquids removed from each leak detection system is record at least once a week during the active life and closure period. (1)(2)(18)(23)
...	...
4-200. Installations that treat FO20, FO21, FO22, FO23, FO26, and/or FO27 in permitted waste piles are required to follow specific operating procedures (40 CFR 264.259).	Determine if the installation treats F020-F023, F026, or F027. (1)(2)(18)(23) Verify that these wastes are kept in enclosed piles unless the owner/operator has a management plan approved by the Regional Administrator. (1)(2)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-201. Installations that operate permitted waste piles must follow specific requirements for closure and post-closure care (40 CFR 264.258).	Verify that at the time of closure all waste residues, contaminated containment system components, subsoils, and structures and equipment contaminated with hazardous waste have been removed or decontaminated. (1)(2)(18)(23) Verify that if all contaminated subsoils cannot be removed or decontaminated practicably, the facility is closed and managed according to closure and post-closure care requirements for a landfill. (1)(2)(18)(23) Verify that if the installation has a waste pile that does not comply with the liner requirement and is not exempted from this requirement, they comply with the following: (1)(2)(18)(23) - the written closure plan (40 CFR 264.112) addresses the removal of all contaminated substances and a contingency plan if all contamination cannot be removed from the pile - a contingency post-closure plan is prepared for the waste pile and be submitted to the appropriate agency within 90 days after determining the waste pile must be closed.
...	...
INTERIM STATUS WASTE PILES	

4-202. Interim status waste piles are required to meet specific standards for wind protection, waste analysis, and containment (40 CFR 265.250, 265.251, and 265.253).	Determine if the installation operates an interim status waste pile. (1)(2)(18)(23)
	
	Verify that interim status waste piles are covered or otherwise managed to prevent dispersal of the pile contents by the wind. (1)(2)(18)(23)
	
	Verify that if the leachate or runoff from a pile is a hazardous waste, one of the following is done: (1)(2)(18)(23)
	
	- Option one:
	  - place the pile on an impermeable base that is compatible with the waste
	  - design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-yr storm
	  - design, construct, operate, and maintain a runoff management system to collect and control at least the water volume resulting from a 24-h, 25-yr storm
	  - empty and manage collection and holding facilities for the run-on and runoff systems
	- Option two:
	  - protect the pile from precipitation and run-on
	  - no liquids or wastes containing liquids are placed in the pile.

...	...

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-203. New interim status piles which start construction after 29 January 1992, lateral expansions of a waste pile unit which started after 29 July 1992, and each such replacement of an existing waste pile unit for which reuse started after 29 July 1992 must meet specific design and operating standards (40 CFR 265.19, 265.254, 265.255, 265.259, and 265.260).	Determine if the installation operates an interim status waste piles meeting the listed description. (1)(2)(18)(23) Verify that the waste pile has two or more liners and a leachate collection and removal system. (1)(2)(18)(23) Verify that the installation has a CQA program to ensure that constructed units meet or exceed all design criteria and specifications in the permit. (1)(2)(18)(23) Verify that the designated CQA officer is a registered professional engineer. (1)(2)(18)(23) Verify that the installation has a written CQA plan that addresses the following: (1)(2)(18)(23) - identification of applicable units and a description of how they will be constructed - identification of key personnel - a description of sampling and inspection activities Verify that waste is not received in a unit until an approved CQA plan has been submitted to the Regional Administrator. (1)(2)(18)(23) Verify that waste piles subject to these requirements meet the action leakage rate set by the Regional Administrator. (1)(2)(18)(23) Verify that the installation has an approved response action plan before the receipt of waste. (1)(2)(18)(23) Verify that if the flow rate into the leak detection system exceeds the action leakage rate for any sump: (1)(2)(18)(23) - the Regional Administrator is notified within 7 days - a written notification is submitted within 14 days - the location, size and cause of any leak is determined to the extent practicable - a determination is made as to whether waste receipt should be stopped or restricted - the Regional Administrator is notified of actions taken and actions to be taken within 30 days after discovery of a leak - a monthly report is submitted to the Regional Administrator as long as the flow rate in the leak detection system exceeds the action leakage rate. Verify that the amount of liquids removed from each leak detection sump is recorded at least once a week during the active life and closure period. (1)(2)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-204. Except in specific instances, installations are required to analyze a representative sample from each incoming waste before adding the waste to an existing pile (40 CFR 265.252).	Verify that an analysis is performed unless one of the following occurs: (1)(2)(18)(23) - the only wastes that the installation receives for piling are compatible - the waste received is compatible with the pile in which it is to be placed.
...	...
4-205. Interim status waste piles must meet specific closure and post-closure requirements (40 CFR 265.258).	Verify that at closure all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate are removed or decontaminated. (1)(2)(18)(23) Verify that if all residues cannot be removed, the waste pile is closed and post-closure care is carried out as for a landfill. (1)(2)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

ALL LAND TREATMENT UNITS
 	
4-206. All land treatment facilities must follow specific guidelines for ignitable or reactive wastes and incompatible wastes (40 CFR 264.281, 264.282, 265.281, and 265.282).
	Determine if the facility handles any ignitable or incompatible waste. (1)(2)(18)(23)
	
	Verify that ignitable or reactive waste are not land treated unless: (1)(2)(18)(23)
	
	- the waste is immediately incorporated into the soil so that the resulting mixture no longer meets the definition of ignitable or reactive waste
	- the following are prevented:
	  - generation of extreme heat or pressure, fire or explosions, or violent reactions
	  - production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment
	  - production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion
	  - damage to structural integrity of the device or facility
	  - *threats to human health or the environment through other* means.
	- the waste is managed in such a way that it is protected from any materials that may cause it to react.
	
	Verify that incompatible wastes are not applied to land treatment facilities unless the following are prevented: (1)(2)(18)(23)
	
	- generation of extreme heat or pressure, fire or explosions, or violent reactions
	- production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment
	- production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion
	- damage to structural integrity of the device or facility
	- threats to human health or the environment through other means.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PERMITTED LAND TREATMENT UNITS	
4-207. Installations with permitted hazardous waste land treatment units must meet certain standards (40 CFR 264.270 through 264.273(f)).	Determine if the facility operates a land treatment facility. (1)(2)(18)(23) Verify that the following standards are met at each permitted hazardous waste land treatment unit: (1)(2)(18)(23) - the treatment zone is no more than 5 ft from the initial soil surface - the treatment zone is more than 3 ft above the seasonal high water table - only wastes with hazardous constituents that can be degraded, transformed, or immobilized are placed in the treatment zone - run-on control systems are operated to prevent flow onto the treatment zone during peak discharge from at least a 25-yr storm - tanks and basins associated with the run-on and runoff control systems are emptied or otherwise managed after storms - wind dispersal is controlled. (NOTE: The Regional Administrator will specify in a permit the exact elements of the treatment program.)
...	...
4-208. Installations must conduct inspections while land treatment facilities are in operation (40 CFR 264.273(g)).	Verify that the land treatment system is inspected weekly and after storms to detect evidence of: (1)(2)(18)(23) - deterioration, malfunctions, or improper operation of run-on and runoff control systems - improper functioning of wind dispersal control measures.
...	...

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-209. Installations with food-chain crops grown in or on the treatment zone are required to meet specific operational standards (40 CFR 264.276).	Determine if food-chain crops are grown in or on the treatment zone. (1)(2)(18)(23) Verify that if food chain crops are grown, only those specified in the permit by the Regional Administrator are being grown. (1)(2)(18)(23) Verify that if cadmium containing wastes are applied to food-chain crops in or on treatment zones the following are met: (1)(2)(18)(23) - the pH of the waste and soil mixture is 6.5 or greater at the time of application except in cases where the waste contains cadmium at concentrations of 2 mg/kg or less - the annual application of cadmium from waste does not exceed 0.5 kg/hectare (ha) on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption. For other food chain crops the annual cadmium does not exceed 0.5 kg/ha - the cumulative application of cadmium from waste does not exceed 5 kg/ha if the waste and soil mixture has a pH less than 6.5 - if the waste and soil mixture has a pH of 6.5 or greater or is maintained at a pH of 6.5 or greater during crop growth, the cumulative application of cadmium from waste does not exceed 5 kg/ha if soil cation exchange capacity if less than 5 milligram equivalent (meq)/100 g; 10 kg/ha if soil cation exchange capacity is 5 to 15 meq/100 g; and 20 kg/ha if soil cation exchange capacity is greater than 15 meq/100 g; or animal feed is the only food chain crop produced.
...	...
4-210. Permitted land treatment units must have an unsaturated zone monitoring program (40 CFR 264.278).	Verify that the unsaturated zone monitoring program meets the following: (1)(2)(18)(23) - the soil and soil-pore liquid are monitored to determine if hazardous constituents migrate out of the treatment zone - a system is installed that includes soil monitoring using soil cores and soil-pore liquid monitoring using devices such as lysimeters - a background value has been established for each hazardous constituent to be monitored (see permit) - the soil monitoring and soil-pore liquid monitoring is done immediately below the treatment zone - consistent sampling and monitoring procedures are used. Verify that the constituents listed in the permit are being monitored. (1)(2)(18)(23) Verify that when it is found that there is a statistically significant increase of hazardous constituents below the treatment zone the following steps are taken: (1)(2)(18)(23) - the Regional Administrator is notified within 7 days in writing - within 90 days a permit application is submitted to the Regional Administrator for a permit modification to modify the operating practices.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-211. Land treatment facilities must keep an operating record that includes dates and rates of application (40 CFR 265.279).	Verify that the operating record contains the dates and rates of applications. (1)(2)(18)(23)
...	...
4-212. All land treatment facilities are required meet specific closure and post-closure plans (40 CFR 264.280).	Verify that during the closure period the following requirements are met: (1)(2)(18)(23) - all operations are continued as necessary to maximize degradation, transformation, or immobilization of hazardous constituents in the treatment zone - runoff is minimized - run-on and runoff management systems are maintained - wind dispersal of hazardous waste is controlled - compliance with food chain crop prohibitions is continued - unsaturated zone monitoring is continued except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone - a vegetative cover is established on the portion of the facility being closed when the cover will not substantially impede degradation, transformation, or immobilization of hazardous constituents. Verify that when closure is completed, certification by an independent, qualified, soil scientist or independent registered professional engineer was submitted to the Regional Administrator that the facility has been closed according to the specifications of an approved closure plan. (1)(2)(18)(23) Verify that during the post-closure: (1)(2)(18)(23) - operations are continued to enhance degradation, transformation, and sustain immobilization of hazardous constituents in the treatment zone - a vegetative cover is maintained - run-on control systems are maintained - runoff management systems are maintained - wind dispersal of hazardous waste is controlled - food-chain crop prohibitions are met - unsaturated zone monitoring is continued except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone. *(NOTE: The facility may not be required to establish a vegetative cover or meet post-closure requirements if the Regional Administrator finds that the level of hazardous waste constituents in the treatment soil zone does not exceed the background value of those constituents by an amount that is statistically significant.)*
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-213. Hazardous wastes FO20 through FO23, FO26, and FO27 must not be placed in a land treatment facility unless it is done according to an approved management plan for these wastes (40 CFR 264.283).	Verify that these wastes are only placed in a land treatment unit according to the requirements of the approved waste management plan. (1)(2)(18)(23)
...	...
INTERIM STATUS LAND TREATMENT UNITS	
4-214. Interim status land treatment units are required to be operated according to specific standards (40 CFR 265.270, 265.272, 265.273, and 265.279)	Determine if the installation operates an interim status land treatment unit. (1)(2)(18)(23) Verify that the following standards are met at the land treatment unit: (1)(2)(18)(23) - hazardous wastes are not place in or on a land treatment facility unless it can be made less hazardous or nonhazardous by degradation, transformation, or immobilization processes occurring in or on the soil - run-on control systems are operated to prevent flow onto the treatment zone during peak discharge from at least a 25-yr storm - runoff management systems are capable of controlling and collecting a water volume at least equivalent to a 24-h 25-yr storm - tanks and basins associated with the run-on and runoff control systems are emptied or otherwise managed after storms - wind dispersal is controlled. Verify that in addition to required waste analysis, prior to placing a hazardous waste in or on a land treatment facility the owner or operator: (1)(2)(18)(23) - determines the concentrations in the waste of any substance which equaled or exceeded the maximum concentrations contained in Table 1 of 40 CFR 264.21 - determine the concentration of any substance which caused the waste to be listed as hazardous - determines the concentrations of arsenic, cadmium, lead, and mercury if food-chain crops are grown unless there is documentation present to prove that none of these constituents exist. Verify that hazardous waste application dates and rates are included in the operating record. (1)(2)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-215. Installations are required to operate interim status land treatment facilities where food-chain crops are grown according to specific standards (40 CFR 265.276).	Determine if the installation grows food-chain crops on their land treatment facilities. (1)(2)(18)(23) Verify that the installation notified the Regional Administrator that food-chain crops were being grown. (1)(2)(18)(23) Verify that food-chain crops are not grown on the installation unless there is proof that the crop will not be contaminated by arsenic, lead, mercury, or other harmful constituents. (1)(2)(18)(23) Verify that if the installation accepts waste that is contaminated with cadmium, the handling practices outlined in 40 CFR 265.276(c) are followed. (1)(2)(18)(23)
...	...
4-216. Installations with interim status land treatment facilities are required to have an unsaturated zone monitoring plan (40 CFR 265.278).	Verify that the installation has an unsaturated zone monitoring plan that includes: (1)(2)(18)(23) - soil monitoring using soil cores - soil-pore water monitoring using devices such as lysimeters - depth and number of samples to be taken. Verify that the installation is following the plan. (1)(2)(18)(23)
...	...
4-217. Installations with interim status land treatment facilities are required to meet specific requirements concerning closure and post-closure (40 CFR 265.280).	Verify that in the closure plan, the installation has addressed the following issues for interim status land treatment facilities: (1)(2)(18)(23) - control of migration of wastes - control of the release of contaminated runoff into surface water - control of the release of airborne particulates - compliance with food-chain crop restrictions. Verify that during closure: (1)(2)(18)(23) - unsaturated zone monitoring is continued - the run-on control system is maintained - the runoff management system is maintained - there is continued control of wind dispersal of particulate matter. Verify that when closure was completed, the installation notified the Regional Administrator. (1)(2)(18)(23) Verify that during post-closure the following is done: (1)(2)(18)(23) - soil-core monitoring is continued as specified in the post-closure plan - access to the unit is restricted as appropriate - growth of food-chain crops complies with restrictions - wind dispersal of hazardous wastes is controlled.
...	...

(1) *Directorate of Engineering and Housing* (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL HAZARDOUS WASTE LANDFILLS	
4-218. All hazardous waste landfills are required to have a run-on control system, a runoff management system and control the wind dispersal of particulate matter (40 CFR 264.301(g) through 264.301(k) and 265.301(f) through 265.301(i)).	Verify that: (1)(2)(18)(23) - the run-on control system has the capacity to prevent flow onto the active portion of the landfill during peak discharge of 25-yr storm - the runoff management system has adequate capacity to collect and control water from a 24-h, 25-yr storm - collection and holding tanks or basins for run-on and runoff control systems are emptied expeditiously after storms - there is adequate control of wind dispersal: no blowing debris - there is adequate cover of waste material. (NOTE: For permitted facilities, the permit will specify all design and operating practices necessary to ensure compliance.)
...	...
4-219. Installations must maintain a landfill map in their operating records depicting the waste cells and the type and location of hazardous waste in each cell (40 CFR 264.309 and 265.309).	Verify that a landfill map is available and it contains: (1)(2)(18)(23) - the exact location and dimensions of each cell, including depth, with respect to a permanently secured benchmark - contents of each cell and approximate location of each waste type within each cell.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-220. Installations that dispose of hazardous wastes in onsite landfills must must meet specific requirements for closure and post-closure (40 CFR 264.310 and 265.310).	Verify that at final closure of the landfill or of any cell the landfill or cell is covered with a final cover which meets the following criteria: (1)(2)(18)(23) - it provides long-term minimization of migration of liquids - it functions with minimum maintenance - it promotes drainage and minimizes erosion or abrasion - it accommodates settling and subsidence so that cover integrity is maintained - it has a permeability less than or equal to the permeability of any bottom liner system or natural sub-soils present. Verify that the post-closure requirements outlined in 40 CFR 264.117 through 264.120 and 265.117 through 264.120 are met and the installation: (1)(2)(18)(23) - maintains the integrity and effectiveness of the final cover - continues to operate the leachate collection and removal system until leachate is no longer detected - prevents run-on and runoff from eroding or otherwise damaging the final cover - maintains and monitors the leak detection system - protects and maintains surveyed benchmarks used in developing the survey map.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-221. No ignitable, reactive, or incompatible wastes, may be placed in a hazardous waste landfill unless certain criteria are met (40 CFR 264.312, 264.313, 265.312, and 265.313).	Verify that, except in the case lab packs, ignitable or reactive wastes are not placed in landfills unless: (1)(2)(18)(23)
	- the waste and landfill meets all applicable requirements of 40 CFR 268 concerning land disposal of restricted wastes
	- the waste treated, rendered, or mixed before being landfilled so that it is no longer ignitable or reactive
	- the following is prevented:
	  - generation of extreme heat or pressure, fire or explosions, or violent reactions
	  - production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment
	  - production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion
	  - damage to structural integrity of the device or facility
	  - threats to human health or the environment through other means.
	
	Verify that if ignitable wastes are landfilled without treatment: (1)(2)(18)(23)
	- the waste is disposed of in nonleaking containers that are carefully handled and placed to avoid heat, sparks, rupture, etc.
	- the containers are covered daily with soil or other noncombustible materials
	- the containers are disposed of in cells that do not contain or will not contain other wastes that generate heat sufficient to cause waste ignition.
	
	Verify that no incompatible wastes or incompatible wastes and materials are placed in the landfill unless the following are prevented: (1)(2)(18)(23)
	- generation of extreme heat or pressure, fire or explosions, or violent reactions
	- production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment
	- production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion
	- damage to structural integrity of the device or facility
	- threats to human health or the environment through other means.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-222. Placement of bulk or noncontainerized liquid hazardous waste, waste containing free liquids, or any liquid in a hazardous waste landfill is restricted (40 CFR 264.314 and 265.314).	Verify through observation and interviews that effective 8 May 1985, no bulk or noncontainerized liquid hazardous waste or hazardous waste containing free liquids, whether or not sorbants have been added, is placed in the landfill. (1)(2)(18)(23) (NOTE: Bulk or containerized liquid waste or waste containing free liquids may have been placed in a landfill prior to May 1985 only if one of the following is met: - the landfill has a liner and leachate collection system as described in 40 CFR 264.30(a) - before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically so that free liquids are no longer present.) Verify that the installation has assessed the presence or absence of free liquids using method 9095 as described in USEPA publication number SW-846, *Test Methods for Evaluating Solid Waste Physical/Chemical Methods*. (1)(2)(18)(23) Verify that sorbants used to treat free liquids to be disposed of in landfills are nonbiodegradable. (1)(2)(18)(23) Verify that after 8 November 1985, any liquid that is not a hazardous waste is not placed in the landfill, unless USEPA finds that no reasonable alternative is available. (1)(2)(18)(23) Verify through observations and interviews that no containers holding free liquid are placed in landfill unless one of the following applies: (1)(2)(18)(23) - free standing liquid is removed, absorbed, or solidified - the container is very small, such as an ampule - the container is a battery capacitor or other device designed to hold liquid for other than storage - the container is a lab pack.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-223. Containers and lab packs disposed of in any hazardous waste landfill must meet special requirements (40 CFR 264.315, 264.316, 265.315, and 265.316).	Verify through observation and interviews that unless they are very small, such as an ampule, containers placed in the landfill are at least 90 percent full or crushed, shredded, or similarly reduced in volume before burial. (1)(2)(18)(23) Verify that no lab packs (small containers of waste in overpacked drum) are place in landfills unless: (1)(2)(18)(23) - the hazardous waste is packed in nonleaking inside containers - the inside containers will not react dangerously with, be decomposed by, or ignited by the contained waste - inside containers are tightly and securely sealed - inside containers are of the size and types specified in DOT regulations (49 CFR 173, 178, and 179) if those regulations specify a particular container - inside containers are overpacked in an open-head DOT metal shipping container of no more than 417 L (110 gal) capacity surrounded by enough nonbiodegradable sorbant material to absorb all of the liquid contents of the inside containers - the outer metal container is full after being packed with inside container and sorbant material - incompatible wastes are not placed in the same outside container - reactive wastes other than cyanide or sulfide bearing wastes are treated and rendered nonreactive before packaging. Verify that disposal is done in accordance with 40 CFR 268. (1)(2)(18)(23)
...	...
PERMITTED HAZARDOUS WASTE LANDFILLS	
4-224. Permitted hazardous waste landfills are required to have a liner and a leachate collection and removal system (40 CFR 264.301(a) through 264.301(b)).	Determine if the installation disposes of hazardous wastes in an onsite landfill. (1)(2)(18)(23) Verify that the landfill liner: (1)(2)(18)(23) - is designed, constructed, and installed to prevent any migration of waste out of the landfill - is placed on a properly supported base or foundation - is installed to cover all surrounding earth likely to be in contact with the waste. Verify that the leachate collection and removal system is immediately above the liner and will operate to remove leachate from the landfill. (1)(2)(18)(23) (NOTE: The permit will contain specific design and operating conditions.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-225. New landfills on which construction started after 29 January 1992, lateral expansions which started construction after 29 July 1992 and each replacement of an existing landfill that will start reuse after 29 July 1992 are required meet specific design and operating standards (40 CFR 264.19, 264.301(c) through 264.301(f), 264.302, and 264.304).	Determine if the installation has any landfills meeting the stated criteria. (1)(2)(18)(23) Verify that the landfill has two or more liners and a leachate collection and removal system above and between the liners or a waiver of double liner requirement has been obtained from the USEPA Regional Administrator. (1)(2)(18)(23) Verify that the installation has a CQA program to ensure that constructed units meet or exceed all design criteria and specifications in the permit. (1)(2)(18)(23) Verify that the designated CQA officer is a registered professional engineer. (1)(2)(18)(23) Verify that the installation has a written CQA plan that addresses the following: (1)(2)(18)(23) - identification of applicable units and a description of how they will be constructed - identification of key personnel - a description of sampling and inspection activities Verify that waste is not received in a unit until an approved CQA plan has been submitted to the Regional Administrator. (1)(2)(18)(23) Verify that the pumpable liquids in the leak detection system sumps are collected and removed to minimize the head on the bottom liner. (1)(2)(18)(23) Verify that surface impoundments subject to these requirements meet the action leakage rate set by the Regional Administrator. (1)(2)(18)(23) Verify that the installation has an approved response action plan before the receipt of waste. (1)(2)(18)(23)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-225. (continued)	Verify that if the flow rate into the leak detection system exceeds the action leakage rate for any sump that: (1)(2)(18)(23) - the Regional Administrator is notified within 7 days - a written notification is submitted within 14 days - to the extent practicable, the location, size and cause of any leak is determined - a determination is made as to whether waste receipt should be stopped or restricted - within 30 days after discovery the Regional Administrator is notified of actions taken and actions to be taken - as long as the flow rate in the leak detection systems exceeds the action leakage rate a monthly report is submitted to the Regional Administrator. (NOTE: These restrictions do not apply if the existing unit was constructed in accordance with the design standards of Section 3004(o)(1)(A)(i) and (o)(5) of RCRA and there is no reason to believe that the liner is not functioning as designed.)
...	...
4-226. Hazardous waste landfills must be inspected (40 CFR 264.303).	Verify that liners were inspected during construction for overall integrity. (1)(2)(18)(23) Verify that immediately after construction was completed, the following inspections were performed: (1)(2)(18)(23) - synthetic liners and covers to ensure tight seams and joints and absence of tears - soil-based and admixed liners for imperfections that may increase impermeability (i.e., cracks and root-holes).

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-226. (continued)	Verify that while a landfill is in operation it is inspected weekly and after storms to detect evidence of the following: (1)(2)(18)(23) - deterioration, malfunctions, or improper operations of run-on and runoff control systems - proper functioning of wind dispersal control systems where present - the presence of leachate in and proper functioning of the leachate collection system. Verify that the amounts of liquids removed from each leak detection sump are recorded at least once a week during the active life of and closure period. (1)(2)(18)(23) Verify that after a final cover is installed, the amount of liquids removed from each leak detection system sump is recorded at least monthly or: (1)(2)(18)(23) - if the liquid level in the sump stays below the pump operating level for 2 consecutive months than the liquid amounts may be recorded quarterly - if the liquid level in the sump stays below the pump operating level for two consecutive quarters than the liquid amounts may be recorded semi-annually.
...	...
4-227. Installations with permitted hazardous waste landfills are required to meet specific standards for hazardous wastes F020, F021, F022, F023, F026, and F027 (40 CFR 264.317).	Determine whether or not these wastes are landfilled at the installation. (1)(2)(18)(23) Verify that if they are landfilled, the installation has a management plan for their disposal that is approved by the Regional Administrator. (1)(2)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
INTERIM STATUS HAZARDOUS WASTE LANDFILLS **4-228.** New interim status landfill units which started construction after 29 January 1992, each lateral expansion of a landfill unit that started construction after 29 July 1992 and each replacement of an existing landfill that will begin reuse after 29 July 1992 is required to meet specific design and operating standards (40 CFR 265.19, 265.301(a) through 265.301(e) and 265.302 through 265.304).	Determine if the installation has any interim status landfills meeting the stated criteria. (1)(2)(18)(23) Verify that the landfill has two or more liners and a leachate collection system above and between the liners or a waiver of double liner requirement has been obtained from the USEPA Regional Administrator. (1)(2)(18)(23) Verify that the installation has a CQA program to ensure that constructed units meet or exceed all design criteria and specifications in the permit. (1)(2)(18)(23) Verify that the designated CQA officer is a registered professional engineer. (1)(2)(18)(23) Verify that the installation has a written CQA plan that addresses the following: (1)(2)(18)(23) - identification of applicable units and a description of how they will be constructed - identification of key personnel - a description of sampling and inspection activities Verify that waste is not received in a unit until an approved CQA plan has been submitted to the Regional Administrator. (1)(2)(18)(23) Verify that the installation notifies the Regional Administrator at least 60 days prior to receiving waste and files a Part B application within 6 mo of the receipt of notice. (1)(2)(18)(23) Verify that landfills subject to these requirements meet the action leakage rate set by the Regional Administrator. (1)(2)(18)(23) Verify that the installation has an approved response action plan before the receipt of waste. (1)(2)(18)(23)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-228. (continued)	Verify that if the flow rate into the leak detection system exceeds the action leakage rate for any sump that: (1)(2)(18)(23) - the Regional Administrator is notified within 7 days - a written notification is submitted within 14 days - to the extent practicable, the location, size and cause of any leak is determined - a determination is made as to whether waste receipt should be stopped or restricted - within 30 days after discovery the Regional Administrator is notified of actions taken and actions to be taken - as long as the flow rate in the leak detection systems exceeds the action leakage rate a monthly report is submitted to the Regional Administrator. Verify that after a final cover is installed, the amount of liquids removed from each leak detection system sump is recorded at least monthly or: (1)(2)(18)(23) - if the liquid level in the sump stays below the pump operating level for 2 consecutive months than the liquid amounts may be recorded quarterly; - if the liquid level in the sump stays below the pump operating level for two consecutive quarters than the liquid amounts may be recorded semi-annually.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PERMITTED INCINERATORS	
4-229. Installations with permitted hazardous waste incinerators must comply with certain regulations (40 CFR 264.340(a) through 264.340(c), 264.341 through 264.344(a), 264.345, and 264.346).	Determine if the installation incinerates hazardous waste. (1)(2)(18)(23) Determine if specific wastes (Principal Organic Hazardous Constituents (POHC)) are specified in the permit. (1)(2)(18)(23) Verify that only the wastes listed in the permit are burned, and only under the operating conditions set forth in the permit. (1)(2)(18)(23) Verify that sufficient waste analyses are conducted throughout normal operations to verify that waste feed is within the limits specified in the permit. (1)(2)(18)(23) Verify that for each waste specified in the permit, the incinerator achieves a Destruction and Removal Efficiency (DRE) of 99.99 percent. (1)(2)(18)(23) Verify that the DRE for all wastes incinerated is determined by the following equation: (1)(2)(18)(23) (NOTE: DRE = (W [IN] - W [OUT])/w[IN] * 100% where: W[IN] = mass feed rate of one POHC in the waste stream feeding the incinerator and W [OUT] = mass emissions rate of the same POHC present in the exhaust emissions.) Verify that when USEPA hazardous waste No. F020-F023, F026, or F027 are incinerated a DRE of 99.9999 percent is achieved and the Regional Administrator is notified of the intent to burn. (1)(2)(18)(23)
...	...
4-230. Permitted hazardous waste incinerators are required to meet meet specific emission standards (40 CFR 264.343(b) and 264.343(c)).	Determine if the incinerator produces stack emissions of hydrogen chloride (HCL). (1)(2)(18)(23) Verify that if HCL emissions exceed 1.8 kg/h, the emissions are controlled so that no greater than 1.8 kg/h or 1 percent HCL in the stack gas prior to entering any pollution control equipment, whichever is larger, is emitted. (1)(2)(18)(23) Verify that particulate matter no greater than 180 mg per dry standard cubic meter is emitted. (1)(2)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-231. Operators of incinerators must conduct monitoring while incinerating hazardous waste (40 CFR 264.347).	Verify that the operator monitors, at a min. the following at the indicated intervals: (1)(2)(18)(23) - waste feed rate, combustion temperature, combustion gas velocity, CO (prior to release) - continuously - the incinerator and associated equipment for leaks, spills etc. - daily - the emergency waste feed cutoff system and associated emergency cutoff alarms - weekly. Verify that monitoring and inspection data is recorded and the records placed in the operating log. (1)(2)(18)(23)
...	...
4-232. When permitted hazardous waste incinerators are closed all hazardous waste and hazardous waste residues must be removed (40 CFR 264.351).	Verify that all hazardous wastes and hazardous waste residues, including ash, scrubber waters, and scrubber sludges, are removed from the incinerator site. (1)(2)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-233. Installations with interim status that use incinerators for hazardous waste must sufficiently analyze all wastes burned (40 CFR 265.340 and 265.341).	Determine if the installation incinerates hazardous wastes. (1)(2)(18)(23)
	
	Determine if the results of each waste are kept on file in the operating record. (1)(2)(18)(23)
	
	Verify that for each waste not previously burned at the facility, the results of the waste analysis establish: (1)(2)(18)(23)
	
	- steady state (normal) operating conditions including:
	  - waste fuel feed
	  - auxiliary fuel feed
	  - air flow
	- type of pollutants that might be emitted
	- heating value
	- halogen content
	- sulfur content
	- lead concentration level
	- mercury concentration level.
	
	(NOTE: Facilities with interim status may be exempt from all the requirements for hazardous waste incinerators (except closure) under certain conditions:
	- the installation has written documentation that the wastes they incinerate do not contain any hazardous constituents listed in 40 CFR 261, Appendix VIII
	- the documentation is retained at the facility
	- the wastes are listed as hazardous solely because of their ignitable (Hazard Code I) or corrosive (Hazard Code C) properties, or both as listed and determined in 40 CFR 261, part C or D
	- the wastes are listed as reactive (Hazard Code R) for characteristics other than those listed in 40 CFR 261.23(a)(1), (2), (3), (6), (7), or (8) and will not be burned when other hazardous wastes are present in the combustion zone.)

...	...
4-234. Installations with interim status may burn F202 - F023, F026, F027 if they have proper certification (40 CFR 265.352).	Determine if the installation burns USEPA hazardous waste No. F020-F023, F026, or F027. (1)(2)(18)(23) Verify that the installation has received certification from the Assistant Administrator for Solid Waste and Emergency Response if such wastes are burned at the facility. (1)(2)(18)(23)
...	...
4-235. Installations with interim status that incinerate hazardous waste must not feed hazardous waste unless the incinerator is at a steady state (40 CFR 265.345).	Verify that the waste is not fed until steady state conditions are reached by observing the incinerator during startup and shutdown. (1)(2)(18)(23)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-236. An interim status facility that incinerates hazardous waste must conduct monitoring and inspections (40 CFR 265.347).	Verify that the following monitoring and inspection procedures are followed: (1)(2)(18)(23) - existing instruments related to combustion and emission are monitored every 15 min including the instruments that control: - waste feed - auxiliary fuel feed - air flow - incinerator temperature - scrubber flow - scrubber pH - the complete incinerator and associated equipment are monitored at least daily for leaks, spills, and fugitive emissions including: - pumps - valves - conveyors - pipes - emergency shutdown controls - system alarms.
...	...
4-237. At closure of an interim status incinerator all hazardous waste and hazardous waste residues must be removed (40 CFR 265.351).	Verify that when an interim status hazardous waste incinerator is closed, the wastes and residues are removed. (1)(2)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

PERMITTED MISCELLANEOUS UNITS
 	
4-238. Installations that treat, store, or dispose of hazardous wastes in permitted miscellaneous units must comply with specific environmental performance standard requirements (40 CFR 264.601).
 	
...
	Determine whether the installation treats, stores, or disposes of any hazardous waste in miscellaneous units. (1)(2)(18)(23)
	
	Verify that miscellaneous units are located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment including: (1)(2)(18)(23)
	
	- prevention of any release due to migration in the groundwater, surface water, wetlands, soil surface, or air, taking in to consideration:
	  - volume and physical and chemical characteristics of waste including its potential for emission and dispersal of gases, aerosols, and particulates
	  - potential for migration through soil, liners, or other containing structures
	  - the effectiveness of containing, confining, and collection systems and structures in preventing migration and/or reducing or preventing emissions into the air
	  - the hydrological, geological, atmospheric, meteorological, and topographic characteristics of the unit and surrounding area, including the topography of the land around the unit
	  - regional patterns of precipitation
	  - existing quality and quantity of groundwater, surface water, and direction of flow, including other sources of contamination
	  - existing quality of surface soils
	  - existing quality of the air, including other sources of contamination and their cumulative effect on the air
	  - proximity to and withdrawal rates of current and potential groundwater and surface water users
	  - regional pattern of land use
	  - potential for deposition or migration of waste into the root zone
	  - potential health risks caused by human exposure to the waste
	  - potential for damage from exposure to domestic animals, wildlife, crops, vegetation, and physical structures.
	
	Verify that miscellaneous units are designed and operated according to their permit restrictions. (1)(2)(18)(23)
	
	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-239. Installations that treat, store, or dispose of hazardous wastes in permitted miscellaneous units must comply with monitoring, analysis, inspection, responses, reporting, and corrective action regulations (40 CFR 264.602).	Determine if the installation complies with the following regulations: (1)(2)(18)(23) - follow the general inspection requirements of 40 CFR 264.15 - test and maintain equipment in compliance with 40 CFR 264.33 - prepares a biennial report as specified in 40 CFR 264.75 - prepares unmanifested waste reports and additional reports, if applicable, as required in 40 CFR 264.76 and 264.77 - takes corrective action to prevent releases as defined in 40 CFR 264.101.
...	...
4-240. A permitted miscellaneous unit that is a disposal unit must be maintained according to the permit requirements during the post-closure period (40 CFR 264.603).	Determine if the installation has a closed miscellaneous unit. (1)(2)(18)(23) Verify that the post-closure requirements specified in the permit are being carried out. (1)(2)(18)(23)
...	...
INTERIM STATUS THERMAL TREATMENT	

4-241. Installations with interim status thermal treatment facilities must meet specific requirements (40 CFR 265.370, 265.373, 265.375, 265.381, 265.383, and 265.383).	Determine if the installation operates an interim status thermal treatment facility (other than enclosed devices using controlled flam combustion). (1)(2)(18)(23)
	
	Verify that the following requirements are met: (1)(2)(18)(23)
	
	- the thermal treatment process is operating at steady state (normal) conditions, including temperature, before adding hazardous waste (unless the process is a noncontinuous (batch) process that requires a complete thermal cycle to treat the waste
	- waste analysis is performed on waste not previously treated at the facility that includes:
	  - establishing steady state (normal) operating condition
	  - type of pollutants which might be emitted
	  - heating value
	  - halogen and sulfur content
	  - concentrations of lead and mercury.
	
	(NOTE: Open burning of hazardous waste is prohibited except for the open burning and detonation of waste explosives.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-241. (continued)	Verify that if open burning or detonation of waste explosives is conducted, the following standards are met: (1)(2)(18)(23)
	
	- pounds of waste explosives or propellants determines the minimum distance from open burning or detonation to property of others as shown below:
	  - 0-100: 204 m (670 ft)
	  - 101-1000: 380 m (1250 ft)
	  - 1001-10,000: 530 m (1730 ft)
	  - 10,001-30,000: 690 m (2260 ft).
	
	Verify that at closure all wastes and residues are removed. (1)(2)(18)(23)

...	...
4-242. Interim status thermal treatment facilities must be certified, if they treat certain wastes (40 CFR 265.383).	Determine if the installation thermally treats USEPA hazardous waste No. F020-F023, F026, or F027. (1)(2)(18)(23) Verify that the facility has received certification from the Assistant Administrator for Solid Waste and Emergency Response to burn such wastes. (1)(2)(18)(23)
...	...

4-243. Operators of interim status thermal treatment facilities must conduct monitoring and inspections while thermally treating hazardous waste (40 CFR 265.377).	Determine if the operator conducts at a minimum the following monitoring while thermally treating hazardous wastes: (1)(2)(18)(23)
	
	- every 15 min, the following instrumentation for temperature and emission controls are monitored and appropriate corrections are made immediately
	  - waste feed rate
	  - auxiliary fuel rate
	  - treatment process temperature
	  - relevant process flow and level controls
	- every hour, stack emissions are visually checked for normal appearance (color and opacity)
	- every day, the complete thermal treatment process and associated equipment are checked including:
	  - pumps, valves, conveyors, pipes, etc., inspected for leaks, spills, and fugitive emissions
	  - emergency shutdown controls and systems alarms are checked for proper operation.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
INTERIM STATUS CHEMICAL/ PHYSICAL/ BIOLOGICAL TREATMENT	
4-244. Installations with interim status chemical, physical, and biological treatment facilities must meet certain requirements (40 CFR 265.400 through 265.402 and 265.404).	Determine if the installation operates a chemical, physical, or biological treatment facility to treat hazardous wastes. (1)(2)(18)(23) (NOTE: These requirements do not apply to facilities which treat hazardous wastes by chemical, physical, biological methods in other than tanks, surface impoundments, and land treatment units.) Verify that the following criteria are met: (1)(2)(18)(23) - wastes or treatment reagents are not placed in treatment process or equipment if they could cause ruptures, leaks, corrosion or other failures - in addition to the analyses required by 40 CFR 265.13, continuously fed systems are equipped with waste feed cutoff or bypass system - waste analyses and treatment tests (i.e., bench scale or pilot plant tests) are performed, or written, documented information is obtained whenever a substantially different waste is treated or a substantially different treatment process is used. Verify that at closure all wastes and residues are removed. (1)(2)(18)(23)
...	...
4-245. Installations with chemical, physical, and biological treatment facilities must conduct regular inspections (40 CFR 265.403).	Determine if the chemical, physical, and biological treatment facility is inspected in accordance with the following: (1)(2)(18)(23) - at least daily, discharge control and safety equipment (i.e., waste feed cutoff system, bypass system, drainage systems, and pressure relief systems) to ensure good working order - at least daily, data from monitoring equipment is checked to ensure process is operated in accordance with its design - at least weekly, construction materials of the treatment process or equipment is inspected to detect corrosion, leaks, etc. - at least weekly, construction materials of and the area surrounding dikes or other discharge confinement structures are inspected to detect erosion or signs of leakage (dead vegetation, wet spots, etc.).
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-246. Installations with interim status may not place ignitable, reactive, or incompatible waste in a treatment process or equipment unless certain requirements are met (40 CFR 265.405 through 265.406).	Determine whether the installation treats any of these wastes. (1)(2)(18)(23) Verify that any ignitable or reactive waste is treated or mixed in such a way before or immediately after placement in the treatment process so that the resultant material no longer meets the definition for ignitable or reactive wastes and is treated in such a way that it is not exposed to conditions that may cause it to react or ignite. (1)(2)(18)(23) Verify that incompatible wastes are not placed in the same treatment process, equipment, or in unwashed equipment that previously held an incompatible waste. (1)(2)(18)(23)
...	...
LAND DISPOSAL OF RESTRICTED WASTES	

4-247. Installations must not dispose of the wastes listed in Appendix 4-4 on land unless specific parameters are met (40 CFR 268.1, 268.4 and Appendix VII).	Verify that the wastes listed in Appendix 4-4 are not disposed of on land after the indicated dates in the table unless: (1)(2)(18)(23)
	
	- the facility was granted an extension
	- the waste is hazardous only because it exhibits a hazardous characteristic, and is otherwise prohibited from land disposal, is not prohibited from land disposal if the waste:
	  - is disposed of into a nonhazardous or hazardous injection well
	  - does not exhibit any prohibited characteristic of a hazardous waste at the point of injection
	- disposal is done in a surface impoundment if:
	  - treatment of the wastes occurs at the impoundment
	  - sampling, testing, and removal procedures and design requirements outlined in 40 CFR 268.4 are followed
	- the waste is treated.
	
	(NOTE: The following are exempted from all of the requirements concerning restricted wastes found in 40 CFR 268:
	- waste generated by SQGs of less than 100 kg of nonacute hazardous waste or less than 1 kg of acute hazardous waste per month
	- waste pesticides that a farmer disposes of
	- wastes identified or listed as hazardous after 8 November 1984 for which USEPA has not promulgated land disposal prohibitions or treatment standards
	- *de minimis* losses to wastewater treatment systems of commercial chemical product or chemical intermediates that are ignitable (D001), or corrosive (D002), and that contain underlying hazardous constituents

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-247. (continued)	- laboratory wastes displaying the characteristic of ignitability (D001), or corrosivity (D002), that are commingled with other plant wastewaters under designated circumstances - laboratory wastes that are ignitable and corrosive containing underlying hazardous constituents from laboratory operations that are mixed with other plant wastewaters at facilities whose ultimate discharge is subject to *CWA* regulations, if the annualized flow of laboratory wastewater into the facility's headwork does not exceed one percent or the laboratory wastes combined annualized sewage concentration does not exceed one ppm in the facility's headwork.) (NOTE: As of 8 May 1993, debris that is contaminated with the wastes listed in Appendix 4-4 and debris that is contaminated with any characteristic waste for which there are treatment standards is prohibited from land disposal.)
...	...
4-248. Wastes that are restricted from land disposal or the residual from the treatment of a waste restricted from land disposal shall not be diluted as a substitute for adequate treatment (40 CFR 268.3).	Verify that restricted wastes or the residual from the treatment of restricted wastes are not diluted unless they are hazardous only because they exhibit a characteristic in a treatment system which treats wastes that are than discharged into a waste of the United States by permit or which treats wastes for the purpose of pretreatment or unless the waste is a D003 reactive cyanide wastewater or nonwastewater. (1)(2)(18)(23)
...	...
4-249. Appendix 4-7 lists restricted wastes and the concentrations of their associated constituents which must not be exceeded by the waste or residual for allowable disposal of the waste or residual (40 CFR 268.40(c) and 268.43).	Verify that restricted wastes that are disposed of on land meet the criteria in Appendix 4-7. (1)(2)(18)(23) (NOTE: Appendix 4-8 lists extract concentrations for the constituents of wastes FOO1 through FOO5 as a supplement to Appendix 4-7.)
...	...

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-250. When a generator is managing a restricted waste a notice must be issued to the TSDF in writing of the appropriate treatment standards and prohibition levels (40 CFR 268.7(a)(1) through 268.7(a)(3) and 268.7 (a)(10)).	Verify that for restricted waste that does not meet the applicable treatment standards or exceeds the applicable prohibition levels the notice is issued and includes: (1)(2)(18)(19)(23) - the USEPA hazardous waste No. - treatment standards - the manifest number associated with the shipment - for hazardous debris, the contaminants subject to treatment and the following statement *This hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45* - the waste analysis data, when available. Verify that for restricted waste that can be land disposed without further treatment (this does not include debris that does not contain hazardous waste) the notice includes: (1)(2)(18)(19)(23) - the USEPA hazardous waste No. - treatment standards - the manifest number associated with the shipment - the waste analysis data, when available - the signature of an authorized representative certifying that the waste complies with the treatment standards of 40 CFR 268. Verify that, for restricted waste that is subject to an exemption from a prohibition of the type of land disposal used, the notice states that the waste is not prohibited from land disposal and includes: (1)(2)(18)(19)(23) - the USEPA hazardous waste No. - treatment standards - the manifest number associated with the shipment - the waste analysis data, when available - for hazardous debris, the contaminant subject to treatment - the date the waste is subject to prohibitions. (NOTE: SQGs with tolling agreements are required to comply with notification and certification requirements for the initial shipment of waste subject to the agreement.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-251. Generators that are managing prohibited wastes in tanks, containers, or containment buildings and treating the waste to meet applicable treatment standards, must develop and follow a written waste analysis plan (40 CFR 268.7(a)(4) and 268.7(a)(10)).	Verify that the plan describes the procedures that the generator will carry out to comply with treatment standards. (1)(2)(18)(19)(23) (NOTE: Generators treating hazardous debris under the alternative treatment standards are not required to conduct waste analysis.) Verify that the plan is kept onsite and: (1)(2)(18)(19)(23) - the plan is based on a detailed chemical and physical analysis of representative sample of the prohibited waste being treated - the plan is filed with the USEPA Regional Administrator or state authorized official at least 30 days prior to the treatment activity, with delivery verified. (NOTE: SQGs with tolling agreements are required to comply with notification and certification requirements for the initial shipment of waste subject to the agreement.)
...	...
4-252. Generators are required to keep specific documents pertaining to restricted wastes onsite (40 CFR 268.7(a)(5) through 268.7(a)(7) and 268.7(a)(10)).	Verify that if the installation is using generator knowledge to determine whether a waste meets Land Disposal Restrictions (LDR) requirements, the supporting data used in making this determination is documented and retained in the facility operating record. (1)(2)(18)(19)(23) Verify that if the installation has determined whether a waste is restricted using appropriate test methods, the waste analysis data is retained. (1)(2)(18)(19)(23) Verify that if the installation has determined that they are managing a restricted waste that is excluded from the definition of a hazardous waste or solid waste or exempt from RCRA-C, a one-time notice is placed in the installation's files stating that the generated waste is excluded. (1)(2)(18)(19)(23) Verify that a copy of all notices, certifications, demonstrations, waste analysis data and other documentation is kept for at least 5 yr from the date that the was was last sent to onsite or offsite treatment, storage, or disposal. (1)(2)(18)(19)(23) Verify that SQGs with tolling agreement retain the agreement and copies of notification and certification for at least 3 yr after the agreement expires. (1)(2)(18)(19)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-253. Treatment facilities are required to follow specific procedures for restricted wastes (40 CFR 268.7(b)).	Verify that treatment facilities are testing their waste according to the procedures outlined in their waste analysis plan. (1)(2)(18)(23) Verify that the treatment facility sends a notice with each waste shipment going to a land disposal facility, except for debris excluded from the definitions of hazardous waste, that includes the following: (1)(2)(18)(23) - USEPA hazardous waste No. - treatment standards - the manifest number associated with the the shipment of waste - waste analysis data, where available. Verify that the treatment facility submits a certification with each shipment of waste or treatment residue of a restricted waste, except for debris excluded from the definitions of a hazardous waste, to the land disposal facility stating that the waste has been treated in compliance with applicable standards. (1)(2)(18)(23) (NOTE: If waste or treatment residues will be further managed at a different treatment or storage facility, the treatment, storage, or disposal facility sending the waste or treatment residue offsite must comply with notice and certification requirements.) (NOTE: Where the wastes are recyclable materials used in a manner constituting disposal, the installation treatment facility is not required to notify the receiving facility.)
...	...
4-254. Land disposal facilities for restricted wastes are required to maintain copies of notices and certifications and test the waste except when disposing of waste that is recycled material used in a manner constituting disposal (40 CFR 268.7 (c)).	Verify that copies of the certifications and notification are kept on hand. (1)(2)(18)(23) Verify that the facility is testing waste as specified in the facilities waste analysis plan. (1)(2)(18)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-255. Generators who first claim that hazardous debris is excluded from the definition of hazardous waste are required to meet specific notification and certification requirements (40 CFR 268.7(d)).	Verify that a one-time notification is submitted to the Director or authorized state including the following: (1)(2)(18)(19)(23) - the name and address of the facility receiving the treated waste - a description of the hazardous debris as initially generated, including the applicable USEPA hazardous waste No. - for excluded debris, the technology used to treat the debris. Verify that the notification is updated if the debris is shipped to a different facility. (1)(2)(18)(19)(23) Verify that for debris that is excluded, if a different type of debris is treated or if a different technology is used to treat the debris the notification is updated. (1)(2)(18)(19)(23)
...	...

4-256. The storage of hazardous waste that is restricted from land disposal is not allowed unless specific conditions are met (40 CFR 268.50).	Verify that land disposal restricted waste is not stored at the facility unless: (1)(2)(18)(23)
	- the generator is storing the wastes in tanks, containers, or containment buildings onsite only for the purpose of accumulating enough quantity of hazardous waste to facilitate proper recovery, treatment, or disposal and all appropriate standards for containers, tanks, and containment buildings are met
	- the TSDF is storing the wastes in tanks, containers, or containment buildings in order to accumulate the necessary quantities for proper recovery, treatment or disposal and:
	  - each container is marked to identify contents and the date accumulation began
	  - each tank is clearly marked with a description of the contents, the quantity of of each hazardous waste received, and the start date of accumulation or a record of such information is maintained.
	
	Verify that transporters do not store manifested shipments of land disposal restricted wastes for more than 10 days. (1)(2)(18)(23)
	
	(NOTE: A TSDF may stored the land disposal restricted wastes for up to 1 yr if they can prove that the reason for the storage is to accumulate such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or disposal.)
	
	(NOTE: The prohibition on storage does not apply to hazardous wastes that have met treatment standards.)
	
	Verify that liquid hazardous wastes containing PCBs at concentrations greater than 50 ppm are stored at a facility that meets the requirements of 40 CFR 761.65(b) (See *Toxic Substances Control Act (TSCA)*) and is removed from storage within 1 yr of the date it was first placed into storage. (1)(2)(18)(23)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
USED OIL	
4-257. Depending on the constituents of the used oil, (see Appendix 4-9), facilities are required to handle used oil as a hazardous waste or according to specific used oil requirements (40 CFR 279.10).	Determine which types of the used oils listed in Appendix 4-9 are generated at the facility. (1)(2)(6)(18)(19)(23) Verify that used oil is handled according to its classification as one of the following: (1)(2)(6)(18)(19)(23) - a hazardous waste - used oil that falls under the requirements of 40 CFR 279 in checklist items 4-257 through 4-299 - used oil that is not subject to the requirements of 40 CFR 279 and neither is a hazardous waste unless testing indicates it does contain hazardous constituents.
...	...
USED OIL GENERATORS	(NOTE: The requirements for used oil generators do not apply to the following: - household do-it-yourselfer used oil generators - vessels at sea or at port (in these cases generation occurs when it is transported ashore) - mixtures of used oil and diesel fuel mixed by the generators for use in the generators own vehicles - farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.) (NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are co-generators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)
General	
4-258. Used oil generators that detect a release (other than an underground storage tank (UST) release) after the effective date of the authorized used oil program for the state in which the release is located must meet specific requirements (40 CFR 279.22(d)).	Verify that when a release is detected the following is done: (1)(2)(6)(18)(19)(23) - the release is stopped - the released used oil is contained - the released used oil is cleaned up and properly managed - any leaking used oil storage containers or tanks are repaired or replaced prior to returning them to service.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-259. Generators are allowed to burn used oil in used oil-fired space heaters if specific parameters are met (40 CFR 279.23).	Determine if the installation operates any used oil-fired space heaters. (1)(2)(6)(18)(19)(23) Verify that the following parameters are met: (1)(2)(6)(18)(19)(23) - the heater burns only used oil that the installation generates or used oil received from household do-it-yourself used oil generators - the heater is designed to have a maximum capacity of not more than 0.5 million British thermal units (MBtu)/h - the combustion gases from the heater are vented to the ambient air.
...	...

4-260. Except in specific circumstances, used oil generators must ensure that their used oil is transported only by transporters who have USEPA ID No. (40 CFR 279.24).	Determine if the installation is transporting used oil or contracting the transportation of used oil. (1)(2)(6)(18)(19)(23)
	
	Verify that the transporter has an USEPA ID No. except when: (1)(2)(6)(18)(19)(23)
	
	- the generator does not transport more than 55 gal at any time, the vehicle used is owned by the generator or an employee of the generator, and the used oil is going to a used oil collection center that is permitted
	- the generator is transporting the used oil to an aggregation point owned and/or operated by the same generator in a vehicle owned by the generator or an employee and no more than 55 gal is transported
	- the used oil is reclaimed under a contractual agreement and the reclaimed oil is returned to the generator for use as lubricant, cutting oil, or coolant and the contract (or tolling agreement) contains the following:
	  - the type of used oil and frequency of shipments
	  - that the vehicle used for transportation is owned by the used oil processor/refiner
	  - that reclaimed oil will be returned to the generator.

...	...
4-261. Used oil generators are not allowed to mix hazardous waste with used oil unless specific parameters are met (40 CFR 279.21(a)).	Verify that the installation does not mix hazardous waste with used oil unless: (1)(2)(6)(18)(19)(23) - the resulting mixture does not exhibit any characteristics of hazardous waste - the waste is hazardous solely because it exhibits the characteristic of ignitability and is not a listed hazardous waste.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-262. The label *Used Oil* must be clearly marked on containers and aboveground tanks used to store used oil and fill pipes used to transfer used oil into underground storage facilities (40 CFR 279.22(c)).	Verify that containers, aboveground storage tanks and fill pipes used to transfer used oil are clearly marked with the phrase *Used Oil.* (1)(2)(6)(18)(19)(23)
...	...
Containers and Tanks	
4-263. Containers and tanks used to store used oil at used oil generators must be in good condition and not leaking (40 CFR 264.171, 265.171, and 279.22(a) through 279.22(b)).	Verify that containers and tanks are not leaking, bulging, rusting, damaged or dented. (1)(2)(6)(18)(19)(23) Verify that used oil is transferred to a new container or managed in another appropriate manner when necessary. (1)(2)(6)(18)(19)(23)
...	...
4-264. Containers used at used oil generators must be made of or lined with materials compatible with the used oil stored in them (40 CFR 264.172, 265.172, and 279.22(a)).	Verify that containers are compatible with used oil. (1)(2)(6)(18)(19)(23)
...	...
4-265. Containers at used oil generators must be closed during storage and handled in a safe manner (40 CFR 264.173, 265.173, and 279.22(a)).	Verify that containers are closed except when it is necessary to add or remove used oil (check bungs and look for open funnels). (1)(2)(6)(18)(19)(23) Verify that handling and storage practices do not cause damage to the containers or cause them to leak. (1)(2)(6)(18)(19)(23)
...	...
4-266. Containers of used oil at used oil generators should be managed accordingly (GMP).	Inspect containers and storage areas to determine the following: (1)(2)(6)(18)(19)(23) - containers are not stored more than 2 high and have pallets between them - at least 3 ft of aisle space is provided between rows of containers.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-267. Secondary containment is required for specific types of tank systems used to store or treat used oil at used oil generators (40 CFR 264.190(a), 264.190(b), 264.193(a), 265.190(a), 265.190(b), 265.193(a), and 279.22(a)).	Verify that the following types of tanks used to store or treat used oil have secondary containment: (1)(2)(6)(18)(19)(23) - all new tank systems or components - existing tank systems of known documented age that are 15 yr of age. Verify that existing tank systems for which the age cannot be determined within 8 yr of 12 January 1987 and are at a facility that is older than 7 yr old are provided with secondary containment by time the facility reaches 15 yr of age or 12 January 1989, whichever comes later. (1)(2)(6)(18)(19)(23)
...	...
4-268. Secondary containment on tank systems at used oil generators must meet specific requirements (40 CFR 264.190(a), 264.193(b) through 264.193(d), 265.190(a), 265.193(b) through 265.193(d), and 279.22(a)).	Verify that secondary containment meets the following criteria: (1)(2)(6)(18)(19)(23) - it is designed, installed, and operated to prevent the migration of liquid out of the system - it is capable of detecting and collecting releases and accumulated liquids until removal is possible - it is constructed of or lined with materials compatible with the used oil - it is placed on a foundation or base that can provide appropriate support and prevent failure due to settlement, compression, or upset - a leak-detection system is present that is designed and operated to detect the failure of either the primary or secondary containment structure or the release of any used oil within 24 h or the earliest practicable time - it is sloped or designed to drain and remove liquids from leaks, spills, or precipitation. Verify that spilled or leaked used oil are removed from secondary containment within 24 h or as timely as possible. (1)(2)(6)(18)(19)(23) Verify that secondary containment for tanks includes one or more of the following: (1)(2)(6)(18)(19)(23) - a liner (external to the tank) - a vault - a double-walled tank, or - an equivalent approved device.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-269. External liners, vaults and double-walled tanks at used oil generators are required to meet specific standards (40 CFR 264.190(a), 264.193 (e), 265.190(a), 265.193 (e), and 279.22(a)).	Verify that external liner systems meet the following requirements: (1)(2)(6)(18)(19)(23) - it is designed and operated so that 100 percent of the capacity of the largest tank within the boundary would be contained - it prevents run-on and infiltration of precipitation into the secondary containment unless the collection system has sufficient capacity to handle run-on or infiltration - it is free of cracks or gaps - it surrounds the tank completely and covers all surrounding earth likely to come into contact with the used oil if there is a release - capacity is sufficient to contain precipitation from a 25-yr, 24-h rainfall event. Verify that vault systems meet the following criteria: (1)(2)(6)(18)(19)(23) - it will contain 100 percent of the capacity of the largest tank within its boundary - it prevents run-on and infiltration of precipitation unless there is sufficient excess capacity - it is constructed with chemical-resistant water stops at all joints - it has an impermeable interior coating that is compatible - it has a means to protect against the formation of and ignition of vapors within the vault if the waste is ignitable or reactive - it has an exterior moisture barrier or otherwise operated to prevent migration of moisture into the vault. Verify that double-walled tanks meet the following criteria: (1)(2)(6)(18)(19)(23) - it is designed as an integral structure so that any release is contained by the outer shell - it is protected from both corrosion of the primary tank and the external surface of the outer shell if constructed of metal - it has a built-in continuous leak detection system capable of detecting a release within 24 h.
...	...
4-270. Tank ancillary equipment at used oil generators must also be provided with secondary containment (40 CFR 264.190(a), 264.193(f), 265.190(a), 265.193(f), and 279.22(a)).	Verify that ancillary equipment, except for the following, has secondary containment: (1)(2)(6)(18)(19)(23) - aboveground piping that is visually inspected for leaks on a daily basis - welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis - sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis - pressurized above ground piping systems with automatic shutoff valves that are visually inspected for leaks on a daily basis.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-271. Tank systems at used oil generators that are required to have secondary containment that do not have secondary containment must meet specific requirements (40 CFR 264.190(a), 264.191(a) through 264.191(c), 264.193(i), 265.190(a), 265.191(a) through 265.191(c), 265.193(i), and 279.22(a)).	Verify that tank systems without secondary containment meet the following: (1)(2)(6)(18)(19)(23) - for nonenterable underground tanks a leak test is conducted annually - for other than nonenterable underground tanks either a leak test is done annually or the installation develops a schedule and procedure for an assessment of the overall condition by an independent, qualified, registered professional engineer - for ancillary equipment a leak test or other approved integrity assessment at least annually. Verify that the installation maintains a record of the results of testing and assessments. (1)(2)(6)(18)(19)(23)
...	...
4-272. Used oil generators with new tank systems must submit to the Regional Administrator a written assessment review certified by an independent, qualified, registered professional engineer and install the tank according to specific standards (40 CFR 264.192, 265.192, and 279.22(a)).	Determine if the used oil generator has any new tank systems. (1)(2)(6)(18)(19)(23) Verify that when the tanks are installed they are handled so as to prevent damage to the tank and any backfill material that is used is a noncorrosive, porous, homogeneous substance. (1)(2)(6)(18)(19)(23) Verify that the installation keeps on file the written assessments from the individuals required to certify the tank and supervise the installation of the tank. (1)(2)(6)(18)(19)(23)
...	...
4-273. Tanks used for used oil treatment or storage at used oil generators must follow certain operating requirements (40 CFR 264.194, 265.194, and 279.22(a)).	Verify that used oil is not placed in tanks if it could cause the tank system (including ancillary equipment, or containment system) to fail. (1)(2)(6)(18)(19)(23) Verify that appropriate measures are taken to prevent overfill, including: (1)(2)(6)(18)(19)(23) - spill prevention controls - overfill prevention controls - maintenance of sufficient freeboard to prevent overtopping by wave, wind action, or precipitation for uncovered tanks.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-274. Tank systems at used oil generators must comply with requirements for ignitable, reactive, or incompatible wastes (40 CFR 264.198 264.199, 265.198, 265.199, and 279.22(a)).	Verify that ignitable or reactive wastes are not placed in a tank system, unless one of the following is met: (1)(2)(6)(18)(19)(23) - 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 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 NFPA's *Flammable and Combustible Liquids Code* are maintained. (1)(2)(6)(18)(19)(23) Verify that incompatible waste, or incompatible wastes and materials, are not placed in the same tank system unless minimum safety requirements are met. (1)(2)(6)(18)(19)(23) Verify that used oil is not placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material unless minimum safety requirements are met. (1)(2)(6)(18)(19)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
USED OIL COLLECTION CENTERS AND AGGREGATION POINTS	
4-275. Do-It-Yourselfer (DIY) used oil collection centers are required to meet the same standards as used oil generators (40 CFR 279.30).	Verify that DIY used oil collection centers such as the auto hobby shop meet the requirements outlined in the sections titled USED OIL GENERATORS and USED OIL GENERATORS - Containers and Tanks. (1)(2)(6)(18)(19)(23)
...	...
4-276. Used oil collection centers are required to be licensed/permitted and operated according to specific standards (40 CFR 279.31).	Determine if the installation operates a used oil collection center. (1)(2)(6)(18)(19)(23) Verify that the collection center meets the requirements for used oil generators outlined in the sections titled USED OIL GENERATORS and USED OIL GENERATORS - Containers and Tanks. (1)(2)(6)(18)(19)(23) Verify that the collection center is registered/licensed/permitted recognized by a state/county/municipal government to manage used oil. (1)(2)(6)(18)(19)(23)
...	...
4-277. Used oil aggregation points are required to be operated according to the standards for used oil generators (40 CFR 279.32).	Verify that the used oil aggregation point is operated according to the standards outlined in the sections titled USED OIL GENERATORS and USED OIL GENERATORS - Containers and Tanks. (1)(2)(6)(18)(19)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
USED OIL TRANSPORTATION	(NOTE: These requirements concerning transportation and transfer of used oil do not apply to the following: - onsite transportation - generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil collection center - generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil aggregation point owned by the generator - transportation of used oil generated by household do-it-yourselfers the initial generator to a regulated generator, collection center, aggregation point, processor/refiner, or burner.)
4-278. Transporters who put used oil in a truck that has previously transported hazardous waste without emptying and cleaning the truck are required to transport and handle the used oil as a hazardous waste (40 CFR 279.40(b) through 279.40(c)).	Verify that if used oil that is contaminated with hazardous waste is determined to be a hazardous waste, it is transported as a hazardous waste. (1)(2)(6)(18)(19)(23) (NOTE: Installations that transport used oil imported from abroad or exported outside of the United States must meet these requirements while in the boundaries of the United States.)
...	...
4-279. Used oil transporters can consolidate or aggregate loads of used oil (40 CFR 279.41).	Verify that transporters conduct only incidental processing operations such as settling and water separation unless they also comply with the requirements for processors and refiners. (1)(2)(6)(18)(19)(23)
...	...
4-280. Used oil transporters are required to have an USEPA ID No. (40 CFR 279.42).	Verify that if the installation is transporting used oil, it has an USEPA ID No. (1)(2)(6)(18)(19)(23)
...	...
4-281. Transporters must meet specific requirements for deliveries and shipments of used oil (40 CFR 279.43(a) through 279.43(b)).	Verify that all used oil is delivered to: (1)(2)(6)(18)(19)(23) - another used oil transporter if the transporter has an USEPA ID No. - a used oil processing/re-refining facilities with an USEPA ID No. - an off-specification used oil burner facility with an USEPA ID No. - an on-specification used oil burner facility. Verify that DOT labeling, packaging, and placarding requirements are met. (1)(2)(6)(18)(19)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-282. Transporters are required to take specific actions if there is a discharge of used oil during transportation (40 CFR 279.43(c)).	Verify that if there is a discharge the following are done: (1)(2)(6)(18)(19)(23) - notification of authorities (NRC) - containment of the discharge - submission of a written report to the DOT - cleanup.
...	...
4-283. Transporters are required to determine if the total halogen content of used oil being transported or stored at a transfer facility is above or below 1000 ppm (40 CFR 279.44).	Verify that the transporter determines the total halogen content of the used oil by one of the following methods: (1)(2)(6)(18)(19)(23) - testing the used oil - applying knowledge of halogen content of the used oil in light of the materials or processes used. Verify that records of analyses are kept for 3 yr. (1)(2)(6)(18)(19)(23)
...	...
4-284. Used oil transporters are required to keep records for used oil shipments and deliveries (40 CFR 279.46).	Verify that the following records are kept for each shipment accepted for transport: (1)(2)(6)(18)(19)(23) - name and address of the generator, transporter, or processor/re-refiner who provided the used oil for transport - USEPA ID No. - the quantity of oil accepted - the day of acceptance - signature of receipt. Verify that the following records are kept for each delivery to another used oil transporter, or to a used oil burner, processor/re-refiner, or disposal facility and for export/import activities: (1)(2)(6)(18)(19)(23) - the name and address of the receiving facility or transporter - the USEPA ID No. of the receiving facility or transporter - the quantity of used oil delivered - the date of delivery - the signature, dated upon receipt of the used oil, of a representative of the receiving facility or transporter. Verify that records are maintained for 3 yr. (1)(2)(6)(18)(19)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-285. Transfer facilities are required to store used oil in tanks and containers that meet specific requirements (40 CFR 279.45(b) through 279.45(g)).	Verify that the tanks and containers at transfer facilities meet the requirements outlined in the section USED OIL GENERATORS - Containers and Tanks. (1)(2)(6)(18)(19)(23) Verify that containers and aboveground storage tanks (ASTs) used to store used oil have secondary containment that meets the following minimum requirements: (1)(2)(6)(18)(19)(23) - dikes, berms, or retaining walls - a floor that covers the entire area within the dikes, berms, or retaining walls - the system is impervious. Verify that containers and aboveground tanks are labeled with the phrase *Used Oil.* (1)(2)(6)(18)(19)(23) Verify that fill pipes used to transfer used oil into underground storage tanks at transfer facilities are labeled *Used Oil.* (1)(2)(6)(18)(19)(23)
...	...
4-286. Specific steps must be followed in response to a release at a transfer facility (40 CFR 279.45(h)).	Verify that the following steps are taken: (1)(2)(6)(18)(19)(23) - the release is stopped - the release is contained - the release is cleaned up and properly managed - necessary repairs and replacements are done.
...	...
USED OIL BURNERS	

4-287. Off-specification used oil fuel may be burned for energy recovery in industrial furnaces and boilers (40 CFR 279.12(c), 279.60(a), and 279.61(a)).	Determine if the installation burns use oil fuel for the purpose of energy recovery. (1)(2)(6)(18)(19)(23)
	
	Verify that off-specification used oil fuel is only burned for energy recovery in one of the following: (1)(2)(6)(18)(19)(23)
	
	- an industrial furnace
	- a boiler that is identified as one of the following:
	  - industrial boilers that are located on the site of a facility engaged in a manufacturing process where substances are transformed into new products by mechanical or chemical processes
	  - utility boilers used to produce electric power steam, heated or cooled air, or other gases or fluids for sale
	  - used oil-fired space heaters
	- hazardous waste incinerators.
	
	(NOTE: The following are exempt from meeting these requirements:
	- the burning of used oil by a generator in an onsite space heater
	- the burning of used oil by a processor/re-refiner for purposes of processing.)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-288. Used oil burners are required to have an USEPA ID No. (40 CFR 279.60(a) and 279.62).	Verify that the installation has an USEPA ID No. (1)(2)(6)(18)(19)(23) (NOTE: The following are exempt from meeting these requirements: - the burning of used oil by a generator in an onsite space heater - the burning of used oil by a processor/re-refiner for purposes of processing.)
...	...
4-289. Used oil burners are required to determine if used oil is a hazardous waste (40 CFR 279.60(a) and 279.63).	Verify that the used oil is either tested or the used oil burner applies their knowledge of the halogen content of the used oil in light of the materials or processes used, or using information from another source. (1)(2)(6)(18)(19)(23) Verify that copies of analyses are maintained for 3 yr. (1)(2)(6)(18)(19)(23)
...	...
4-290. Used oil burners are required to store used oil in tanks and containers that meet specific requirements (40 CFR 279.60(a) and 279.64(a) through 279.64(f)).	Verify that the tanks and containers at used oil burners meet the requirements outlined in the section USED OIL GENERATORS - Containers and Tanks. (1)(2)(6)(18)(19)(23) Verify that containers and ASTs used to store used oil have secondary containment that meets the following minimum requirements: (1)(2)(6)(18)(19)(23) - dikes, berms, or retaining walls - a floor that covers the entire area within the dikes, berms, or retaining walls - the system is impervious. Verify that containers and aboveground tanks are labeled with the phrase *Used Oil.* (1)(2)(6)(18)(19)(23) Verify that fill pipes used to transfer used oil into underground storage tanks at used oil burners are labeled *Used Oil.* (1)(2)(6)(18)(19)(23) (NOTE: The following are exempt from meeting these requirements: - the burning of used oil by a generator in an onsite space heater - the burning of used oil by a processor/re-refiner for purposes of processing.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-291. Specific steps must be followed in response to a release at a used oil burner facility (40 CFR 279.60(a) and 279.64(g)).	Verify that the following steps are taken: (1)(2)(6)(18)(19)(23) - the release is stopped - the release is contained - the release is cleaned up and properly managed - necessary repairs and replacements are done. (NOTE: The following are exempt from meeting these requirements: - the burning of used oil by a generator in an onsite space heater - the burning of used oil by a processor/re-refiner for purposes of processing.)
...	...
4-292. Used oil burners are required to keep a record of each used oil shipment accepted for burning (40 CFR 279.60(a) and 279.65).	Verify that some form of records are kept that documents the following: (1)(2)(6)(18)(19)(23) - the name and address of the transporter who delivered the used oil - the name and address of the generator or processor or re-refiner from whom the used oil was sent to the burner - the USEPA ID No. of the transporter or if applicable the generator, processor/re-refiner - the quantity of used oil accepted - the date of acceptance. Verify that records are maintained for at least 3 yr. (1)(2)(6)(18)(19)(23) (NOTE: The following are exempt from meeting these requirements: - the burning of used oil by a generator in an onsite space heater - the burning of used oil by a processor/re-refiner for purposes of processing.)
...	...
4-293. Before a burner can accept the first shipment of off-specification used oil fuel from a generator, transporter, or processor/re-refiner, the burner must provide a one-time written notice (40 CFR 279.60(a) and 279.66).	Verify that the burner issued a notice to the USEPA stating the location and description of the activity and certifying that the used oil will only be burned in an industrial furnace or boiler. (1)(2)(6)(18)(19)(23) Verify that the certification is maintained for 3 yr from the date of the last shipment received. (1)(2)(6)(18)(19)(23) (NOTE: The following are exempt from meeting these requirements: - the burning of used oil by a generator in an onsite space heater - the burning of used oil by a processor/re-refiner for purposes of processing.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
USED OIL MARKETING	
4-294. Used oil fuel marketers may only initiate a shipment of off-specification used oil to a used oil burner who has an USEPA ID No. and burns the used oil in an industrial furnace or boiler (40 CFR 279.70(b) and 279.71).	Determine if the installation is marketing off-specification used fuel oil. (1)(2)(6)(18)(19)(23) Verify that it is going to an appropriate used oil burner. (NOTE: These requirements do not apply to the following: - persons who direct shipments of on-specification used oil and who are not the first person to claim the oil is on-specification - used oil generators and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner.)
...	...
4-295. Generators, transporters, processor/re-refiners, or burners must determine if the fuel oil or off or on-specification (40 CFR 279.70(b) and 279.72).	Verify that a determination as to whether the used oil fuel is off or on-specification is made by analyses or obtaining copies of other analyses. (1)(2)(6)(18)(19)(23) Verify that records of analyses are maintained for 3 yr. (1)(2)(6)(18)(19)(23) (NOTE: These requirements do not apply to the following: - persons who direct shipments of on-specification used oil and who are not the first person to claim the oil is on-specification - used oil generators and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner.)
...	...
4-296. Used oil fuel marketers are required to have a USEPA ID No. (40 CFR 279.70(b) and 279.73).	Verify that the installation has a USEPA ID No. (1)(2)(6)(18)(19)(23) (NOTE: These requirements do not apply to the following: - persons who direct shipments of on-specification used oil and who are not the first person to claim the oil is on-specification - used oil generators and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner.)
...	...

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-297. Any used oil marketer that directs a shipment of used oil to a burner is required to keep specific records (40 CFR 279.70(b) and 279.74).	Verify that records containing the following information are kept of each shipment of off-specification oil: (1)(2)(6)(18)(19)(23) - the name and address of the transporter who delivers the used oil to the burner - the name and address of the burner who will receive the used oil - the USEPA ID No. of the burner - the quantity of used oil shipped - the date of shipment. Verify that records containing the following information are kept of each shipment of on-specification oil: (1)(2)(6)(18)(19)(23) - the name and address of the facility receiving the shipment - the quantity of used oil delivered - a cross-reference to the record of used oil analysis - the date of shipment. Verify that records are maintained for 3 yr. (1)(2)(6)(18)(19)(23) (NOTE: These requirements do not apply to the following: - persons who direct shipments of on-specification used oil and who are not the first person to claim the oil is on-specification - used oil generators and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner.)
...	...
4-298. Before a used oil generator, transporter, processor/re-refiner directs the first shipment of off-specification used oil to a burner, they must obtain a one-time written and signed notice from the burner (40 CFR 279.70(b) and 279.75).	Verify that notice from the burner has been received that indicates the burner notified the USEPA of the location and used oil management activities and that the burner will only burn off-specification oil in approved furnaces and boilers. (1)(2)(6)(18)(19)(23) Verify that a copy of the notice is kept for 3 yr from the date the last shipment of off-specification used oil is shipped to the burner. (1)(2)(6)(18)(19)(23)
...	...
USED OIL DUST SUPPRESSION	
4-299. Used oil cannot be used for dust suppression unless allowed by the state (40 CFR 279.82).	Verify that used oil is not used for dust suppression at the installation. (1)(2)(6)(18)(19)(23)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

Appendix 4-1

40 CFR 261 Identification and Listing of Hazardous Waste

TABLE I

Hazardous Waste from Nonspecific Sources

(40 CFR 261.30 through 261.31)

Industry and USEPA Hazardous Waste No.	Hazardous Waste	Hazard Code*
	Generic	
F001	The spent halogenated solvents used in degreasing: Trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and the chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated 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, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,1,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten 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 spent nonhalogenated solvents, Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; and the still bottoms from the recovery of these solvents and spent solvent mixtures.	(i)

* HAZARD CODES (Column 3)

t = toxic waste
i = ignitable waste
r = reactive waste
h = acute hazardous waste

** (except wastewater and spent carbon from hydrogen chloride purification); the manufacturing or production use: As a reactant, chemical intermediate, or component in a formulating process. The listing for F020 and F023 does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.

Industry and USEPA Hazardous Waste Number	Hazardous Waste	Hazard Code*
F004	The spent nonhalogenated solvents, cresols and cresylic acid, and nitrobenzene; and the still bottoms from the recovery of these solvents.	(t)
F005	The following spent nonhalogenated solvents: Toluene, methyl ethyl ketone, carbons disulfide, isobutanol, pyridine, benzene, 2-ethoxylethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten 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 solvents.	(i,t)
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 plating (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 solution from electroplating operations.	(r,t)
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	(r,t)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	(r,t)
F010	Quenching bath residues from oil baths from metal heat treating operations 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)

* HAZARD CODES (Column 3)
t = toxic waste
i = ignitable waste
r = reactive waste
h = acute hazardous waste

** (except wastewater and spent carbon from hydrogen chloride purification); the manufacturing or production use: As a reactant, chemical intermediate, or component in a formulating process. The listing for F020 and F023 does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.

Industry and USEPA Hazardous Waste Number	Hazardous Waste	Hazard Code*
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 washing when such phosphating is an exclusive conversion coating process.	(t)
F020	Wastes from use of tri-, or tetrachlorophenol, or intermediates used to produce its pesticide derivatives. **	(h)
F021	Wastes of pentachlorophenol, or intermediates used to produce its derivatives. **	(h)
F022	Wastes, of , penta-, or hexachlorobenzenes under alkaline conditions. **	(h)
F023	Wastes, of tri and tetrachlorophenols. **	(t)
F024	Wastes, including but not limited to distillation residues, heavy ends, tars, and reactor cleanout wastes from the production of chlorinated aliphatic hydrocarbons, utilizing free radical catalyzed processes having carbon chain lengths from one to five, (*Omits light ends*, spent filters and filter aids, spent desiccants, wastewater, wastewater treatment sludges, spent catalysts and wastes listed in 40 CFR 261.32).	(t)
F025	Condensed light ends, spent filters aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	(t)

* HAZARD CODES (Column 3)
- t = toxic waste
- i = ignitable waste
- r = reactive waste
- h = acute hazardous waste

** (except wastewater and spent carbon from hydrogen chloride purification); the manufacturing or production use: As a reactant, chemical intermediate, or component in a formulating process. The listing for F020 and F023 does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.

Industry and USEPA Hazardous Waste Number	Hazardous Waste	Hazard Code*
F026	Wastes of tetra-, penta-, or hexachlorobenzene under alkaline conditions.	(h)
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols (does not include hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.	(h)
F028	Residues from incineration or thermal treatment of soil contaminated with USEPA hazardous waste Nos. F020, F021, F022, F023, F026 and F027.	(t)
F032	Wastewaters (except those that have not come intro contact with process contaminants), process residues, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use of have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with 261.35 and where the generator does not resume or initiate use of chorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	(t)
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use cresote formulations. This listing does not include K001 bottom sludge from the treatment of wastewater from wood preserving processes that use creosote and or phentachlorophenol.	(t)
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chormium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachorophenol.	(t)

* HAZARD CODES (Column 3)

t = toxic waste
i = ignitable waste
r = reactive waste
h = acute hazardous waste

** (except wastewater and spent carbon from hydrogen chloride purification); the manufacturing or production use: As a reactant, chemical intermediate, or component in a formulating process. The listing for F020 and F023 does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.

Industry and USEPA Hazardous Waste Number	Hazardous Waste	Hazard Code*
F037	Petroleum refinery primary oil/water/solids separation sludge--Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refiners. This includes, but is not limited to, sludges generated in: Oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from noncontact once through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units*** (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing.	

NOTE:
*hazard code:
t= toxic waste
i= ignitable waste
r= reactive waste
h= acute hazardous waste
c= corrosive waste
e= toxicity characteristic waste

* Note: The listing of wastewaters that have not come into contact with process contaminants is stayed administratively. The listing for plants that have previously used chlorophenolic formulations is administratively stayed whenever these wastes are covered by the F034 or F035 listings. These stays will remain in effect until further administrative action is taken.

** (except wastewater and spent carbon from hydrogen chloride purification); the manufacturing or production use: As a reactant, chemical intermediate, or component in a formulating process. The listing for F020 and F023 does not include wastes from the production of hexachlorophene from highly purified 2,4,5- trichlorophenol.

*** Aggressive biological treatment units are defined as units which employ one of the following treatment methods: Activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or high-rate aeration. High-rate aeration is a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity, and (A) the units employs a minimum of 6hp per million gallons of treatment volume; and either (B) the hydraulic retention time of the unit is no longer than 5 days; of (C) the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the Toxicity Characteristic.

Industry and USEPA Hazardous Waste Number	Hazardous Waste	Hazard Code*
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge--Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: Induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from noncontact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units*** (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive	(t)

NOTE:
*hazard code:
t= toxic waste
i= ignitable waste
r= reactive waste
h= acute hazardous waste
c= corrosive waste
e= toxicity characteristic waste

* Note: The listing of wastewaters that have not come into contact with process contaminants is stayed administratively. The listing for plants that have previously used chlorophenolic formulations is administratively stayed whenever these wastes are covered by the F034 or F035 listings. These stays will remain in effect until further administrative action is taken.

** (except wastewater and spent carbon from hydrogen chloride purification); the manufacturing or production use: As a reactant, chemical intermediate, or component in a formulating process. The listing for F020 and F023 does not include wastes from the production of hexachlorophene from highly purified 2,4,5- trichlorophenol.

*** Aggressive biological treatment units are defined as units which employ one of the following treatment methods: Activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or high-rate aeration. High-rate aeration is a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity, and (A) the units employs a minimum of 6hp per million gallons of treatment volume; and either (B) the hydraulic retention time of the unit is no longer than 5 days; of (C) the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the Toxicity Characteristic.

Industry and USEPA Hazardous Waste Number	Hazardous Waste	Hazard Code*
F038 (cont)	biological treatment units) and F037, K048, and K051 wastes are not included in this listing.	
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under Subpart D. (Leachate resulting from the management of one or more of the following wastes and no other hazardous waste retains its hazardous waste number(s): F020, F021, F022, F023, F026, F027, and/or F028.)	(t)

NOTE:
*hazard code:
t= toxic waste
i= ignitable waste
r= reactive waste
h= acute hazardous waste
c= corrosive waste
e= toxicity characteristic waste

* The listing of wastewaters that have not come into contact with process contaminants is stayed administratively. The listing for plants that have previously used chlorophenolic formulations is administratively stayed whenever these wastes are covered by the F034 or F035 listings. These stays will remain in effect until further administrative action is taken.

** (except wastewater and spent carbon from hydrogen chloride purification); the manufacturing or production use: As a reactant, chemical intermediate, or component in a formulating process. The listing for F020 and F023 does not include wastes from the production of hexachlorophene from highly purified 2,4,5- trichlorophenol.

*** Aggressive biological treatment units are defined as units which employ one of the following treatment methods: Activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or high-rate aeration. High-rate aeration is a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity, and (A) the units employs a minimum of 6hp per million gallons of treatment volume; and either (B) the hydraulic retention time of the unit is no longer than 5 days; of (C) the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the Toxicity Characteristic.

Hazardous Wastes from Organic and Inorganic Chemical Industries
(40 CFR 261.30 through .31)
(effective as of 11-20-90)

USEPA Hazardous Waste Number	Hazardous Waste	Hazard Code
	Organic Chemicals	
K009	Distillation bottoms from the production of acetaldehyde from ethylene.	(t)
K010	Distillation side cuts from the production of acetaldehyde from ethylene.	(t)
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	(r,t)
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.	(r,t)
K014	Bottoms from the acetronitrile purification column in the production of acrylonitrile.	(t)
K015	Still bottoms from the distillation of benzyl chloride.	(t)
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	(t)
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	(t)
K018	Heavy ends from fractionation in ethyl chloride production.	(t)
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	(t)
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	(t)
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	(t)
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	(t)

* HAZARD CODES (Column 3)
r = reactive waste
t = toxic waste

USEPA Hazardous Waste Number	Hazardous Waste	Code
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	(t)
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	(t)
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	(t)
K026	Stripping still tails from the production of methyl ethyl pyridines.	(t)
K027	Centrifuge residue from toluene diisocyanate production.	(r,t)
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	(t)
K029	Waste from the product stream stripper in the production of 1,1,1-trichloroethane.	(t)
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	(t)
K083	Distillation bottoms from aniline production.	(t)
K085	Distillation of fractionation column bottoms from the production of chlorobenzene.	(t)
K103	Process residues from aniline extraction from the production of aniline.	(t)
K104	Combined wastewater streams generated from nitrobenzene or aniline production.	(t)
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	(t)
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid	(C,T)
K108	Condensed Column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(I,T)

* HAZARD CODES (Column 3)

r = reactive waste

t = toxic waste

USEPA Hazardous Waste Number	Hazardous Waste	Code
K109	Spent filter cartridges from product purification from production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(T)
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(T)
K093	Distillation light ends from the production of phthalic anydride from erthoxylene.	(t)
K094	Distillation bottoms from the production of phthalic anhydride from orthozylene.	(t)
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	(t)
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	(t)
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene.	(c,t)
K112	Reaction byproduct water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	(t)
K113	Condensed liquid light ennation of dinitrotoluene.	(t)
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine.	(t)
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(t)
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	(t)
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	(t)
K118	Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(t)

* HAZARD CODES (Column 3)

r = reactive waste

t = toxic waste

USEPA Hazardous Waste Number	Hazardous Waste	Code
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(t)
	Inorganic Chemicals	
K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.	(t)
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	(t)
K106	Wastewater treatment sludge from the mercury cell process in chlorine production.	(t)
	Hazardous Waste from Explosives Manufacturing	
K044	Wastewater treatment sludge from the manufacturing and processing of explosives.	(r)
K045	Spent carbon from the treatment of wastewater containing explosives.	(r)
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	(t)
K047	Pink/red water from TNT operations.	(r)

* HAZARD CODES (Column 3)
r = reactive waste
t = toxic waste

Appendix 4-2

Commercial Chemical Products or Manufacturing Chemical Intermediates Identified as Toxic Wastes

40 CFR 261.33

(COMMENT: Primary hazardous properties of these materials have been indicated by the letter (t) (toxicity), (r) (reactivity), (i) (ignitability), and (c) (corrocivity); absence of a letter indicates that the compound is only listed 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-yl-
U240	acetic acid, (2,4-dichloropheoxy)-, salts and esters
U112	acetic 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
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

USEPA Hazardous Waste No.	Substance
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
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)

USEPA Hazardous Waste No.	Substance
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-
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
U074	2-butene, 1,4-dichloro- (i,t)
U143	2-butenoic acid, 2-methyl-, 7-

USEPA Hazardous Waste No.	Substance
	[(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	chlornaphazine
U037	chlorobenzene
U039	p-chloro-m-cresol
U041	1-chloro-2,3-epoxypropane
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

USEPA Hazardous Waste No.	Substance
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
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-dimethylbenzylhydroperoxide (r)
U097	dimethylcarbamoyl chloride
U098	1,1-dimethylhydrazine
U099	1,2-dimethylhydrazine

USEPA Hazardous Waste No.	Substance
U101	2,4-dimethylphenol
U102	dimethyl phthalate
U103	dimethyl sulfate
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-
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-
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)

USEPA Hazardous Waste No.	Substance
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
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

USEPA Hazardous Waste No.	Substance
U149	malononitrile
U150	melphalan
U151	mercury
U152	methacrylonitrile (i,t)
U092	methanamine (N-methyl- (i)
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)
U162	methyl methacrylate (i,t)
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

USEPA Hazardous Waste No.	Substance
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
U180	n-nitrosopyrrolidine
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-

USEPA Hazardous Waste No.	Substance
	1,2-ethenediyl)bis-,
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-
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
U162	2-propenoic acid, 2-methyl-, methyl ester (i,t)
U194	n-propylamine (i,t)
U083	propylene dichloride

USEPA Hazardous Waste No.	Substance
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)
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

USEPA Hazardous Waste No.	Substance
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
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.

Appendix 4-3

Toxicity Characteristics Constituents and Regulatory Levels
(40 CFR 261.24)

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	Mercury	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]
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

[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, pg 11804.

Appendix 4-4

Land Disposal Restricted Wastes and Their Effective Dates
40 CFR 268, Appendix VII

Part 1--Land Disposal Restricted Wastes and Their Effective Dates

Waste Code	Waste Category	Effective Date
California list	Liquid hazardous wastes, including free liquids associated with solid or sludge, containing free cyanides at concentrations greater than or equal to 1000 mg/L or certain metals or compounds of these metals greater than or equal to the prohibition levels.	8 July 1987
California list	Liquid (aqueous) hazardous wastes having a pH less than or equal to 2.	8 July 1987
California list	Dilute HOC wastewaters, defined as HOC-waste mixtures that are primarily water and that contain greater than or equal to 1000 mg/L but less than 10,000 mg/L.	8 July 1987
California list	Liquid hazardous waste containing PCBs greater than or equal to 50 ppm.	8 July 1987
California list	Other liquid and nonliquid hazardous wastes containing HOCs in total concentration greater than or equal to 1000 mg/L.	8 November 1988
D001	All	8 August 1990
D002	All	8 August 1990
D003	All	8 August 1990
D004	Wastewater	8 August 1990
D005	Nonwastewater	8 May 1992
D006	All	8 August 1990
D007	All	8 August 1990
D007	All	8 August 1990
D008	Lead materials before secondary smelting	8 May 1992
D008	All others	8 August 1990
D009	Nonwastewater	8 May 1992
D010	All	8 August 1990
D011	All	8 August 1990
D012	All	8 August 1990
D013	All	8 August 1990
D014	All	8 August 1990
D015	All	8 August 1990
D016	All	8 August 1990
D017	All	8 August 1990
F001	SQGs, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids.	8 November 1988
F001	All others	8 November 1986
F002(1,1,2 -trichloroethane)	Wastewater and nonwastewater	8 August 1990
F002	SQGs, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids.	8 November 1988

Waste Code	Waste Category	Effective Date
F002	All others	8 November 1986
F003	SQGs, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids.	8 November 1988
F003	All others	8 November 1986
F004	SQGs, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids.	8 November 1988
F004	All others	8 November 1986
F005 (benzene, 2-ethoxy ethanol, 2-nitropropane)	Wastewater and nonwastewater	8 August 1990
F005	SQGs, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and soils.	8 November 1988
F005	All others	8 November 1986
F006	Wastewater	8 August 1990
F006	Nonwastewater	8 August 1988
F006 (cyanides)	Nonwastewater	8 July 1989
F007	All	8 July 1989
F008	All	8 July 1989
F009	All	8 July 1989
F010	All	8 June 1989
F011 (cyanides)	Nonwastewater	8 December 1986
F011	All others	8 July 1989
F012 (cyanides)	Nonwastewater	8 December 1989
F012	All others	8 July 1989
F019	All	8 August 1990
F020	All	8 November 1988
F021	All	8 November 1988
F022	All	8 November 1988
F023	All	8 November 1988
F024 (metals)	Wastewater	8 June 1989
F024 (metals)	Nonwastewater	8 August 1990
F024 [b]	All others	8 June 1989
F025	All	8 August 1990
F026	All	8 November 1988
F027	All	8 November 1988
F028	All	8 November 1988
FO37	Other than from surface impoundments	30 June 1993
FO37	All	30 June 1994
FO38	Other than from surface impoundments	30 June 1993
FO38	All	30 June 1994
F039	Wastewater	8 August 1990
F039	Nonwastewater	8 May 1992
K001 (organics)[b]	All	8 August 1988
K001	All others	8 August 1988
K002	All	8 August 1990
K003	All	8 August 1990

Waste Code	Waste Category	Effective Date
K004	Wastewater	8 August 1990
K004[c]	Nonwastewater	8 August 1990
K005	Wastewater	8 August 1990
K005[c]	Nonwastewater	8 June 1989
K006	All	8 August 1990
K007	Wastewater	8 August 1990
K007[c]	Nonwastewater	8 June 1989
K008	Wastewater	8 August 1990
K008[c]	Nonwastewater	8 August 1988
K009	All	8 June 1989
K010	All	8 June 1989
K011	Wastewater	8 August 1990
K011	Nonwastewater	8 June 1989
K013	Wastewater	8 August 1990
K013	Nonwastewater	8 June 1989
K014	Wastewater	8 August 1990
K014	Nonwastewater	8 June 1989
K015	Wastewater	8 August 1988
K015	Nonwastewater	8 August 1990
K016	All	8 August 1988
K017	All	8 August 1990
K018	All	8 August 1988
K019	All	8 August 1988
K020	All	8 August 1988
K021	Wastewater	8 August 1990
K021[c]	Nonwastewater	8 August 1988
K022	Wastewater	8 August 1990
K022	Nonwastewater	8 August 1988
K023	All	8 June 1989
K024	All	8 August 1988
K025	Wastewater	8 August 1990
K025[c]	Nonwastewater	8 August 1988
K026	All	8 August 1990
K027	All	8 June 1989
K028 (metals)	Nonwastewater	8 August 1990
K028	All others	8 June 1989
K029	Wastewater	8 August 1990
K029	Nonwastewater	8 June 1989
K030	All	8 August 1990
K031	Wastewater	8 August 1990
K031	Nonwastewater	8 May 1992
K032	All	8 August 1990
K033	All	8 August 1990
K034	All	8 August 1990
K035	All	8 August 1990
K036	Wastewater	8 June 1989
K036[c]	Nonwastewater	8 August 1988
K037[b]	Wastewater	8 August 1988
K037	Nonwastewater	8 August 1988
K038	All	8 June 1989
K039	All	8 June 1989

Waste Code	Waste Category	Effective Date
K040	All	8 June 1989
K041	All	8 August 1990
K042	All	8 August 1990
K043	All	8 June 1989
K044[c]	All	8 August 1988
K045[c]	all	8 August 1988
K046 (Nonreactive)	Nonwastewater	8 August 1988
K046	All others	8 August 1990
K047	All	8 August 1988
K048	Wastewater	8 August 1990
K048	Nonwastewater	8 November 1990
K049	Wastewater	8 August 1990
K049	Nonwastewater	8 November 1990
K050	Wastewater	8 August 1990
K050	Nonwastewater	8 November 1990
K051	Wastewater	8 August 1990
K051	Nonwastewater	8 November 1990
K052	Wastewater	8 August 1990
K052	Nonwastewater	8 November 1990
K060	Wastewater	8 August 1990
K060[c]	Nonwastewater	8 August 1988
K061	Wastewater	8 August 1990
K061	Nonwastewater (low zinc) (interim standard for high zinc remains in effect until 7 August 1991).	8 August 1988
K062	All	8 August 1988
K069 (Non-Calcium Sulfate)[c]	Nonwastewater	8 August 1988
K069	All others	8 August 1990
K071	All	8 August 1990
K073	All	8 August 1990
K083	All	8 August 1990
K084	Wastewater	8 August 1990
K084	Nonwastewater	8 May 1992
K085	All	8 August 1990
K086 (organics)[b]	All	8 August 1988
K086	All others	8 August 1988
K087	All	8 August 1988
K093	All	8 June 1989
K094	All	8 June 1989
K095	Wastewater	8 August 1990
K095	Nonwastewater	8 June 1989
K096	Wastewater	8 August 1990
K096	Nonwastewater	8 June 1989
K097	All	8 August 1990
K098	All	8 August 1990
K099	All	8 August 1988
K100	Wastewater	8 August 1990
K100[c]	Nonwastewater	8 August 1988
K101 (organics)	Wastewater	8 August 1988
K101 (metals)	Wastewater	8 August 1990

Waste Code	Waste Category	Effective Date
K101 (organics)	Nonwastewater	8 August 1988
K101 (metals)	Nonwastewater	8 May 1992
K102 (organics)	Wastewater	8 August 1988
K102 (metals)	Wastewater	8 August 1990
K102 (organics)	Nonwastewater	8 August 1988
K102 (metals)	Nonwastewater	8 May 1992
K103	All	8 August 1988
K104	All	8 August 1988
K105	All	8 August 1990
K106	Wastewater	8 August 1990
K106	Nonwastewater	8 May 1992
K107	All	8 November 1992
K108	All	8 November 1992
K109	All	8 November 1992
K110	All	9 November 1992
K111	All	9 November 1992
K112	All	9 November 1992
K113	All	8 June 1989
K114	All	8 June 1989
K115	All	8 June 1989
K116	All	8 June 1989
K117	All	9 November 1992
K118	All	9 November 1992
K123	All	9 November 1992
K124	All	9 November 1992
K125	All	9 November 1992
K126	All	9 November 1992
K131	All	9 November 1992
K132	All	9 November 1992
K136	All	9 November 1992
P001	All	8 August 1990
P002	All	8 August 1990
P003	All	8 August 1990
P004	All	8 August 1990
P005	All	8 August 1990
P006	All	8 August 1990
P007	All	8 August 1990
P008	All	8 August 1990
P009	All	8 August 1990
P010	Wastewater	8 August 1990
P010	Nonwastewater	8 May 1992
P011	Wastewater	8 August 1990
P011	Nonwastewater	8 May 1992
P012	Wastewater	8 August 1990
P012	Nonwastewater	8 May 1992
P013 (barium)	Nonwastewater	8 August 1990
P013	All others	8 June 1989
P014	All	8 August 1990
P015	All	8 August 1990
P016	All	8 August 1990
P017	All	8 August 1990

Waste Code	Waste Category	Effective Date
P018	All	8 August 1990
P020	All	8 August 1990
P021	All	8 June 1989
P022	All	8 August 1990
P023	All	8 August 1990
P024	All	8 August 1990
P026	All	8 August 1990
P027	All	8 August 1990
P028	All	8 August 1990
P029	All	8 June 1989
P030	All	8 June 1989
P031	All	8 August 1990
P033	All	8 August 1990
P034	All	8 August 1990
P036	Wastewater	8 August 1990
P036	Nonwastewater	8 May 1992
P037	All	8 August 1990
P038	Wastewater	8 August 1990
P038	Nonwastewater	8 May 1992
P039	All	8 June 1989
P040	All	8 June 1989
P041	All	8 June 1989
P042	All	8 August 1990
P043	All	8 June 1989
P044	All	8 June 1989
P045	All	8 August 1990
P046	All	8 August 1990
P047	All	8 August 1990
P048	All	8 August 1990
P049	All	8 August 1990
P050	All	8 August 1990
P051	All	8 August 1990
P054	All	8 August 1990
P056	All	8 August 1990
P057	All	8 August 1990
P058	All	8 August 1990
P059	All	8 August 1990
P060	All	8 August 1990
P062	All	8 June 1989
P063	All	8 June 1989
P064	All	8 August 1990
P065	Wastewater	8 August 1990
P065	Nonwastewater	8 May 1992
P066	All	8 August 1990
P067	All	8 August 1990
P068	All	8 August 1990
P069	All	8 August 1990
P070	All	8 August 1990
P071	All	8 June 1989
P072	All	8 August 1990
P073	All	8 August 1990

Waste Code	Waste Category	Effective Date
P074	All	8 June 1989
P075	All	8 August 1990
P076	All	8 August 1990
P077	All	8 August 1990
P078	All	8 August 1990
P079	All	8 August 1990
P081	All	8 August 1990
P082	All	8 August 1990
P084	All	8 August 1990
P085	All	8 June 1989
P087	All	8 May 1992
P088	All	8 August 1990
P089	All	8 June 1989
P092	Wastewater	8 August 1990
P092	Nonwastewater	8 May 1992
P093	All	8 August 1990
P094	All	8 June 1989
P095	All	8 August 1990
P096	All	8 August 1990
P099 (silver)	Wastewater	8 August 1990
P099	All others	8 June 1989
P101	All	8 August 1990
P102	All	8 August 1990
P103	All	8 August 1990
P104 (silver)	Wastewater	8 August 1990
P104	All others	8 June 1989
P105	All	8 August 1990
P106	All	8 June 1989
P108	All	8 August 1990
P109	All	8 June 1989
P110	All	8 August 1990
P111	All	8 June 1989
P112	All	8 August 1990
P113	All	8 August 1990
P114	All	8 August 1990
P115	All	8 August 1990
P116	All	8 August 1990
P118	All	8 August 1990
P119	All	8 August 1990
P120	All	8 August 1990
P121	All	8 June 1989
P122	All	8 August 1990
P123	All	8 August 1990
U001	All	8 August 1990
U002	All	8 August 1990
U003	All	8 August 1990
U004	All	8 August 1990
U005	All	8 August 1990
U006	All	8 August 1990
U007	All	8 August 1990
U008	All	8 August 1990

Waste Code	Waste Category	Effective Date
U009	All	8 August 1990
U010	All	8 August 1990
U011	All	8 August 1990
U012	All	8 August 1990
U014	All	8 August 1990
U015	All	8 August 1990
U016	All	8 August 1990
U017	All	8 August 1990
U018	All	8 August 1990
U019	All	8 August 1990
U020	All	8 August 1990
U021	All	8 August 1990
U022	All	8 August 1990
U023	All	8 August 1990
U024	All	8 August 1990
U025	All	8 August 1990
U026	All	8 August 1990
U027	All	8 August 1990
U028	All	8 June 1989
U029	All	8 August 1990
U030	All	8 August 1990
U031	All	8 August 1990
U032	All	8 August 1990
U033	All	8 August 1990
U034	All	8 August 1990
U035	All	8 August 1990
U036	All	8 August 1990
U037	All	8 August 1990
U038	All	8 August 1990
U039	All	8 August 1990
U041	All	8 August 1990
U042	All	8 August 1990
U043	All	8 August 1990
U044	All	8 August 1990
U045	All	8 August 1990
U046	All	8 August 1990
U047	All	8 August 1990
U048	All	8 August 1990
U049	All	8 August 1990
U050	All	8 August 1990
U051	All	8 August 1990
U052	All	8 August 1990
U053	All	8 August 1990
U055	All	8 August 1990
U056	All	8 August 1990
U057	All	8 August 1990
U058	All	8 June 1989
U059	All	8 August 1990
U060	All	8 August 1990
U061	All	8 August 1990
U062	All	8 August 1990

Waste Code	Waste Category	Effective Date
U063	All	8 August 1990
U064	All	8 August 1990
U066	All	8 August 1990
U067	All	8 August 1990
U068	All	8 August 1990
U069	All	8 June 1989
U070	All	8 August 1990
U071	All	8 August 1990
U072	All	8 August 1990
U073	All	8 August 1990
U074	All	8 August 1990
U075	All	8 August 1990
U076	All	8 August 1990
U077	All	8 August 1990
U078	All	8 August 1990
U079	All	8 August 1990
U080	All	8 August 1990
U081	All	8 August 1990
U082	All	8 August 1990
U083	All	8 August 1990
U084	All	8 August 1990
U084	All	8 August 1990
U085	All	8 August 1990
U086	All	8 August 1990
U087	All	8 June 1989
U088	All	8 June 1989
U089	All	8 August 1990
U090	All	8 August 1990
U091	All	8 August 1990
U092	All	8 August 1990
U093	All	8 August 1990
U094	All	8 August 1990
U095	All	8 August 1990
U096	All	8 August 1990
U097	All	8 August 1990
U098	All	8 August 1990
U099	All	8 August 1990
U101	All	8 August 1990
U101	All	8 June 1989
U103	All	8 August 1990
U105	All	8 August 1990
U106	All	8 August 1990
U107	All	8 June 1989
U108	All	8 August 1990
U109	All	8 August 1990
U110	All	8 August 1990
U111	All	8 August 1990
U112	All	8 August 1990
U113	All	8 August 1990
U114	All	8 August 1990
U115	All	8 August 1990

Waste Code	Waste Category	Effective Date
U116	All	8 August 1990
U117	All	8 August 1990
U118	All	8 August 1990
U119	All	8 August 1990
U120	All	8 August 1990
U121	All	8 August 1990
U122	All	8 August 1990
U123	All	8 August 1990
U124	All	8 August 1990
U125	All	8 August 1990
U126	All	8 August 1990
U127	All	8 August 1990
U128	All	8 August 1990
U129	All	8 August 1990
U130	All	8 August 1990
U131	All	8 August 1990
U132	All	8 August 1990
U133	All	8 August 1990
U134	All	8 August 1990
U135	All	8 August 1990
U136	Wastewater	8 August 1990
U136	Nonwastewater	8 May 1992
U137	All	8 August 1990
U138	All	8 August 1990
U140	All	8 August 1990
U141	All	8 August 1990
U142	All	8 August 1990
U143	All	8 August 1990
U144	All	8 August 1990
U145	All	8 August 1990
U146	All	8 August 1990
U147	All	8 August 1990
U148	All	8 August 1990
U149	All	8 August 1990
U150	All	8 August 1990
U151	Wastewater	8 August 1990
U151	Nonwastewater	8 May 1992
U152	All	8 August 1990
U153	All	8 August 1990
U154	All	8 August 1990
U155	All	8 August 1990
U156	All	8 August 1990
U157	All	8 August 1990
U158	All	8 August 1990
U159	All	8 August 1990
U160	All	8 August 1990
U161	All	8 August 1990
U162	All	8 August 1990
U163	All	8 August 1990
U164	All	8 August 1990
U165	All	8 August 1990

Waste Code	Waste Category	Effective Date
U166	All	8 August 1990
U167	All	8 August 1990
U168	All	8 August 1990
U169	All	8 August 1990
U170	All	8 August 1990
U171	All	8 August 1990
U172	All	8 August 1990
U173	All	8 August 1990
U174	All	8 August 1990
U176	All	8 August 1990
U177	All	8 August 1990
U178	All	8 August 1990
U179	All	8 August 1990
U180	All	8 August 1990
U181	All	8 August 1990
U182	All	8 August 1990
U183	All	8 August 1990
U184	All	8 August 1990
U185	All	8 August 1990
U186	All	8 August 1990
U187	All	8 August 1990
U188	All	8 August 1990
U189	All	8 August 1990
U190	All	8 June 1989
U191	All	8 August 1990
U192	All	8 August 1990
U193	All	8 August 1990
U194	All	8 August 1990
U196	All	8 August 1990
U197	All	8 August 1990
U200	All	8 August 1990
U201	All	8 August 1990
U202	All	8 August 1990
U203	All	8 August 1990
U204	All	8 August 1990
U205	All	8 August 1990
U206	All	8 August 1990
U207	All	8 August 1990
U208	All	8 August 1990
U209	All	8 August 1990
U210	All	8 August 1990
U211	All	8 August 1990
U212	All	8 August 1990
U213	All	8 August 1990
U214	All	8 August 1990
U215	All	8 August 1990
U216	All	8 August 1990
U217	All	8 August 1990
U218	All	8 August 1990
U219	All	8 August 1990
U220	All	8 August 1990

Waste Code	Waste Category	Effective Date
U221	All	8 June 1989
U222	All	8 August 1990
U223	All	8 June 1989
U225	All	8 August 1990
U226	All	8 August 1990
U227	All	8 August 1990
U228	All	8 August 1990
U234	All	8 August 1990
U235	All	8 June 1989
U236	All	8 August 1990
U237	All	8 August 1990
U238	All	8 August 1990
U239	All	8 August 1990
U240	All	8 August 1990
U243	All	8 August 1990
U244	All	8 August 1990
U246	All	8 August 1990
U247	All	8 August 1990
U248	All	8 August 1990
U249	All	8 August 1990
U328	All	9 November 1992
U353	All	9 November 1992
U359	All	9 November 1992

[a] The previous table does not include mixed radioactive wastes (from the First, Second, and Third rules) that are receiving a national capacity variance until 8 May 1992, for all applicable treatment technologies. This table also does not include contaminated soil and debris wastes.

[b] The standard has been revised in the Third Third Final Rule.

[c] No land disposal standard has been revised in the Third Third Final Rule.

Part 2--Summary of Effective Dates of Land Disposal Restrictions for Contaminated Soil and Debris (CSD)

	Restricted hazardous waste in CSD	Effective date
1.	Solvent-(F001-F005) and dioxin-(F020-F023 and F026-F028) containing soil and debris from CERCLA response of RCRA corrective actions.	8 November 1990
2.	Soil and debris not from CERCLA response or RCRA corrective actions contaminated with less than 1% total solvents (F001-F005) or dioxins (F020-F023 and F026-F028).	8 November 1990
3.	Soil and debris contaminated with California list HOCs from CERCLA response or RCRA corrective actions.	8 November 1990
4.	Soil and debris contaminated with California list HOCs not from CERCLA response or RCRA corrective actions.	8 July 1989
5.	All soil and debris contaminated with First Third wastes for which treatment standards are based on incineration.	8 August 1990
6.	All soil and debris contaminated with Second Third wastes for which treatment standards are based on incineration.	8 June 1991
7.	All soil and debris contaminated with Third Third wastes or, First or Second Third "soft hammer" wastes which had treatment standards promulgated in the Third Third rule, for which treatment standards are based on incineration, vitrification, or mercury retorting, acid leaching followed by chemical precipitation, or thermal recovery of metals; as well as all inorganic solids debris contaminated with D004-D011 wastes, and all soil and debris contaminated with mixed RCRA/radioactive wastes.	8 May 1992

NOTE: 1. Appendix VII is provided for the convenience of the reader. 2. Contaminated Soil and Debris Rule will be promulgated in the future.

[56 FR 3912, 31 January 1991]

Appendix 4-5

Commercial Chemical Products or Manufacturing Chemical Intermediates Identified as Acute Hazardous Waste

40 CFR 261.33(a) - 261.33(e)

(COMMENT: 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.)

Hazardous Waste Number	Substance
P023	Acetaldehyde, chloro-
P002	Acetamide, N-(aminothioxomethyl)-
P057	Acetamide, 2-fluoro-
P058	Acetic acid, fluoro-, sodium salt
P002	1-Acetyl-2-thiourea
P003	Acrolein
P070	Aldicarb
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide
P007	5-(Aminomethyl)-3-isoxazolol
P008	4-Aminopyridine
P009	Ammonium picrate
P119	Ammonium vanadate
P099	Argebtate(1), bis(cyano-C)-, potassium
P010	Arsenic acid
P012	Arsenic oxide As2O3
P011	Arsenic oxide As2O5
P011	Arsenic pentoxide
P012	Arsenic trioxide
P038	Arsine, diethyl
P036	Arsonous dichloride, phenyl
P054	Aziridine
P067	Aziridine, 2-methyl
P013	Barium cyanide
P024	Benzenamine, 4-chloro-
P077	Benzenamine, 4-nitro-
P028	Benzene, (chloromethyl)-
P042	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-
P046	Benzeneethanamine, alpha,alpha-dimethyl-
P014	Benzenethiol
P001	2H-1-Benzopyran-2-one,4-hydroxy-3-(3-oxo-1-phenylbutyl)-, and salts when present at concentrations greater than 0.3%

Hazardous Waste Number	Substance
P028	Benzyl chloride
P015	Berylium
P016	Bis(chloromethyl)ether
P017	Bromoacetone
P018	Brucine
P021	Calcium cyanide
P021	Calcium cyanide Ca(CN)2
P022	Carbon disulfide
P095	Carbonic dichloride
P023	Chloroacetaldehyde
P024	p-Chloroaniline
P026	1-(o-Chlorophenyl)thiourea
P027	3-Chloropropionitrile
P029	Copper cyanide
P029	Copper cyanide Cu(CN)
P030	Cyanides (soluble cyanide salts), n.o.s.
P031	Cyanogen
P033	Cyanogen chloride
P033	Cyanogen chloride (CN)Cl
P034	2-Cyclohexyl-4,6-dinitrophenol
P016	Dichloromethyl ether
P036	Dichlorophenylarsine
P037	Dieldrin
P038	Diethylarsine
P041	Diethyl-p-nitrophenyl phosphate
P040	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	Diisopropyl fluorophosphate (DEP)
P004	1,4:5,8-Dimethanonapthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-,(1alpha,4alpha,4abeta,5alpha, 8alpha,8abeta)-
P060	1,4:5,8-Dimethanonapthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-,(1alpha,4alpha,4abeta,5beta, 8beta,8abeta)-
P037	2,7:3,6-Dimethanonapth[2,3b]oxirane, 3,4,5,6,9,9-hexachloro-1a,2,2a,3, 6,6a,7,7a-octahydro-,(1-aalpha, 2beta,2aalpha,3beta,6beta,6aalpha, 7beta,7aalpha)-
P051	2,7:3,6-Dimethanonapth[2,3b]oxirane, octahydro-, (1aalpha,2beta,2abeta, 3alpha,6alpha,6abeta,7beta,7aalpha)-
P044	Dimethoate
P045	3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino)carbonyl]oxime
P046	alpha,alpha-Dimethylphenethylamine
P047	4,6-Dinitro-o-cresol and salts
P048	2,4-Dinitrophenol

Hazardous Waste Number	Substance
P020	Dinoseb
P085	Diphosphoramide,octamethyl-
P111	Diphosphoric acid, tetraethyl ester
P039	Disulfoton
P049	Dithiobiuret
P050	Endosulfan
P088	Endothall
P051	Endrin
P051	Endrin and metabolites
P042	Epinephrine
P031	Ethanedinitrile
P066	Ethanimidothioic acid, N-[[(methylamino)carbony] oxy]-, methyl ester
P101	Ethyl cyanide
P054	Ethyleneimine
P097	Famphur
P056	Fluorine
P057	Fluoroacetamide
p058	Fluoroacetic acid, sodium salt
p065	Fulminic acid,mercury(2+)salt
P059	Heptachlor
P062	Hexaethyl tetraphosphate
p116	Hydrazinecarbothioamide
P068	Hydrazine, methyl-
P063	Hydrocyanic acid
P063	Hydrogen cyanide
P096	Hydrogen phosphide
P064	Isocyanic acid, methyl ester
P060	Isodrin
P007	3(2H)-Isoxazolone, 5-(aminomethyl)-
P092	Mercury (acetato-O)phenyl-
P065	Mercury fulminate
P082	Methanamine, N-methyl-N-nitroso
P064	Methane, isocyanato-
P016	Methane, oxybis[chloro-
P112	Methane, tetranitro-
P118	Methanethiol, trichloro-
P050	6,9-Methano-2,4,3-benzodioxathlepen, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-,3-oxide
P059	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P066	Methomyl
P068	Methyl hydrazine
P064	Methyl isocyanate
P069	2-Methyllactonitrile
P071	Methyl parathion
P072	alpha-Naphthylthiourea
P073	Nickel carbonyl

Hazardous Waste Number	Substance
P073	Nickel carbonyl, (T-4)-
P074	Nickel cyanide
P074	Nickel cyanide Ni (CN)2
P075	Nicotine and salts
P076	Nitric oxide
P077	p-Nitroaniline
P078	Nitrogen dioxide
P076	Nitrogen oxide NO
P078	Nitrogen oxide NO2
P081	Nitroglycerine
P082	N-Nitrosodimethylamine
P084	N-Nitrosomethylvinylamine
P074	Nickel cyanide
P085	Octamethylpyrophosphoramide
P087	Osmium oxide
P087	Osmium tetroxide
P088	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P089	Parathion
P034	Phenol, 2-cyclohexyl-4,6-dinitro
P048	Phenol, 2,4-dinitro
P047	Phenol, 2-methyl-4,6-dinitro- and salts
P020	Phenol, 2-(1-methylpropyl)-4,6-dinitro
P009	Phenol, 2,4,6-trinitro-, ammonium salt
P092	Phenylmercury acetate
P093	Phenylthiourea
P094	Phorate
P095	Phosgene
P096	Phosphine
P041	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P094	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P044	Phosphorodithioic acid, O,O-dimethyl S[2-(methylamino)-2-oxoethyl] ester
P043	Phosphorofluoric acid, bis(1-methylethyl) -ester
P089	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester

Hazardous Waste Number	Substance
P097	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P071	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester
P110	Plumbane, tetraethyl-
P098	Potassium cyanide
P098	Potassium cyanide K(CN)
P099	Potassium silver cyanide
P070	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P101	Propanenitrile
P027	Propanenitrile, 3-chloro-
P069	Propanenitrile, 2-hydroxy-2-methyl
P081	1,2,3-Propanetriol, trinitrate
P017	2-Propanone, 1-bromo-
P102	Propargyl alcohol
P003	2-Propenal
P005	2-Propen- 1 -ol
P067	1,2-Propylenimine
P102	2-Propyn-1 -ol
P008	4-Pyridinamine
P075	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-,(S)-, and salts
P103	Selenourea
P104	Silver cyanide
P104	Silver cyanide Ag(CN)
P105	Sodium azide
P106	Sodium cyanide
P106	Sodium cyanide Na(CN)
P108	Strychnidin-10-one, and salts
P018	Strychnidin 10-one, 2,3-dimethoxy-
P108	Strychnine and salts
P115	Sulfuric acid, dithallium(l) salt
P109	Tetraethyldithiopyrophosphate
P110	Tetraethyl lead
P111	Tetraethylpyrophosphate
P112	Tetranitromethane (r)
P062	Tetraphosphoric acid, hexaethyl ester
P113	Thallic oxide
P113	Thallium(lll) oxide
P114	Thallium(l) selenite
P115	Thallium(l) sulfate
P109	Thiodiphosphoric acid, tetraethyl ester
P045	Thiofanox
P049	Thiomidodicarbonic diamide
P014	Thiophenol
P116	Thiosemicarbazide
P026	Thiourea, (2-chlorophenyl)-
P072	Thiourea, 1-naphthalenyl-

Hazardous Waste Number	Substance
P093	Thiourea, phenyl-
P123	Toxaphene
P118	Trichloromethanethiol
P119	Vanadic acid, ammonium salt
P120	Vanadium oxide V2O3
P120	Vanadium pentoxide
P084	Vinylamine, N-methyl-N-nitroso
P001	Warfarin, and salts, when present at concentrations greater than 0.3%
P121	Zinc cyanide
P121	Zinc cyanide Zn(CN)2
P122	Zinc phosphide Zn3P2, when present at concentrations greater than 0.3%

Appendix 4-6

Potentially Incompatible Hazardous Wastes

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences that result from mixing materials in one group with materials in another group. The list is intended as a guide to indicate the need for special precautions when managing these potentially incompatible waste materials or components. This list is not intended to be exhaustive. Operators must, as the regulations require, adequately analyze their wastes so they can avoid creating uncontrolled substances or reactions of the type listed below, whether listed below or not.

In the lists below, the mixing of a *Group A* material with a *Group B* material may have the potential consequences as noted.

Group 1-A	Group 1-B
Acetylene sludge Alkaline caustic liquids Alkaline cleaner Alkaline corrosive liquids Alkaline corrosive battery acid Caustic wastewater Lime sludge and other corrosive alkalies Lime wastewater Lime and water Spent caustic	Acid sludge Acid and water Battery acid Chemical cleaners Electrolyte, acid Etching acid liquid or solvent Pickling liquor and other corrosive acids Spent acid Spent mixed acid Spent sulfuric acid

Potential Consequences: heat generation; violent reaction.

Group 2-A	Group 2-B
Aluminum Beryllium Calcium Lithium Magnesium Potassium Sodium Zinc powder Other reactive metals and metal hydrides	Any waste in Group 1-A or 1-B

Potential Consequences: fire; explosion; generation of flammable hydrogen gas.

Group 3-A	Group 3-B
Alcohols Water	Any concentrated waste in Groups 1-A or 1-B Calcium Lithium Metal hydrides Potassium SO_2Cl_2, $SOCl_2$, PCl_3, CH_3SiCl_3 Other water-reactive waste

Potential Consequences: fire; explosion; heat generation; generation of flammable or toxic gases.

Group 4-A	Group-4-b
Alcohols Aldehydes Halogenated hydrocarbons Nitrated hydrocarbons Unsaturated hydrocarbons Other reactive organic compounds and solvents	Concentrated Group 1-A or Group 1-B wastes Group 2-A wastes

Potential Consequences: fire explosion; violent reaction.

Group 5-A	Group 5-B
Spent cyanide and sulfide solutions	Group 1-B wastes

Potential Consequences: generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Appendix 4-6 (continued)

Group 6-A	Group 6-B
Chlorates Chlorine Chlorites Chromic acid Hypochlorites Nitrates Nitric acid, fuming Perchlorates Permanganates Perioxides Other strong oxidizers	Acetic acid and other organic acids Concentrated mineral acids Group 2-A wastes Group 4-A wastes Other flammable and combustible wastes

Potential Consequences: fire; explosion; violent reaction.

Source: "Law, Regulations, and Guidelines for Handling of Hazardous Waste." California Department of Health, February 1975. (As referenced in 40 CFR, Part 264, Appendix V)

Appendix 4-7

Constituent Concentrations in Wastes (CCW)
40 CFR 268.43(a)

Waste Codes Regulated Hazardous Constituent with Applicable Chemical Abstract Service (CAS) No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
D003 (CAS 57-12-5) (reactive cyanides category-- based on 261.23(a)(5))		
Cyanides (Total)	Reserved	590 (3)
Cyanides (Amenable)	0.86	30
D004* (CAS 7440-38-2) Arsenic	5.0	NA
D005* (CAS 7440-39-2) Barium	100	NA
D006* (CAS 7440-43-9) Cadmium	1.0	NA
D007* (CAS 7440-47-32) Chromium (Total)	5.0	NA
D008* (CAS 7439-92-1) Lead	5.0	NA
D009* (CAS 7439-97-6) Mercury	0.20	NA
D010* (CAS 7782-49-2) Selenium	1.0	NA
D011* (CAS 7440-22-4) Silver	5.0	NA
D012** (CAS 720-20-8) Endrin	NA	0.13 (1)
D013** (CAS 58-89-9) Lindane	NA	0.066 (1)
D014** (CAS 72-43-5) Methoxychlor	NA	0.18 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
D015** (CAS 8001-35-1)		
Toxaphene	NA	1.3 (1)
D016** (CAS 94-75-7)		
2,4-D	NA	10.0 (1)
D017** (CAS 93-76-5)		
2,4,5-TP Silvex	NA	7.9 (1)
F001-F005 spent solvents***		
1,1,2-Trichloroethane (CAS 71-55-6)	0.030	7.6 (1)
Benzene (CAS 71-43-2)	0.070	3.7 (1)
F001-F005 spent solvents (Pharmaceutical industry wastewater subcategory)		
Methylene chloride (CAS 75-09-2)	0.44	NA
F006*		
Cyanides (Total) (CAS 57-12-5)	1.2	590
Cyanides (Amenable) (CAS 57-12-5)	0.86	30
Cadmium (CAS 7440-43-9)	1.6	NA
Chromium (CAS 7440-47-32)	0.32	NA
Lead (CAS 7439-92-1)	0.040	NA
Nickel (CAS 7440-02-0)	0.44	NA
F007*		
Cyanides (total) (CAS 57-12-5)	1.9	590
Cyanides (amenable) (CAS 57-12-5)	0.1	30
Chromium (total) (CAS 7440-47-32)	0.32	NA
Lead (CAS 7439-92-1)	0.04	NA
Nickel (CAS 7440-02-0)	0.44	NA
F008*		
Cyanides (total) (CAS 57-12-5)	1.9	590
Cyanides (amenable) (CAS 57-12-5)	0.1	30
Chromium (CAS 7440-47-32)	0.32	NA
Lead (CAS 7439-92-1)	0.04	NA
Nickel (CAS 7439-92-1)	0.44	NA
F009*		
Cyanides (total) (CAS 57-12-5)	1.9	590
Cyanides (amenable) (CAS 57-12-5)	0.1	30
Chromium (CAS 7440-47-32)	0.32	NA
Lead (CAS 7439-92-1)	0.04	NA
Nickel (CAS 7440-02-0)	0.44	NA

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
F010		
Cyanides (total) (CAS 57-12-5)	1.9	1.5
Cyanides (amenable) (CAS 57-12-5)	0.1	NA
F011*		
Cyanides (total) (CAS 57-12-5)	1.9	110
Cyanides (amenable) (CAS 57-12-5)	0.1	9.1
Chromium (total) (CAS 7440-47-32)	0.32	NA
Lead (CAS 7439-92-1)	0.04	NA
Nickel (CAS 7440-02-0)	0.44	NA
F012*		
Cyanides (total) (CAS 57-12-5)	1.9	110
Cyanides (amenable) (CAS 57-12-5)	0.1	9.1
Chromium (total) (CAS 7440-47-32)	0.32	NA
Lead (CAS 7439-92-1)	0.04	NA
Nickel (CAS 7440-02-0)	0.44	NA
F019*		
Cyanides (total) (CAS 57-12-5)	1.2	590 (3)
Cyanides (amenable) (CAS 57-12-5)	0.86	30 (3)
Chromium (total) (CAS 7440-47-32)	0.32	NA
F024**		
Note: F024 organic standards must be treated via incineration (INCIN)		
2-Chloro-1,3-butadiene (CAS 126-99-6)	0.28 (1)	0.28 (1)
3-Chloropropene (CAS 107-05-1)	0.28 (1)	0.28 (1)
1,1-Dichloroethane (CAS 75-34-3)	0.014 (1)	0.014 (1)
1,2-Dichloroethane (CAS 107-06-2)	0.014 (1)	0.014 (1)
1,2-Dichloropropane (CAS 78-87-5)	0.014 (1)	0.014 (1)
cis-1,3-Dichloropropene (CAS 10061-01-5)	0.014 (1)	0.014 (1)
trans-1,3-Dichloropropene (CAS 10061-02-6)	0.014 (1)	0.014 (1)
Bis(2-ethylhexyl)phthalate (CAS 117-81-7)	0.036 (1)	1.8 (1)
Hexachloroethane (CAS 67-72-1)	0.036 (1)	1.8 (1)
Chromium (total) (CAS 7440-47-32)	0.35	NA
Nickel (CAS 7440-02-0)	0.47	NA
F025 (light ends subcategory)		
Chloroform (CAS 67-66-3)	0.046 (2)	6.2 (1)
1,2-Dichloroethane (CAS 107-06-2)	0.21 (2)	6.2 (1)
1,1-Dichloroethylene (CAS 75-35-4)	0.025 (2)	6.2 (1)
Methylene chloride (CAS 75-9-2)	0.089 (2)	31 (1)
Carbon tetrachloride (CAS 56-23-5)	0.057 (2)	6.2 (1)
1,1,2-Trichloroethane (CAS 79-00-5)	0.054 (2)	6.2 (1)
Trichloroethylene (CAS 79-01-6)	0.054 (2)	5.6 (1)
Vinyl chloride (CAS 75-01-4)	0.27 (2)	33 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
F025 (spent filters/aids and desiccants subcategory)		
Chloroform (CAS 67-66-3)	0.046 (2)	6.2 (1)
Methylene chloride (CAS 75-9-2)	0.089 (2)	31 (1)
Carbon tetrachloride (CAS 56-23-5)	0.057 (2)	6.2 (1)
1,1,2-Trichloroethane (CAS 79-00-5)	0.054 (2)	6.2 (1)
Trichloroethylene (CAS 79-01-6)	0.054 (2)	5.6(1)
Vinyl chloride (CAS 75-01-4)	0.27 (2)	33 (1)
Hexachlorobenzene (CAS 118-74-1)	0.055 (2)	37 (1)
Hexachlorobutadiene (CAS 87-68-3)	0.055 (2)	28 (1)
Hexachloroethane (CAS 67-72-1)	0.055 (2)	30 (1)
F039***(and D001 and D002 wastes prohibited under 40 CFR 268.37)		
Acetone (CAS 67-64-1)	0.28 (2)	160 (1)
Acenaphtalene (CAS 208-96-8)	0.059 (2)	3.4 (1)
Acenaphthene (CAS 83-32-9)	0.059 (2)	4.0 (1)
Acetonitrile (CAS 75-05-8)	0.17 (2)	NA
Acetophenone (CAS 96-86-2)	0.010 (2)	9.7 (1)
2-Acwtylaminofluorene (CAS 53-96-3)	0.059 (2)	140 (1)
Acrolein		
Acrylontrile (CAS 107-02-8)	0.029 (2)	NA
Aldrin (CAS 107-13-1)	0.24 (2)	84 (1)
(CAS 309-00-2)	0.021 (2)	0.066 (1)
4-Aminobiphenyl (CAS 92-67-1)	0.13 (2)	NA
Aniline (CAS 62-53-3)	0.81 (2)	14 (1)
Anthracene (CAS 120-12-7)	0.059 (2)	4.0 (1)
Aramite (CAS 140-57-8)	0.36 (2)	NA
Aroclor 1016 (CAS 12674-11-2)	0.013 (2)	0.92 (1)
Aroclor 1221 (CAS 11104-28-2)	0.014 (2)	0.92 (1)
Aroclor 1232 (CAS 11141-16-5)	0.013 (2)	0.92 (1)
Aroclor 1242 (CAS 53469-21-9)	0.017 2)	0.92 (1)
Aroclor 1248 (CAS 12672-29-6)	0.013 (2)	0.92 (1)
Aroclor 1254 (CAS 11097-69-1)	0.014 (2)	1.8 (1)
Aroclor 1260 (CAS 11096-82-5)	0.014 (2)	1.8 (1)
alpha-BHC (CAS 319-84-6)	0.00014 (2)	0.066 (1)
beta-BHC (CAS 319-85-7)	0.00014 (2)	0.066 (1)
delta-BHC (CAS 319-86-8)	0.023 (2)	0.066 (1)
gamma-BHC (CAS 58-89-9)	0.0017 (2)	0.066 (1)
Benzene (CAS 71-34-2)	0.14 (2)	36 (1)
Benzo(a)anthracene (CAS 56-55-3)	0.059 (2)	8.2 (1)
Benzo(b)fluoranthene (CAS 205-99-2)	0.055 (2)	3.4 (1)
Benzo(k)fluoranthene (CAS 207-08-9)	0.059 (2)	3.4 (1)
Benzo(g,h,i)perylene (CAS 191-24-2)	0.0055 (2)	1.5 (1)
Benzo(a)pyrene (CAS 5-32-8)	0.061 (2)	8.2 (1)
Bromodichloromethane (CAS 75-27-4)	0.35 (2)	15 (1)
Bromoform (CAS 72-25-2) (Tribromomethane)	0.63 (2)	15 (1)
Bromomethane (CAS 74-83-9) (methyl bromide)	0.11 (2)	15 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
4-Bromophenyl phenyl ether (CAS 101-55-3)	0.055 (2)	15 (1)
n-Butyl alcohol (CAS 71-36-3)	5.6 (2)	2.6 (1)
Butyl benzyl phthalate (CAS 85-68-7)	0.017 (2)	7.9 (1)
2-sec-Butyl-4,6-dinitrophenol (CAS 88-85-7)	0.066 (2)	2.5 (1)
Carbon tetrachloride (CAS 56-23-5)	0.057 (2)	5.6 (1)
Carbon disulfide (CAS 75-15-0)	0.014 (2)	NA
Chlordane (CAS 57-74-9)	0.0033 (2)	0.13 (1)
p-Chloroaniline (CAS 106-47-8)	0.46 (2)	16 (1)
Chlorobenzene (CAS 108-90-7)	0.057 (2)	5.7 (1)
Chlorobenzilate (CAS 510-15-6)	0.10 (2)	NA
2-Chioro-1,3-butadiene (CAS 126-99-8)	0.057 (2)	NA
Chlorodibromomethane (CAS 124-48-1)	0.057 (2)	15 (1)
Chloroethane (CAS 75-00-3)	0.27 (2)	6.0 (1)
bis(2-Chloroethoxy) methane (CAS 111-91-1)	0.036 (2)	7.2 (1)
bis(2-Chloroethyl) ether (CAS 111-44-4)	0.033 (2)	7.2 (1)
Chloroform (CAS 67-66-3)	0.046 (2)	5.6 (1)
bis(2-Chloroisopropyl) ether(CAS 39638-32-9)	0.055 (2)	7.2 (1)
p-Chloro-m-cresol (CAS 59-50-7)	0.018 (2)	14 (1)
Chloromethane (Methyl chloride)(CAS 74-87-3)	0.19 (2)	33 (1)
2-Chloronaphthalene (CAS 91-8-7)	0.055 (2)	5.6 (1)
2-Chlorophenol (CAS 95-57-8)	0.044 (2)	5.7 (1)
3-Chloropropylene (CAS 107-05-1)	0.036 (2)	28 (1)
Chrysene (CAS 218-01-9)	0.059 (2)	8.2 (1)
o-Cresol (CAS 95-48-7)	0.11 (2)	5.6 (1)
Cresol (m- and p-isomers)	0.77 (2)	3.2 (1)
Cyclohexanone (CAS 108-94-1)	0.36 (2)	NA
1,2-Dibromo-3-chloropane (CAS 96-12-8)	0.11 (2)	15 (1)
1,2-Dibromoethane (CAS 106-93-4) (Ethylene dibromide)	0.028 (2)	15 (1)
Dibromomethane (CAS 74-95-3)	0.11 (2)	15 (1)
2,4-Dichlorophenoxyacetic acid (2,4-D) (CAS 94-75-7)	0.72 (2)	10 (1)
o,p'-DDD (CAS 53-19-0)	0.023 (2)	0.087 (1)
p,p'-DDD (CAS 72-54-8)	0.023 (2)	0.087 (1)
o,p'-DDE (CAS 3424-82-6)	0.031 (2)	0.087 (1)
p,p'-DDE (CAS 72-55-9)	0.031 (2)	0.087 (1)
o,p'-DDT (CAS 780-02-6)	0.0039 (2)	0.087 (1)
p,p'-DDT (CAS 50-29-3)	0.0039 (2)	0.087 (1)
Dibenzo(a,h)anthracene (CAS 53-70-3)	0.055 (2)	8.2 (1)
Dibenzo(a,e)pyrene (CAS 192-65-4)	0.061 (2)	NA
m-Dichlorobenzene (CAS 541-73-1)	0.036 (2)	6.2 (1)
o-Dichlorobenzene (CAS 95-50-1)	0.088 (2)	6.2 (1)
p-Dichlorobenzene (CAS 106-46-7)	0.090 (2)	6.2 (1)
Dichlorodifluoromethane (CAS 75-71-8)	0.23 (2)	7.2 (1)
1,1-Dichloroethane (CAS 75-34-3)	0.059 (2)	7.2 (1)
1,2-Dichloroethane (CAS 107-06-2)	0.21 (2)	7.2 (1)
1,1-Dichloroethylene (CAS 75-35-4)	0.025 (2)	33 (1)
trans-1,2-Dichloroethene	0.054 (2)	33 (1)
2,4-Dichlorophenol (CAS 120-83-2)	0.044 (2)	14 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
2,6-Dichlorophenol (CAS 87-65-0)	0.044 (2)	14 (1)
1,2-Dichloropropane (CAS 78-87-5)	0.85 (2)	18 (1)
cis-1,3-Dichloropropene (CAS 10061-01-5)	0.036 (2)	18 (1)
trans-1,3-Dichloropropene (CAS 10061-02-6)	0.036 (2)	18 (1)
Dieldrin (CAS 60-57-1)	0.017 (2)	0.13 (1)
Diethyl phthalate (CAS 84-66-2)	0.20 (2)	28 (1)
2,4-Dimethyl phenol (CAS 105-67-9)	0.036 (2)	14 (1)
Dimethyl phthalate (CAS 131-11-3)	0.047 (2)	28 (1)
Di-n-butyl phthalate (CAS 84-74-2)	0.057 (2)	28 (1)
1,4-Dinitrobenzene (CAS 100-25-4)	0.32 (2)	2.3 (1)
4,6-Dinitro-o-cresol (CAS 534-52-1)	0.28 (2)	160 (1)
2,4-Dinitrophenol (CAS 51-28-5)	0.12 (2)	160 (1)
2,4-Dinitrotoluene (CAS 121-14-2)	0.32 (2)	140 (1)
2,6-Dinitrotoluene (CAS 606-20-2)	0.55 (2)	28 (1)
Di-n-octyl phthalate (CAS 117-84-0)	0.017 (2)	28 (1)
Di-n-propylnitrosoamine (CAS 621-64-7)	0.40 (2)	14 (1)
Diphenylamine (CAS 122-39-4)	0.52 (2)	NA
1,2-Diphenyl hydrazine (CAS 122-66-7)	0.087 (2)	NA
Diphenylnitrosamine (CAS 621-64-7)	0.40 (2)	NA
1,4-Dioxane (CAS 123-91-1)	0.12 (2)	170 (1)
Disulfoton (CAS 298-04-4)	0.017 (2)	6.2 (1)
Endosulfan I (CAS 939-98-8)	0.023 (2)	0.066 (1)
Endosulfan II (CAS 33213-6-5)	0.029 (2)	0.13 (1)
Endosulfan sulfate (CAS 1031-07-8)	0.029 (2)	0.13 (1)
Endrin (CAS 72-20-8)	0.0028 (2	0.13 (1)
Endrin aldehyde (CAS 7421-93-4)	0.025 (2)	0.13 (1)
Ethyl acetate (CAS 141-78-6)	0.34 (2)	33 (1)
Ethyl cyanide (CAS 107-12-0)	0.24 (2)	360 (1)
Ethyl benzene (CAS 100-41-4)	0.057 (2)	6.0 (1)
Ethyl ether (CAS 60-29-7)	0.12 (2)	160 (1)
bis(2-Ethylhexyl) phthalate (CAS 117-81-7)	0.28 (2)	28 (1)
Ethyl methacrylate (CAS 97-63-2)	0.14 (2)	160 (1)
Ethylene oxide (CAS 75-21-8)	0.12 (2)	NA
Famphur (CAS 52-85-7)	0.017 (2	15 (1)
Fluoranthene (CAS 206-44-0)	0.068 (2)	8.2 (1)
Fluorene (CAS 86-73-7)	0.059 (2)	4.0 (1)
Fluorotrichloromethane (CAS 75-69-4)	0.020 (2)	33 (1)
Heptachlor (CAS 76-44-8)	0.0012 (2)	0.066 (1)
Heptachlor epoxide (CAS 1024-57-3)	0.016 (2)	0.066 (1)
Hexachlorobenzene (CAS 118-74-1)	0.055 (2)	37 (1)
Hexachlorobutadiene (CAS 87-68-3)	0.055 (2)	28 (1)
Hexachlorocycpentadiene (CAS 77-47-4)	0.057 (2)	3.6 (1)
Hexachlorodibenzo-furans	0.000063 (2)	0.001 (1)
Hexchlorodibenzo-p-dioxins	0.000063 (2)	0.001 (1)
Hexchloroethane (CAS 67-72-1)	0.055 (2)	28 (1)
Hexachloropropene (CAS 1888-71-7)	0.035 (2)	28 (1)
Indeno(1,2,3,-c,d)pyrene (CAS 193-39-5)	0.0055 (2)	8.2 (1)
Iodomethane (CAS 74-88-4)	0.019 (2)	65 (1)
Isobutanol (CAS 78-83-1)	5.6 (2)	170 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
Isodrin (CAS 465-73-6)	0.021 (2)	0.066 (1)
Isosafrole (CAS 120-58-1)	0.081 (2)	2.6 (1)
Kepone (CAS 143-50-8)	0.0011 (2)	0.13 (1)
Methacrylonitrile (CAS 126-98-7)	0.24 (2)	84 (1)
Methanol (CAS 67-56-1)	5.6 (2)	NA
Methapyrilene (CAS 91-80-5)	0.081 (2)	1.5 (1)
Methoxychlor (CAS 72-43-5)	0.25 (2)	0.18 (1)
3-Methylcholanthrene (CAS 56-49-5)	0.0055 (2)	15 (1)
4,4-Methylene-bis-(2-chloroaniline) (CAS 101-14-4) (CAS 101-14-4)	0.50 (2)	35 (1)
Methylene chloride (CAS 75-09-2)	0.089 (2)	33 (1)
Methyl ethyl ketone (CAS 78-93-3)	0.28 (2)	36 (1)
Methyl isobutyl ketone (CAS 108-10-1)	0.14 (2)	33 (1)
Methyl methacrylate (CAS 80-62-6)	0.14 (2)	160 (1)
Methyl methansulfonate (CAS 66-27-3)	0.018 (2)	NA
Methyl parathion (CAS 298-00-0)	0.014 (2)	4.6 (1)
Naphthalene (CAS 91-20-3)	0.059 (2)	3.1 (1)
2-Naphtylamine (CAS 91-59-8)	0.52 (2)	NA
p-Nitroaniline (CAS 100-01-6)	0.028 (2)	28 (1)
Nitrobenzene (CAS 96-95-3)	0.068 (2)	14 (1)
5-Nitro-o-toluidine (CAS 99-55-8)	0.32 (2)	28 (1)
4-Nitrophenol (CAS 100-02-7)	0.12 (2)	29 (1)
N-Nitrosodiethylamine (CAS 55-18-5)	0.40 (2)	28 (1)
N-Nitrosodimethylamine (CAS 62-75-9)	0.40 (2)	NA
N-Nitroso-di-n-butylamine (CAS 924-16-3)	0.40 (2)	17 (1)
N-Nitrosomethylethylamine (CAS 10595-95-6)	0.40 (2)	2.3 (1)
N-Nitrosomorpholine (CAS 59-89-2)	0.40 (2)	2.3 (1)
N-Nitrosopiperidine (CAS 100-75-4)	0.013 (2)	35 (1)
N-Nitrosopyrrolidine (CAS 930-55-2)	0.013 (2)	35 (1)
Parathion (CAS 56-38-2)	0.014 (2)	4.6 (1)
Pentachlorobenzene (CAS 608-93-5)	0.055 (2)	37 (1)
Pentachlorodibenzo-furans	0.000063 (2)	0.001 (1)
Pentachlorodibenzo-p-dioxins	0.000063 (2)	0.001 (1)
Pentachloronitrobenzene (CAS 82-68-8)	0.055 (2)	4.8 (1)
Pentachlorophenol (CAS 87-86-5)	0.089 (2)	7.4 (1)
Phenacetin (CAS 62-44-2)	0.081 (2)	16 (1)
Phenanthrene (CAS 85-01-8)	0.059 (2)	3.1 (1)
Phenol (CAS 108-95-2)	0.039 (2)	6.2 (1)
Phorate (CAS 298-02-2)	0.021 (2)	4.6 (1)
Phthalicanhydridr (CAS 85-44-9)	0.069 (2)	NA
Pronamide (CAS 23950-58-5)	0.093 (2)	1.5 (1)
Pyrene (CAS 129-00-0)	0.067 (2)	8.2 (1)
Pyridine (CAS 110-86-1)	0.014 (2)	16 (1)
Safrole (CAS 94-59-7)	0.081 (2)	22 (1)
Silvex (2,4,5-TP) (CAS 93-72-1)	0.72 (2)	7.9 (1)
2,4,5-T (CAS 93-76-5)	0.72 (2)	7.9 (1)
1,2,4,5,-Tetrachlorobenzene (CAS 95-94-3	0.055 (2)	19 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
Tetrachlorodibenzo-furans	0.000063 (2)	0.001 (1)
Tetrachlorodibenzo-p-dioxins	0.000063 (2)	0.001 (1)
1,1,1,2-Tetrachloroethane (CAS 630-20-6)	0.057 (2)	42 (1)
1,1,2,2-Tetrachloroethane (CAS 70-34-6)	0.057 (2)	42 (1)
Tetrachloroethene (CAS 127-18-4)	0.056 (2)	5.6 (1)
2,3,4,6-Tetrachlorophenol (CAS 58-90-2)	0.030 (2)	37 (1)
Toluene (CAS 108-88-3)	0.080 (2)	28 (1)
Toxaphene (CAS 8001-35-1)	0.0095 (2)	1.3 (1)
1,2,4-Trichlorobenzene (CAS 120-82-1)	0.055 (2)	19 (1)
1,1,1-Trichloroethane (CAS 71-55-6)	0.054 (2)	5.6 (1)
1,1,2-Trichloroethane (CAS 79-00-5)	0.054 (2)	5.6 (1)
Trichloroethylene (CAS 79-01-6)	0.054 (2)	5.6 (1)
2,4,5-Trichlorophenol (CAS 95-95-4)	0.18 (2)	37 (1)
2,4,6-Trichlorophenol (CAS 88-06-2)	0.035 (2)	37 (1)
1,2,3-Trichloropropane (CAS 96-18-4)	0.85 (2)	28 (1)
1,1,2-Trichoro-1,2,2-trifloro-ethane (CAS 76-13-1)	0.057 (2)	28 (1)
Tris(2,3-dibromopropyl (CAS 126-72-7)	0.11 (2)	NA
Vinyl chloride (CAS 75-01-4)	0.27 (2)	33 (1)
Xylene(s)	0.32 (2)	28 (1)
Cyanides (total) (CAS 57-12-5)	1.2 (2)	1.8 (1)
Fluoride (CAS 16964-48-8)	35 (2)	NA
Sulfide (CAS 8496-25-8)	14 (2)	NA
Antimony (CAS 7440-36-0)	1.9 (2)	NA
Arsenic (CAS 7440-38-2)	1.4 (2)	NA
Barium (CAS 7440-39-3)	1.2 (2)	NA
Beryllium (CAS 7440-41-7)	0.82 (2)	NA
Cadmium (CAS 7440-43-9)	0.20 (2)	NA
Chromium (total) (CAS 7440-47-32)	0.37	NA
Copper (CAS 7440-50-8)	1.3 (2)	NA
Lead (CAS 7439-92-1)	0.28 (2)	NA
Mercury (CAS 7439-97-6)	0.15 (2)	NA
Nickel (CAS 7440-02-0)	0.55 (2)	NA
Selenium (CAS 7782-49-2)	0.82 (2)	NA
Silver (CAS 7440-22-4)	0.29 (2)	NA
Thallium (CAS 7440-28-0)	1.4 (2)	NA
Vanadium (CAS 7440-62-2)	0.042 (2)	NA
Zinc (CAS 7440-66-6)	1.0 (2)	NA
K001*		
Naphthalene (CAS 91-20-3)	0.031 (1)	1.5 (1)
Pentachlorophenol (CAS 87-86-5)	0.18 (1)	7.4 (1)
Penanthrene		
Pyrene (CAS 85-01-8)	0.031 (1)	1.5 (1)
Toluene (CAS 129-00-0)	0.028 (1)	1.5 (1)
Xylenes (total) (CAS 108-88-3)	0.028 (1)	28 (1)
Lead	0.032 (1)	33
(CAS 7439-92-1)	0.037	NA
K002*, K003*, and K004*		

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
Chromium (total) (CAS 7440-47-32)	0.9 (2)	NA
Lead (CAS 7439-92-1)	3.4 (2)	NA
K005*		
Chromium (total) (CAS 7440-47-32)	0.9 (2)	NA
Lead (CAS 7439-92-1)	3.4 (2)	NA
Cyanides (total) (CAS 57-12-5)	0.74 (2)	Reserved
K006*		
Chromium (total) (CAS 7440-47-32)	0.9 (2)	NA
Lead (CAS 7439-92-1)	3.4 (2)	NA
K007*		
Chromium (total) (CAS 7440-47-32)	0.9 (2)	NA
Lead (CAS 7439-92-1)	3.4 (2)	NA
Cyanides (total) (CAS 57-12-5)	0.74 (2)	
K008*		
Chromium (total) (CAS 7440-47-32)	0.9 (2)	NA
Lead (CAS 7439-92-1)	3.4 (2)	NA
K009		
Chloroform (CAS 67-66-3)	0.1	6.0 (1)
K010		
Chloroform (CAS 67-66-3)	0.1	6.0 (1)
K011, K013, and K014		
Acetonitrile (CAS 75-05-8)	38	1.8 (1)
Acrylonirile (CAS 107-13-1)	0.06	1.4 (1)
Acrylamide (CAS 79-06-1)	19	23 (1)
Benzene (CAS 71-34-2)	0.02	0.03 (1)
Cyanide (total) (CAS 57-12-5)	21	57
K015*		
Anthracene (CAS 120-12-7)	1.0	3.4 (1)
Benzal chloride (CAS 98-87-3)	0.28	6.2 (1)
Sum of Benso(b) fluoranthene (CAS 205-99-2) and Benzo(k)fluoranthene (CAS 207-08-9)	0.029	3.4 (1)
Phenanthrene (CAS 85-01-8)	0.27	3.4 (1)
Toluene (CAS 108-88-3)	0.15	6.0 (1)
Chromium (total) (CAS 7440-47-32)	0.32	NA
Nickel (CAS 7440-02-0)	0.44	NA
K016		
Hexachlorobenzene (CAS 118-74-1)	0.033 (1)	28 (1)
Hexachlorobutadiene (CAS 87-68-3)	0.007 (1)	5.6 (1)
Hexachlorocyclopentadiene (CAS 77-47-4)	0.007 (1)	5.6 (1)
Hexachloroethane (CAS 67-72-1)	0.033 (1)	28 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
Tetrachloroethene (CAS 127-18-4)	0.007 (1)	6.0 (1)
K017		
1,2-Dichloropropane (CAS 78-87-5)	0.85 (1,2)	18 (1)
1,2,3-Trichloropropane (CAS 96-16-4)	0.85 (1,2)	28 (1)
Bis(2-chloroethyl)ether (CAS 111-44-4)	0.033 (1,2)	7.2 (1)
K018		
Chloroethane (CAS 75-00-3)	0.007 (1)	6.0 (1)
Chloromethane (CAS 74-87-3)	0.007 (1)	NA
1,1-Dichloroethane (CAS 75-34-3)	0.007 (1)	6.0 (1)
1,2-Dichloroethane (CAS 107-06-2)	0.007 (1)	6.0 (1)
Hexachlorobenzene (CAS 118-74-1)	0.033 (1)	28 (1)
Hexachlorobutadiene (CAS 87-68-3)	0.007 (1)	5.6 (1)
Hexachloroethane (CAS 67-72-1)	NA	28 (1)
Pentachloroethane (CAS 76-01-7)	0.007 (1)	5.6 (1)
1,1,1-Trichloroethane (CAS 71-55-6)	0.007 (1)	6.0 (1)
K019		
Bis(2-chloroethyl)ether (CAS 111-44-4)	0.007 (1)	5.6 (1)
Chlorobenzene (CAS 108-90-7)	0.006 (1)	6.0 (1)
Chloroform (CAS 67-66-3)	0.007 (1)	6. 0 (1)
p-Dichloronbenzene (CAS 106-46-7)	0.008 (1)	NA
1,2-Dichloroethane (CAS 107-06-2)	0.007 (1)	6.0 (1)
Fluorene (CAS 86-73-7)	0.007 (1)	NA
Hexachloroethane (CAS 67-72-1)	0.033 (1)	28 (1)
Naphthalene (CAS 91-20-3)	0.007 (1)	5.6 (1)
Phenantrene (CAS 85-01-8)	0.007 (1)	5.6 (1)
1,2,4,5-Tetrachlorobenzene (CAS 95-94-3)	0.017 (1)	NA
Tetrachloroethene (CAS 127-18-4)	0.007 (1)	6.0 (1)
1,2,4-Trichlorobenzene (CAS 120-82-1)	0.023 (1)	19 (1)
1,1,1-Trichloroethane (CAS 71-55-6)	0.007 (1)	6.0 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (µg/kg) Notes
K020		
1,2-Dichloroethane (CAS 107-06-2)	0.007 (1)	6.0 (1)
1,1,2,2-Tetrachloroethane (CAS 79-34-6)	0.007 (1)	5.6 (1)
Tetrachloroethene (CAS 127-18-4)	0.007 (1)	6.0 (1)
K021*		
Chloroform (CAS 67-66-3)	0.046 (2)	6.2 (1)
Carbon tetrachloride (CAS 56-23-5)	0.057 (2)	6.2 (1)
Antimony (CAS 7440-36-0)	0.60 (2)	NA (1)
K022*		
Toluene (CAS 108-88-3)	0.080 (2)	0.034 (1)
Acetophenone (CAS 96-86-2)	0.010	19 (1)
Diphenylamine (CAS 22-39-4)	0.52 (2)	NA
Diphenylnitrosamine (CAS 86-30-60)	0.40 (2)	NA
Sum of Diphenylamine and Diphenylnitrosamine	NA	13 (1)
Phenol (CAS 108-95-2)	0.039	12 (1)
Chromium (total) (CAS 7440-47-32)	0.35	NA
Nickel (CAS 7440-02-0)	0.47	NA
K023 and K024		
Phthalic anhydride (measured as Phthalic acid) (CAS 85-44-9)	0.54 (1)	28 (1)
K028*		
1,1-Dichloroethane (CAS 75-34-3)	0.007 (1)	6.0 (1)
trans-1,2-Dichloroethane	0.033 (1)	6.0 (1)
Hexachlorobutadiene (CAS 87-68-3)	0.007 (1)	5.6 (1)
Hexachloroethane (CAS 67-72-1)	0.033 (1)	28 (1)
Pentachloroethane (CAS 76-01-7)	0.033 (1)	5.6 (1)
1,1,1,2-Tetrachloroethane (CAS 630-20-6)	0.007 (1)	5.6 (1)
1,1,2,2-Tetrachloroethane (CAS 79-34-6)	0.007 (1)	5.6 (1)
1,1,1-Trichlorethane (CAS 71-55-6)	0.007 (1)	6.0 (1)
1,1,2-Trichlorethane (CAS 79-00-5)	0.007 (1)	6.0 (1)
Tetrachloroethylene (CAS 127-18-4)	0.007 (1)	6.0 (1)
Cadmium (CAS 7440-43-9)	6.4	NA
Chromium (total) (CAS 7440-47-32)	0.35	NA
Lead (CAS 7439-92-1)	0.037	NA
Nickel (CAS 7440-02-0)	0.47	NA
K029		
Chloroform (CAS 67-66-3)	0.046	6.0 (1)
1,2-Dichloroethane (CAS 107-06-2)	0.21	6.0 (1)
1,1-Dichloroethylene (CAS 75-35-4)	0.025	6.0 (1)
1,1,1-Trichoroethane (CAS 71-55-6)	0.054	6.0 (1)
Vinyl chloride (CAS 75-01-4)	0.27	6.0 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
K030		
o-Dichlorobenzene (CAS 95-50-1)	0.008 (1)	NA
p-Dichlorobenzene (CAS 106-46-7)	0.008 (1)	NA
Hexachlorobutadiene (CAS 87-68-3)	0.007 (1)	5.6 (1)
Hexachloroethane (CAS 67-72-1)	0.033 (1)	28 (1)
Hexachloropropene (CAS 1888-71-7)	NA	19 (1)
Pentachlorobenzene (CAS 608-93-5)	NA	28 (1)
Pentachloroethane (CAS 76-01-7)	0.007 (1)	5.6 (1)
1,2,4,5-Tetrachlorobenzene (CAS 76-01-7)	0.017	14 (1)
Tetrachloroethane (CAS 127-18-4)	0.007 (1)	6.0 (1)
1,2,4-Trichlorobenzene (CAS 120-82-1)	0.023 (1)	19 (1)
K031*		
Arsenic (CAS 7440-38-2)	0.79	NA
K032		
Hexachloropentadiene (CAS 77-47-4)	0.057 (2)	2.4 (1)
Chlordane (CAS 57-74-9)	0.0033 (2)	0.26 (1)
Heptachlor (CAS 76-44-8)	0.012 (2)	0.066 (1)
Heptachlor epoxide (CAS 1024-57-3)	0.016 (2)	0.066 (1)
K033 and K034		
Hexachlorocylopentadiene (CAS 77-47-4)	0.057 (2)	2.4 (1)
K035		
Acenapthene (CAS 83-32-9)	NA	3.4 (1)
Anthracene (CAS 120-12-7)	NA	3.4 (1)
Benz(a)anthracene (CAS 56-55-3)	0.059 (2)	3.4 (1)
Benzo(a)pyrene (CAS 5-32-8)	NA	3.4 (1)
Chrysene (CAS 218-01-9)	0.059 (2)	3.4 (1)
Dibenz(a,h)anthracene (CAS 53-70-3)	NA	3.4 (1)
Fluoranthene (CAS 206-44-0)	0.068 (2)	3.4 (1)
Fluorene (CAS 86-73-7)	NA	3.4 (1)
Indeno(1,2,3-cd)pyrene (CAS 193-39-5)	NA	3.4 (1)
Cresols (m-and p-isomers)	0.77 (2)	NA
Naphthalene (CAS 91-20-3)	0.059 (2)	3.4 (1)
o-cresol (CAS 95-48-7)	0.11 (2)	NA
Phenantrene (CAS 85-01-8)	0.059 (2)	3.4 (1)
Phenol (CAS 108-95-2)	0.039	NA
Pyrene (CAS 129-00-0)	0.067 (2)	8-2 (1)
K036		
Disulfoton (CAS 298-04-4)	0.025 (2)	0.1 (1)
K037		
Disulfoton (CAS 298-04-4)	0.025 (2)	0.1 (1)
Toluene (CAS 108-88-3)	0.080 (2)	28 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
K038		
Phorate (CAS 298-02-2)	0.025 (2)	0.1 (1)
K040		
Phorate (CAS 298-02-2)	0.025 (2)	0.1 (1)
K041		
Toxaphene (CAS 8001-35-1)	0.0095 (2)	2.6 (1)
K042		
1,2,4,5-Tetrachlorobenzene (CAS 95-94-3)	0.055 (2)	4.4 (1)
o-Dichlorobenzene (CAS 95-50-1)	0.088 (2)	4.4 (1)
p-Dichlorobenzene (CAS 106-46-7)	0.090 (2)	4.4 (1)
Pentachlorobenzene (CAS 608-93-5)	0.055 (2)	4.4 (1)
1,2,4-Trichlorobenzene (CAS 120-82-1)	0.055 (2)	4.4 (1)
K043		
2,4-Dichlorophenol (CAS 120-83-2)	0.049 (1)	0.38 (1)
2,6-Dichlorophenol (CAS 87-65-0)	0.013 (1)	0.34 (1)
2,4,5-Trichlorophenol (CAS 95-95-4)	0.016 (1)	8.2 (1)
2,4,6-Trichlorophenol (CAS 88-06-2)	0.039 (1)	7.6 (1)
Tetrachlorophenols (total)	0.018 (1)	0.68 (1)
Pentachlorophenol (CAS 87-86-5)	0.22 (1)	1.9 (1)
Tetrachloroethene (CAS 79-01-6)	0.006 (1)	1.7 (1)
Hexachlorodibenzo-p-dioxins	0.001 (1)	0.001 (1)
Hexachlorodibenzo-furans	0.001 (1)	0.001 (1)
Pentachlorodibenzo-p-dioxins	0.001 (1)	0.001 (1)
Pentachlorodibenzo-furans	0.001 (1)	0.001 (1)
Tetrachlorodibenzo-p-dioxins	0.001 (1)	0.001 (1)
Tetrachlorodibenzo-furans	0.001 (1)	0.001 (1)
K046*		
Lead (CAS 7439-92-1)	0.037	NA
K048*		
Benzene (CAS 71-43-2)	0.011 (1)	14 (1)
Benzo(a)pyrene (CAS 50-32-8)	0.047 (1)	12 (1)
Bis(2-ethylhexy)phthalate (CAS 117-81-7)	0.043 (1)	7.3 (1)
Chrysene (CAS 218-01-9)	0.043 (1)	15 (1)
Di-n-butyl phthalate (CAS 84-74-2)	0.06 (1)	3.6 (1)
Ethylbenzene	0.011 (1)	14 (1)
Fluorene (CAS 100-41-4)	0.005 (1)	NA
Naphthalene (CAS 86-73-7)	0.033 (1)	42 (1)
Phenanthrene (CAS 91-20-3)	0.039 (1)	34 (1)
Phenol (CAS 85-01-8)	0.047 (1)	3.6 (1)
Pyrene (CAS 108-95-2)	0.045 (1)	36 (1)
To' .ne (CAS 129-00-0)	0.011 (1)	14 (1)
Xylene(s) (108-88-3)		

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
Cyanides(total)	0.011 (1)	22 (1)
Chromium(total) (CAS 57-12-5)	0.28 (1)	1.8 (1)
Lead (CAS 7440-47-32)	0.2	NA
(CAS 7439-92-1)	0.037	NA
K049*		
Anthracene (CAS 120-12-7)	0.039 (1)	28 (1)
Benzene (CAS 71-43-2)	0.011 (1)	14 (1)
Benzo(a)pyrene (CAS 50-32-8)	0.047 (1)	12 (1)
Bis(2-ethylhexyl)phthalate (CAS 117-81-7)	0.043 (1)	7.3 (1)
Carbon disulfide (CAS 75-15-0)	0.011 (1)	NA
Chrysene (CAS 2218-01-9)	0.043 (1)	15 (1)
2,4-Dimethylphenol (CAS 105-67-9)	0.033 (1)	NA
Ethylbenzene		
Naphthalene (CAS 100-41-4)	0.011 (1)	14 (1)
Phenanthrene (CAS 91-20-3)	0.033 (1)	42 (1)
Phenol (CAS 85-01-8)	0.039 (1)	34 (1)
Pyrene (CAS 108-95-2)	0.047 (1)	3.6 (1)
Toluene (CAS 129-00-0)	0.045 (1)	36 (1)
Xylene(s) (CAS 108-88-3)	0.011 (1)	14 (1)
Cyanides(total)	0.011 (1)	22 (1)
Chromium(total) (CAS 57-12-5)	0.028 (1)	1.8 (1)
Lead (CAS 7440-47-32)	0.2	NA
(CAS 7439-92-1)	0.037 (1)	NA
K050*		
Benzo(a)pyrene (CAS 50-32-8)	0.047 (1)	12
Phenol (CAS 108-95-2)	0.047 (1)	3.6 (1)
Cyanides(total) (CAS 57-12-5)	0.028 (1)	1.8 (1)
Chromium(total) (CAS 7440-47-32)	0.2	NA
Lead (CAS 7439-92-1)	0.037	NA
K051*		
Acenaphthene (CAS 208-96-8)	0.05 (1)	NA
Anthracene (CAS 120-12-7)	0.039 (1)	28 (1)
Benzene (CAS 71-43-2)	0.011 (1)	14 (1)
Benzo(a)anthracene (CAS 50-32-8)	0.043 (1)	20 (1)
Benzo(a)pyrene		
Bis(2-ethylhexyl)phthalate (117-81-7)	0.047 (1)	12 (1)
(CAS 75-15-0)	0.043 (1)	7.3 (1)
Chrysene		
Di-n-butyl phthalate (CAS 2218-01-09)		
Ethylbenzene (CAS 105-67-9)	0.043 (1)	15 (1)
Fluorence	0.06 (1)	3.6 (1)
Naphthalene (CAS 100-41-4)		
Phenanthrene (CAS 86-73-7)	0.011 (1)	14 (1)
Phenol (CAS 91-20-3)	0.05 (1)	NA
Pyrene (CAS 85-01-8)	0.033 (1)	42 (1)
Toluene (CAS 108-95-2)	0.039 (1)	34 (1)
Xylene(s) (CAS 129-00-0)	0.047 (1)	3.6 (1)
Cyanides(total) (CAS 108-88-3)	0.045 (1)	36 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
Chromium(total)	0.011 (1)	14 (1)
Lead (CAS 57-12-5)	0.11 (1)	22 (1)
(CAS 7440-47-32)	0.028 (1)	1.8 (1)
(CAS 7439-92-1)	0.2	NA
	0.037	NA
K052*		
Benzene (CAS 71-43-2)	0.011 (1)	14 (1)
Benzo(a)pyrene (CAS 50-32-8)	0.047 (1)	12 (1)
o-Cresol (CAS 95-48-7)	0.011 (1)	6.2 (1)
p-Cresol (CAS 106-44-5)	0.011 (1)	6.2 (1)
2,4-Dimethylphenol (CAS 105-67-9)	0.033 (1)	NA
Ethylbenzene		
Naphthalene (CAS 100-41-4)	0.011 (1)	14 (1)
Phenanthrene (CAS 91-20-3)	0.033 (1)	42 (1)
Phenol (CAS 85-01-8)	0.039 (1)	34 (1)
Toluene (CAS 108-95-2)	0.047 (1)	3.6 (1)
Xylenes (CAS 108-88-3)	0.011 (1)	14 (1)
Cyanides (total)	0.011 (1)	22 (1)
Chromium (total) (CAS 57-12-5)	0.28 (1)	1.8 (1)
Lead (CAS 7440-47-32)	0.2	NA
(CAS 7439-92-1)	0.037	NA
K060		
Benzene (CAS 71-43-2)	0.17 (1,2)	0.071 (1)
Benzo(a)pyrene) (CAS 50-32-8)	0.035 (1,2)	3.6 (1)
Naphthalene (CAS 91-20-3)	0.028 (1,2)	3.4 (1)
Phenol (CAS 108-95-2)	0.042 (1,2)	3.4 (1)
Cyanides(total) (CAS 57-12-5)	1.9	1.2
K061*		
Cadmium (CAS 7440-43-9)	1.61	NA
Chromium(total) (CAS 7440-47-32)	0.32	NA
Lead (CAS 7439-92-1)	0.51	NA
Nickel (CAS 7440-02-0)	0.44	NA
K062*		
Chromium(total) (CAS 7440-47-32)	0.32	NA
Lead (CAS 7439-92-1)	0.04	NA
Nickel (CAS 7440-02-0)	0.44	NA
K069***		
Cadmium (CAS 7440-43-9)	1.6	NA
Lead (CAS 7439-92-1)	0.51	NA
K071*		
Mercury (CAS 7439-97-6)	0.030	NA
K073		
Carbon tetrachloride (CAS 56-23-5)	0.057 (2)	6.2 (1)
Chloroform (CAS 67-66-3)	0.046 (2)	6.2 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
Hexachloroethane (CAS 67-72-1)	0.055 (2)	30 (1)
Tetrachloroethene (CAS 127-18-4)	0.056 (2)	6.2 (1)
1,1,1-Trichloroethane (CAS 71-55-6)	0.054 (2)	6.2 (1)
K083*		
Benzene (CAS 71-34-2)	0.14 (2)	6.6 (1)
Aniline (CAS 62-53-3)	0.81	14 (1)
Diphenylamine (CAS 22-39-4)	0.52 (2)	NA
Diphenynitrosamine (CAS 86-30-6)	0.40 (2)	NA
Sum of diphenylamine and Diphenyl-nitrosamine	NA	14 (1)
Nitrobenzene (CAS 98-95-3)	0.068 (2)	14 (1)
Phenol (CAS 108-95-2)	0.039 (2)	5.6 (1)
Cyclohexanone (CAS 108-94-1)	0.36	NA
Nickel (CAS 7440-02-0)	0.47	NA
K084		
Arsenic (CAS 7440-38-2)	0.79	NA
K085		
Benzene (CAS 71-43-2)	0.14 (2)	4.4 (1)
Chlorobenzene (CAS 108-90-7)	0.057 (2)	4.4 (1)
o-Dichlorobenzene (CAS 95-50-1)	0.088 (2)	4.4 (1)
m-Dichlorobenzene (CAS 541-73-1)	0.036 (2)	4.4 (1)
p-Dichlorobenzene (CAS 106-46-7)	0.090 (2)	4.4 (1)
1,2,4-Trichlorobenzene (CAS 120-82-1)	0.055 (2)	4.4 (1)
1,2,4,5-Tetrachlorobenzene (CAS 95-94-3)	0.055 (2)	4.4 (1)
Pentachlorobenzene (CAS 608-93-5)	0.055 (2)	4.4 (1)
Hexachlorobenzene (CAS 118-74-1)	0.055 (2)	4.4 (1)
Aroclor 1016 (CAS 12674-11-2)	0.013 (2)	0.92 (1)
Aroclor 1221 (CAS 11104-28-2)	0.014 (2)	0.92 (1)
Aroclor 1232 (CAS 11141-16-5)	0.013 (2)	0.92 (1)
Aroclor 1242 (CAS 53469-21-9)	0.017 (2)	0.92 (1)
Aroclor 1248 (CAS 12672-29-6)	0.013 (2)	0.92 (1)
Aroclor 1254 (CAS 11097-69-1)	0.014 (2)	1.8 (1)
Aroclor 1260 (CAS 11096-82-5)	0.014 (2)	1.8 (1)
K086*		
Acetone (CAS 67-64-1)	0.28	160 (1)
Acetophenone (CAS 96-86-2)	0.010	9.7 (1)
Bis(2-ethylhexyl)phthalate (CAS 117-81-7)	0.28 (2)	28 (1)
n-Butyl alcohol (CAS 71-36-3)	5.6	2.6 (1)
Butylbenzylphthalate (CAS 85-68-7)	0.017 (2)	7.9 (1)
Cycloghexanone (CAS 108-94-1)	0.36	NA
1,2-Dichlorobenzene (CAS 95-50-1)	0.088	6.2 (1)
Diethyl phthalate (CAS 84-66-2)	0.20 (2)	28 (1)
Dimethylphthalate (CAS 131-11-3)	0.047 (2)	28 (1)
Di-n-buthylphthalate (CAS 84-74-2)	0.057 (2)	28 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
Di-n-octylphthalate (CAS 117-84-0)	0.017 (20	28 (1)
Ethyl acetate (CAS 141-78-6)	0.34 (2)	33 (1)
Ethylbenzene (CAS 100-41-4)	0.057 (2)	6.0
Methanol (CAS 67-56-1)	5.6 (2)	NA
Methyl isobutyl ketone (CAS 108-10-1)	0.14	33 (1)
Methyl ethyl ketone (CAS 78-93-3)	0.28	36 (1)
Methylene chloride (CAS 75-09-2)	0.089 (2)	33 (1)
Naphthalene (CAS 91-20-3)	0.059 (2)	3.1 (1)
Nitrobenzene (CAS 98-95-3)	0.068 (2)	14 (1)
Toluene (CAS 108-88-3)	0.080 (2)	28 (1)
1,1,1-Trichloroethane (CAS 71-55-6)	0.054 (2)	5.6 (1)
Trichloroethylene (CAS 79-01-6)	0.054 (2)	5.6 (1)
Xylenes (Total)	0.32 (2)	28 (1)
Cyanides (Total) (CAS 57-12-5)	1.9	1.5
Chromium (Total) (CAS 7440-47-32)	0.32	NA
Lead (CAS 7439-92-1)	0.037	NA
K087*		
Acenaphthalene (CAS 208-96-8)	0.028 (1)	3.4 (1)
Benzene (CAS 71-43-2)	0.014 (1)	0.071 (1)
Chrysene (CAS 218-01-9)	0.028 (1)	3.4 (1)
Fluoranthene (CAS 206-44-0)	0.028 (1)	3.4 (1)
Indeno(1,2,3-cd)pyrene (CAS 193-39-5)	0.028 (1)	3.4 (1)
Naphthalene		
Phenanthrene (CAS 91-20-3)	0.028 (10	3.4 (1)
Toluene (CAS 85-01-8)	0.028 (1)	3.4 (1)
Xylenes (CAS 108-88-3)	0.008 (1)	0.65 (1)
Lead	0.014 (1)	0.07 (1)
(CAS 7439-92-1)	0.037	NA
K093 and K094		
Phthalic anhydride (CAS 85-44-9) (measured as Phthalic acid)	0.54 (1)	28 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
K095		
1,1,1,2-Tetrachloroethane (CAS 630-20-6)	0.057	5.6 (1)
1,1,2,2-Tetrachloroethane (CAS 79-34-6)	0.057	5.6 (1)
Tetrachloroethene (CAS 127-18-4)	0.056	5.0 (1)
1,1,2-Trichloroethane (CAS 79-00-5)	0.054	6.0 (1)
Trichloroethylene (CAS 79-01-6)	0.054	5.6 (1)
Hexachloroethane (CAS 67-72-1)	0.055	28 (1)
Pentachloroethane (CAS 76-01-7)	0.055	5.6 (1)
K096		
1,1,1,2-Tetrachloroethane (CAS 630-20-6)	0.057	5.6 (1)
1,1,2,2-Tetrachloroethane (CAS 79-34-6)	0.057	5.6 (1)
Tetrachloroethene (CAS 127-18-4)	0.056	6.0 (1)
1,1,2-Trichloroethane (CAS 79-00-5)	0.054	6.0 (1)
Trichloroethene (CAS 79-01-6)	0.054	5.6 (1)
Trichloroethylene (CAS 79-01-6)	0.054	5.6 (1)
1,3-Dichlorobenzene (CAS 541-73-1)	0.036	5.6 (1)
Pentachloroethane (CAS 76-01-7)	0.055	5.6 (1)
1,2,4-Trichlorobenzene (CAS 120-82-1)	0.055	19 (1)
K097		
Hexachlorocyclopentadiene (CAS 77-47-4)	0.057 (2)	2.4 (1)
Chlordane (CAS 57-74-9)	0.0033 (2)	0.26 (1)
Heptachlor (CAS 76-44-8)	0.0012 (2)	0.066 (1)
Heptachlor epoxide (CAS 1024-57-3)	0.016 (2)	0.066 (1)
K098		
Toxaphene (CAS 8001-35-1)	0.0095 (2)	2.6 (1)
K099		
2,4-Dichlorophenoxyacetic acid (CAS 94-75-7)	1.0 (1)	1.0 (1)
Hexachlorodibenxo-p-dioxins	0.001 (1)	0.001 (1)
Hexachlorodibenzofurans	0.001 (1)	0.001 (1)
Pentachlorodibenzo-p-dioxins	0.001 (1)	0.001 (1)
Pentachlorodibenzofurans	0.001 (1)	0.001 (1)
Tetrachlorodibenzo-p-dioxins	0.001 (1)	0.001 (1)
Terachlorodibenzofurans	0.001 (1)	0.001 (1)
K100*		
Cadmium (CAS 7440-43-9)	1.6	NA
Chromium (CAS 7440-47-32)	0.32	NA
Lead (CAS 7439-92-1)	0.51	NA
K101		
o-Nitroaniline	0.27 (1)	14 (1)
Arsenic (CAS 7440-38-2)	0.79	NA
Cadmium (CAS 7440-43-9)	0.24	NA
Lead (CAS 7439-92-1)	0.17	NA
Mercury (CAS 7439-97-6)	0.082	NA

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
K102*		
o-Nitrophenol	0.028 (1)	13 (1)
Arsenic (CAS 7440-38-2)	0.79	NA
Cadmium (CAS 7440-43-9)	0.24	NA
Lead (CAS 7439-92-1)	0.17	NA
Mercury (CAS 7439-97-6)	0.082	NA
K103		
Aniline (CAS 62-53-3)	4.5	5.6 (1)
Benzene (CAS 71-34-2)	0.15	6.0 (1)
2,4-Dinitrophenol (CAS 51-28-5)	0.61	5.6 (1)
Nitrobenzene (CAS 98-95-3)	0.073	5.6 (1)
Phenol (CAS 108-95-2)	1.4	5.6 (1)
K104		
Aniline (CAS 62-53-3)	4.5	5.6 (1)
Benzene (CAS 71-43-2)	0.15	6.0 (1)
2,4-Dinitrophenol (CAS 51-28-5)	0.61	5.6 (1)
Nitrobenzene (CAS 98-95-3)	0.073	5.6 (1)
Phenol (CAS 108-95-2)	1.4	5.6 (1)
Cyanides (Total) (CAS 57-12-5)	2.7	1.8 (1)
K105		
Benzene (CAS 71-43-2)	0.14	4.4 (1)
Chlorobenzene (CAS 108-90-7)	0.057	4.4 (1)
o-Dichlorobenzene (CAS 95-50-1)	0.088	4.4 (1)
p-Dichlorobenzene (CAS 106-46-7)	0.090	4.4 (1)
2,4,5-Trichlorophenol (CAS 95-95-4)	0.18	4.4 (1)
2,4,6-Trichlorophenol (CAS 88-06-2)	0.035	4.4 (1)
2-Chlorophenol (CAS 95-57-8)	0.044	4.4 (1)
Phenol (CAS 108-95-2)	0.039	4.4 (1)
K106***		
Mercury (CAS 7439-97-6)	0.030	NA
K115*		
Nickel (CAS 7440-02-0)	0.47	NA
P004 (Aldrin)		
Aldrin (CAS 309-00-2)	0.21 (2)	0.066 (1)
P010* (Arsenic acid)		
Arsenic (CAS 7440-38-2)	0.79	NA
P011* (Arsenic pentoxide)		
Arsenic (CAS 7440-38-2)	0.79	NA
P012* (Arsenic trioxide)		

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
Arsenic (CAS 7440-38-2)	0.79	NA
P013* (Barium cyanide)		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amenable) (CAS 57-12-5)	0.1	9.1
P020 (Dinoseb)		
2-sec-Butyl-4,6-dinitrophenol (CAS 88-85-7)	0.066	2.5 (1)
P021 (Calcium cyanide)		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amenable) (CAS 57-12-5)	0.1	9.1
P022** (Carbon disulfide)		
Carbon disulfide (CAS 75-15-0)	0.014	NA
P024 (p-Chloroaniline)		
p-Chloroaniline (CAS 106-47-8)	0.46	16 (1)
P029 (Copper cyanide)		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amenable) (CAS 57-12-5)	0.1	9.1
P030 (Cyanides (soluble salts and complexes))		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amendable) (CAS 57-12-5)	0.1	9.1
P036* (Dichlorophenylarsine)		
Arsenic (CAS 7440-38-2)	0.79	NA
P037		
Dieldrin (CAS 60-57-1)	0.017 (2)	0.13 (1)
P038* (Diethylarsine)		
Arsenic (CAS 7440-38-2)	0.79	NA
P039		
Disulfoton (CAS 298-04-4)	0.017	0.1 (1)
P047		
4,6-Dinitro-o-cresol (CAS 534-52-1)	0.28	160 (1)
P048		
2,4-Dinitrophenil (CAS 51-28-5)	0.12 (2)	160 (1)
P050		
Endosulfan I (CAS 939-98-8)	0.023 (2)	0.066 (1)
Endosulfan II (CAS 33213-6-5)	0.029 (2)	0.13 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
Endosulfan sulfate (CAS 1031-07-8)	0.029 (2)	0.13 (1)
P051		
Endrin (CAS 72-20-8)	0.0028 (2)	0.13 (1)
Endrin aldehyde (CAS 7421-93-4)	0.025 (2)	0.13 (1)
P056**		
Fluoride (CAAS 16964-48-8)	35	NA
P059		
Heptachlor (CAS 76-44-8)	0.0012 (2)	0.066 (1)
Heptachlor epoxide (CAS 1024-57-3)	0.016 (2)	0.066 (1)
P060		
Isodrin (CAS 465-73-6)	0.021 (2)	0.066 (1)
P063 (Hydrogen cyanide)		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amenable) (CAS 57-12-5)	0.10	9.1
P065*** (Mercury fulminate)		
Mercury (CAS 7439-97-6)	0.030	NA
P071		
Methyl parathion (CAS 298-00-0)	0.025	0.1 (1)
P073* (Nickel carbonyl)		
Nickel (CAS 7440-02-0)	0.32	NA
P074* (Nickel cyanide)		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amenable) (CAS 57-12-5)	0.10	9.1
Nickel (CAS 7440-02-0)	0.44	NA
P077		
p-Nitroaniline (CAS 100-01-6)	0.028 (2)	28 (1)
P082**		
N-Nitrosodimethylamine (CAS 62-75-9)	0.40 (2)	NA
P089		
Parathion (CAS 56-38-2)	0.025	0.1 (1)
P092*** (Phenylmercury acetate)		
Mercury (CAS 7439-97-6)	0.030	NA
P094		
Phorate (CAS 298-02-2)	0.025	0.1 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
P097		
Famphur (CAS 52-85-7)	0.025	0.1 (1)
P098 (Potassium cyanide)		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amenable) (CAS 57-12-5)	0.10	9.1
P099* (Potassium silver cyanide)		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amenable) (CAS 57-12-5)	0.1	9.1
Silver (CAS 7440-22-4)	0.29	NA
P101		
Ethyl cyanide (Propanenitrite) (CAS 107-12-0)	0.24 (2)	360 (1)
P103* (Selemourea)		
Selenium (CAS 7782-49-2)	1.0 (2)	NA
P104* (Silver cyanide)		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amendable) (CAS 57-12-5)	0.10	9.1
Silver (CAS 7440-22-4)	0.29	NA
P106 (Sodium cyanide)		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amenable) (CAS 57-12-5)	0.10	9.1
P110*** (Tetraethyl lead)		
Lead (CAS 7439-92-1)	0.040	NA
P113** (Thallic oxide)		
Thallium (CAS 7440-28-0)	0.14 (2)	NA
P114* (Thallium selenite)		
Selenium (CAS 7782-49-2)	1.0	NA

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
P115** (Thallium(1)sulfate)		
Thallium (CAS 7440-28-0)	0.14 (2)	NA
P119** (Ammonia vandate)		
Vanadium (CAS 7440-62-2)	28 (2)	NA
P120** (Vanadium pentoxide)		
Vanadium (CAS 7440-62-2)	28 (2)	NA
P121 (Zinc cyanide)		
Cyanides (Total) (CAS 57-12-5)	1.9	110
Cyanides (Amenable) (CAS 57-12-5)	0.10	9.1
P123		
Toxaphene (CAS 8001-35-1)	0.0095 (2)	1.3 (1)
U002		
Acetone (CAS 67-64-1)	0.28	160 (1)
U003**		
Acetonitrile (CAS 75-05-8)	0.17	0.17
U004		
Acetophenone (CAS 98-86-2)	0.010 (1)	9.7 (1)
U005		
2-Acetylaminofluorene (CAS 53-96-3)	0.059 (2)	140 (1)
U009		
Acrylonitrile (CAS 107-13-1)	0.24 (2)	84 (1)
U012		
Aniline (CAS 62-53-3)	0.81	14 (1)
U018		
Benz(a)anthracene (CAS 56-55-3)	0.059 (2)	8.2 (1)
U019		
Benzene (CAS 71-34-2)	0.14 (2)	36 (1)
U022		
Benzo(a)pyrene (CAS 50-32-8)	0.061 (2)	8.2 (1)
U024		
Bis(2-chloroethoxy)methane (CAS 111-91-1)	0.036	7.2 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
U025 Bis(2-chloroethyl)ether (CAS 111-44-4)	0.033	7.2 (1)
U027 Bis(2-chloroisopropyl)ether (CAS 39638-32-9)	0.055 (2)	7.2 (1)
U028 Bis(2-ethylhexyl)phthalate (CAS 117-81-7)	0.54 (1)	28 (1)
U029 Bromomethane (Methyl bromide) (CAS 74-83-9)	0.11 (1)	15 (1)
U030 4-Bromophenyl phenyl ether (CAS 101-55-3)	0.055 (1)	15 (1)
U031 n-Butyl alcohol (CAS 71-36-3)	5.6	2.6
U032* (Calcium chromate) Chromium (Total) (CAS 7440-47-32)	0.32	NA
U036 Chlordane (alpha and gamma) (CAS 57-74-9)	0.033 (2)	0.13 (1)
U037 Chlorobenzene (CAS 108-90-7)	0.057 (2)	5.7 (1)
U038** Chlorobenzilate (CAS 510-15-6)	0.10 (2)	NA
U039 p-Chloro-m-cresol (CAS 59-50-7)	0.018 (2)	14 (1)
U042** 2-Chloroethylvinyl (CAS 110-75-8)	0.057	NA
U043 Vinyl chloride (CAS 75-01-4)	0.27 (2)	33 (1)
U044 Chloroform (CAS 67-66-3)	0.046 (2)	5.6 (1)
U045 Chloromethane (Methyl chloride) (CAS 74-87-3)	0.19 (2)	33 (1)
U047 2-Chloronaphalene (CAS 91-58-7)	0.055 (2)	5.6 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
U048		
2-Chlorophenol (CAS 95-57-8)	0.044 (2)	5.7 (1)
U050		
Chrysene (CAS 218-01-9)	0.059 (2)	8.2 (1)
U051* (Creosote)		
Napthalene (CAS 91-20-3)	0.031	1.5 (1)
Pentachlorophenol (CAS 87-86-5)	0.18	7.4 (1)
Phenanthrene		
Pyrene (CAS 85-01-8)	0.031	1.5 (1)
Toluene (CAS 129-00-0)	0.028	1.5 (1)
Xylenes (Total) (CAS 108-88-3)	0.028	28 (1)
Lead	0.032	33 (1)
(CAS 7439-92-1)	0.037	NA
U052 (Cresols - Cresylic acid)		
o-Cresol (CAS 95-48-7)	0.11 (2)	5.6 (1)
Cresols (m- and p- isomers)	0.77 (2)	3.2 (1)
U057**		
Cyclohexanone (CAS 108-94-1)	0.36	NA
U060 (DDD)		
o,p'-DDD (CAS 53-19-0)	0.023	0.087 (1)
o,p'-DDD (CAS 72-54-8)	0.023	0.087 (1)
U061 (DDT)		
o,p'-DDT (CAS 780-02-6)	0.0039 (2)	0.087 (1)
p,p'-DDT (CAS 50-29-3)	0.0039 (2)	0.087 (1)
o,p'-DDD (CAS 53-19-0)	0.023 (2)	0.087 (1)
p,p'-DDD (CAS 72-54-8)	0.023 (2)	0.087 (1)
o,p'-DDE (CAS 3424-82-6)	0.031 (2)	0.087 (1)
p,p'-DDE (CAS 72-55-9)	0.031 (2)	0.087 (1)
U063		
Dibenzo(a,h)anthracene (CAS 53-70-3)	0.055 (2)	8.2 (1)
U066		
1,2-Dibromo-3-chloropropane (CAS 96-12-8)	0.11 (2)	15 (1)
U067		
1,2-Dibromo ethane (Ethylene dibromide) (CAS 106-93-4)	0.028 (2)	15 (1)
U068		
Dibromethane (CAS 74-95-3)	0.11 (2)	15 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
U069 Di-n-butyl phathalate (CAS 84-74-2)	0.54 (1)	28 (1)
U070 o-Dichlorobenzene (CAS 95-50-1)	0.088 (2)	6.2 (1)
U071 m-Dichlorobenzene (CAS 541-73-1)	0.036	6.2 (1)
U072 p-Dichlorobenzene (CAS 104-46-7)	0.090 (2)	6.2 (2)
U075 Dichlorodifluoromethane (CAS 75-71-8)	0.23 (2)	7.2 (1)
U076 1,1-Dichloeoethane (CAS 75-34-3)	0.059 (2)	7.2 (1)
U077 1,2-Dichloroethane (CAS 107-06-2)	0.21 (2)	7.2 (1)
U078 1,1-Dichloroethylene (CAS 75-35-4)	0.025 (2)	33 (1)
U079 (1,2-Dichloroethylene) trans-1,2-Dichloroethylene (CAS 156-60-5)	0.054 (2)	33 (1)
U080 Methylene chloride (CAS 75-09-2)	0.089 (2)	33 (1)
U081 2,4-Dichlorophenol (CAS 120-83-2)	0.044 (2)	14 (1)
U082 2,6-Dichlorophenol (CAS 87-65-0)	0.044 (2)	14 (1)
U083 1,2-Dichlorophnol (CAS 78-87-5)	0.85 (2)	18 (1)
U084 (1,3-Dichloropropene) cis-1,3-Dichloropropylene (CAS 10061-01-5) trans-1,3-Dichloropropylene (CAS 10061-02-6)	 0.036 (2) 0.036 (2)	 18 (1) 18 (1)
U088 Diethyl phthalate (CAS 84-66-2)	0.54 (2)	28 (1)
U093** p-Dimethylaminoazobenzene (CAS 60-11-7)	0.13 (2)	NA

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
U101 2,4-Dimethylphenol (CAS 105-67-9)	0.036 (2)	14 (1)
U102 Dimethyl phthalate (CAS 131-11-3)	0.54 (1)	28 (1)
U105 2,4-Dinitrotoluene (CAS 121-14-2)	0.32 (2)	140 (1)
U106 2,6-Dinitrotoluene (CAS 606-20-2)	0.55 (2)	28 (1)
U107 Di-n-octyl phthalate (CAS 117-84-0)	0.54 (1)	28 (1)
U108 1,4-Dioxane (CAS 123-91-1)	0.12 (2)	170 (1)
U111 Di-n-propylnitrosoamine (CAS 621-64-7)	0.40 (2)	14 (1)
U112 Ethyl acetate (CAS 141-78-6)	0.34 (2)	33 (1)
U117 Ethyl ether (CAS 60-29-7)	0.12 (2)	160 (1)
U118 Ethyl methacrylate (CAS 97-63-2)	0.14 (2)	160 (1)
U120 Floranthene (CAS 206-44-0)	0.068 (2)	8.2 (1)
U121 Trichloromonofluoromethane (CAS 75-69-4)	0.020 (2)	33 (1)
U127 Hexachlorobutadiene (CAS 118-74-1)	0.055 (2)	37 (1)
U128 Hexachlorobutadiene (CAS 87-68-3)	0.055 (2)	28 (1)
U129 (Lindane) alpha-BHC (CAS 319-84-6) beta-BHC (CAS 319-85-7) Delta-BHC (CAS 319-86-8) gamma-BHC (Lindane) (CAS 58-89-9)	 0.00014 (2) 0.00014 (2) 0.023 (2) 0.0017 (2)	 0.66 (1) 0.66 (1) 0.66 (1) 0.66 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
U130 Hexachlorocyclopentadiene (CAS 77-47-7)	0.057 (2)	3.6 (1)
U131 Hexachloroethane (CAS 67-72-1)	0.055 (2)	28 (1)
U134** (Hydrogen floride) Floride (CAS 16964-48-8)	35	NA
U136* (Cacodylic acid) Arsenic (CAS 7440-38-2)	0.79	NA
U137* Indeno(1,2,3-c,d)pyrene (CAS 193-39-5)	0.0055 (2)	6.2 (1)
U138 Iodomethane (CAS 74-88-4)	0.19 (2)	65 (1)
U140 Isobutyl alchol (CAS 78-83-1)	5.6	170 (1)
U141 Isosafrole (CAS 120-58-1)	0.081	2.6 (1)
U142 Kepone (CAS 143-50-8)	0.0011	0.13 (1)
U144* (Lead acetate) Lead (CAS 7439-92-1)	0.040	NA
U145* (Lead phosphate) Lead (CAS 7439-92-1)	0.040	NA
U146* (Lead subacetate) Lead (CAS 7439-92-1)	0.040	NA
U151*** Mercury (CAS 7439-97-6)	0.030	NA

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
U152 Methacylonitrile (CAS 126-98-7)	0.24 (2)	84 (1)
U154 Methanol (CAS 67-56-1)	5.6	NA
U155 Methapyrilene (CAS 91-80-5)	0.081	1.5 (1)
U157 3-Methylchlolanthrene (CAS 56-49-5)	0.0055 (2)	15 (1)
U158 4,4'-Methylenebis(2-chloroaniline) (CAS 101-14-4)	0.50 (2)	35 (1)
U159 Methyl ethyl ketone (CAS 78-93-3)	0.28	36 (1)
U161 Methyl isobutyl ketone (CAS 108-10-1)	0.14	33 (1)
U162 Methyl methacrylate (CAS 60-62-6)	0.14	160 (1)
U165 Naphthalene (CAS 91-20-3)	0.059 (2)	3.1 (1)
U168** 2-Naphthylamine (CAS 91-59-8)	0.52 (2)	NA
U169 Nitrobenzene (CAS 98-95-3)	0.068 (2)	14
U170 4-Nitrophenol (CAS 100-02-7)	0.12 (2)	29 (1)
U172 n-Nirosodi-n-butylamine (CAS 924-16-3)	0.040 (2)	17 (1)
U174 n-Nitrosodiethylamine (CAS 55-18-5)	0.40 (2)	28 (1)
U179 n-Nitrosopipendien (CAS 100-75-4)	0.013 (2)	35 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
U180 n-Nitropyrrolidine (CAS 930-55-2)	0.013 (2)	35 (1)
U181 5-Nitro-o-toluidine (CAS 99-55-8)	0.32 (2)	28 (1)
U183 Pentachlorobenzene (CAS 608-93-5)	0.055 (2)	37 (1)
U185 Pentachloronitrobenzene (CAS 82-68-8)	0.055 (2)	4.8 (1)
U187 Phenacetin (CAS 62-44-2)	0.081	16 (1)
U188 Phenol (CAS 108-95-2)	0.039	6.2 (1)
U190 Phthalic anhydride (CAS 85-44-9) (measured as Phthalic acid)	0.54 (1)	28 (1)
U192 Pronamide (CAS 23950-58-5)	0.093	1.5 (1)
U196 Pyridine (CAS 110-86-1)	0.014 (2)	16 (1)
U203 Safrole (CAS 94-59-7)	0.081	22 (1)
U204* (Selenium dioxide) Selenium (CAS 7782-49-2)	1.0	NA
U205* (Selenium sulfide) Selenium (CAS 7782-49-2)	1.0	NA
U207 1,2,4,5-Tetrachlorobenzene (CAS 95-94-3)	0.055 (2)	19
U208 1,1,1,2-Tetrachoroethane (CAS 630-20-6)	0.057	42
U209 1,2,2-Tetrachloroethane (CAS 79-34-5)	0.057 (2)	42 (1)

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
U210 Tetrachloroethylene (CAS 127-18-4)	0.056 (2)	5.6 (1)
U211 Carbon tetrachoride (CAS 56-23-5)	0.057 (2)	5.6 (1)
U214** (Thallium(l)acetate) Thallium (CAS 7440-28-0)	0.14 (2)	NA
U215** (Thallium(l)carbonate) Thallium (CAS 7440-28-0)	0.14 (2)	NA
U216** (Thallium(l)chloride) Thallium (CAS 7440-28-0)	0.14 (2)	NA
U217** (Thallium(l)nitrate) Thallium (CAS 7440-28-0)	0.14 (2)	NA
U220 Toluene (CAS 108-88-3)	0.080 (2)	28 (1)
U225 Tribomomethane (Bromoform) (CAS 75-25-2)	0.63 (2)	15 (1)
U226 1,1,1-Trichlorethane (CAS 71-55-6)	0.054 (2)	5.6 (1)
U227 1,1,2-Trichloroethane (CAS 79-00-5)	0.054 (2)	5.6 (1)
U228 Trichloroethylene (CAS 79-01-6)	0.054 (2)	5.6 (1)
U235 tris-(2,3-Dibromopropy) phosphate (CAS 126-72-7)	0.025	0.10 (1)
U239 Xylenes	0.32 (2)	28 (1)
U240 2,4-Dichlorophenoxyacetic acid (CAS 94-75-7)	0.72	10 (1)
U243 Hexachloropropene (CAS 1888-71-7)	0.035 (2)	28

Waste Codes Regulated Hazardous Constituent with Applicable CAS No.	Concentrations Wastewaters (mg/L) Notes	 Nonwastewaters (mg/kg) Notes
U247 Methoxyxhlor (CAS 72-43-5)	0.25 (2)	0.18 (1)

*See also Table CCWE in 268.41

**See also Table 2 in 268.42

***See also Table CCWE in 268.41 and Table 2 in 268.42

(1) Treatment standards for this organic constituent were established based upon incineration in units operated in accordance with the technical requirements of 40:264 Subpart O or Part 265 Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may certify compliance with these treatment standards according to provisions in 40:268.7.

(2) Based on analysis of composite samples.

(3) As analyzed using SW-846 Method 9010 or 9012; sample size 10 g; distillation time 1 h and 15 min.

Appendix 4-8

Land Disposal Restricted Wastes Treatment Standards
(40 CFR 268, Appendix II)

CONSTITUENTS OF F001-F005 SPENT SOLVENT WASTE	EXTRACT CONCENTRATIONS[a] (in mg WASTEWATER[b]	OTHER[c]
Acetone	0.05	0.59
n-Butyl alcohol	5.00	5.00
Carbon disulfide	1.05	4.81
Carbon tetrachloride	0.05	0.96
Chlorobenzene	0.15	0.05
Cresols (cresylic acid)	2.82	0.75
Cyclohexanone	0.125	0.75
1,2-Dichlorobenzene	0.65	0.125
Ethyl acetate	0.05	0.75
Ethylbenzene	0.05	0.053
Ethyl ether	0.05	0.75
Isobutanol	5.00	5.00
Methanol	0.25	0.75
Methylene chloride	0.20	0.96
Methyl ethyl ketone	0.05	0.75
Methyl isobutyl ketone	0.05	0.33
Nitrobenzene	0.66	0.125
Pyridine	1.12	0.33
Tetrachloroethylene	0.079	0.05
Toluene	1.12	0.33
1,1,1-Trichloroethane	1.05	0.41
1,1,2 Trichloro-1,2,2-trifluoroethane	1.05	0.96
Trichloroethylene	0.062	0.091
Trichlorofluoromethane	0.05	0.96
Xylene	0.05	0.15

a An extract of the waste is obtained by employing the Toxicity Characteristic Leaching Procedure (TCLP). The TCLP is an analytical method used to determine whether the concentrations of hazardous constituents in the waste extract or an extract of the treatment residual meet the treatment standards.

b For determining the applicable treatment standard, F-solvent wastewaters are defined as solvent-water mixtures containing less than or equal to 1 percent total organic carbon (TOC).

c Wastewaters that contain greater than 1 percent TOC solvent-containing solids, solvent-containing sludges, and solvent-contaminated soils.

Appendix 4-9

Used Oil Classifications
(40 CFR 279.10 and 279.11)

Used Oils Which Are Required to be Handled According to the Requirements in 40 CFR 279 (40 CFR 279.10(b)(2)(ii), 279.10(b)(2)(iii), 279.10(b)(3), 279.10(c)(2), 279.10(d), 279.10(e)(2), 279.10(i)).

1. Used oil containing more than 1000 ppm of total halogens when the generator has demonstrated that the used oil does not contain hazardous waste.

2. Used metalworking oils/fluids containing chlorinated paraffins when they are recycled or disposed of and the generator has demonstrated that the used oil does not contain hazardous waste.

3. Used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units and the generator has demonstrated that the used oil does not contain hazardous waste.

4. Materials produced from used oil that are burned for energy recovery.

5. Mixtures of used oil and hazardous waste if the resultant mixture does not exhibit any characteristics of hazardous waste.

6. Mixtures of used oil and a waste that is hazardous solely because it exhibits the characteristic of ignitability and is not a listed waste.

7. Mixtures of used oil and conditionally exempt small quantity generator hazardous waste.

8. Mixtures of used oil and fuels or other fuel products except those marked onsite by the generator for use in the generators own vehicles if the used oil and the diesel fuel have been mixed.

9. Used oil burned for energy recovery and any fuel produced from used oil that exceeds the following allowable limits:

Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash Point	100 °F minimum
Total halogens	4,000 ppm maximum.

10. Materials containing or otherwise contaminated with used oil that are burned for energy recovery.

11. Used oil drained or removed from materials containing or otherwise contaminated with used oil.

12. Used oil at marketers or burners with any quantifiable level of PCBs (the standards in 40 CFR 761.20(a) must also be met for this type of oil).

Used Oil that is Required to be Handled as a Hazardous Waste (40 CFR 279.10(b)).

1. Mixtures of used oil and listed hazardous waste.
2. Used oil containing more than 1000 ppm total halogens.
3. Used metalworking oils/fluids containing chlorinated paraffins if processed through a tolling agreement.
4. Used oil contaminated with CFCs removed from refrigeration units where the CFCs are destined for reclamation.
5. Mixtures of used oil and hazardous waste if the resultant mixture exhibits characteristics of a hazardous waste.

Used Oil that is not Subject to the Requirements of 40 CFR 279, Nor is it to be Handled as a Hazardous Waste Unless Testing Indicates Hazardous Constituents (40 CFR 279.10(c)(1), 279.10(d)(2), 279.10(e)(1), 279.10(e)(3), 279.10(e)(4), 279.10(f) through 279.10(i)).

1. Mixtures of used oil and diesel fuel mixed onsite by the generator of the used oil for use in the generator's own vehicles.
2. Materials that are reclaimed from used oil that are used beneficially and are not burned for energy recovery or used in a manner constituting disposal.
3. Materials derived from used oil that are disposed of or used in a manner constituting disposal.
4. Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products.
5. Wastewater discharges with *de minimis* quantities of used oil.
6. Used oil within a crude oil or natural gas pipeline.
7. Used oil on vessels.
8. Materials containing or otherwise contaminated with used oil from which the used oil has been properly drained or removed so that no signs of visible free-flowing remains.

INSTALLATION:	COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (18) TSDF Operators (DEH,DOL,DRMO) (19) Shop Activity Supervisor (23) Defense and Reutilization Marketing Office (DRMO) (29) Installation Commander (IC)

Section 5

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D)

SECTION 5

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D)

A. Applicability of this Protocol

This protocol addresses the collection, storage, and disposal of solid waste on Army installations.

Solid waste is considered to be nonhazardous trash, rubbish, garbage, bulky wastes, liquids, or sludges generated by any Army installation operations and activities. It also includes any medical/pathological wastes generated by the installation hospital. The handling and disposal of asbestos waste materials are addressed in Section 13, *Asbestos Management Program.*

Recycling and resource recovery activities are also included in this protocol, since this form of solid waste management is required by Department of Defense (DOD) and U.S. Army directives.

Minimum solid waste management regulations have been established at the Federal level. However, state and local governments are responsible for managing and enforcing their solid waste management programs. The checklist items in this protocol represent the minimum Federal standards. Since some of these standards may differ from the state, a previsit analysis of specific state and local solid waste regulations is required to conduct a thorough review of this area.

B. Federal Legislation

- The *Solid Waste Disposal Act* of 1965 established grant programs for the development of solid waste management plans by states and/or interstate agencies and was enacted for the primary purpose of improving solid waste disposal methods.

- The *Resource Conservation and Recovery Act (RCRA) of 1976*, as amended, is the Federal law which governs the disposal of solid waste. Subtitle D of this Act, i.e., state or Regional Solid Waste Plans, as last amended in November 1984, PL 98-616, 42 U.S. Code (USC) 6941-6949a, establishes Federal standards and requirements for state and regional authorities respecting solid waste disposal.

  The objectives of this subtitle are to assist in developing and encouraging methods for the disposal of solid waste which are environmentally sound and

which maximize the utilitzation of valuable resources recoverable from solid waste. The objectives are to be achieved through Federal technical and financial assistance to states and regional authorities for comprehensive planning (42 USC 6941).

- The *Hazardous and Solid Waste Amendments of 1984* amended the SWDA and substantially increased the Federal government's involvement in waste management. These amendments required the USEPA to revise the RCRA Subtitle D criteria for solid waste facilities that may receive hazardous household waste or hazardous waste from small quantity generators (SQGs).

- The *Military Construction Codification Act.* This Act, Public Law (PL) 97-214, effective 1 October 1982, defines solid waste recycling in the DOD. It defines recyclable materials and increases the incentives for participation in installation recycling programs by increasing the options for the use of sales proceeds. Section 203 of the *Federal Property and Administrative Service Act of 1949* governs the procedures for the sale of recyclable materials in the Army.

C. State / Local Requirements

The Federal government set minimum national standards for municipal solid waste disposal in 40 CFR 258, but state and local governments are responsible for implementing and enforcing waste programs. States are required to develop their own programs based on the federal regulations. Most states and municipalities have already developed their own regulations governing the permitting, licensing, and operations of landfills, incinerators, and source separation/recycling programs.

States are required to incorporate revised criterias for municipal solid waste landfills (MSWLFs) into their permit programs and gain approval from USEPA. States that apply for and receive USEPA approval of their programs have the opportunity to provide a lot of flexibility in implementing the regulations. This flexibility allows states to take local conditions into account and gives them the authority to alter some of the requirements. Evaluators will need to determine if a state has been granted approval for the 40 CFR 258 Program in order to accurately assess an installation's compliance with the criteria.

D. DOD Regulations

- DOD Directive 4100.15, *Commercial and Industrial Activities*, sets the overall policy that military installations shall not compete with a locally available com-

mercial recycling industry which offers a total solid waste resource recovery system and that regional resource recovery programs shall be used whenever practical.

- DOD Directive 4165.60, *Solid Waste Collection, Disposal, Material Recovery, and Recycling*, provides guidance and direction to all DOD facilities relative to solid waste collection, disposal, material recovery, and recycling in agreement with the Solid Waste Disposal Act (SWDA).

E. U.S. Army Regulations (AR)

- AR 200-1, *Environmental Protection and Enhancement*, Chapter 6, *Solid Waste and Hazardous Waste Management Program*, defines Army policy and responsibility for managing solid waste, including resource recovery, recycling, waste reduction, and training programs. It mandates compliance with local, state, and Federal solid waste requirements, to assure waste management practices the protection of human health and the environment, to reduce the need for corrective action, and minimize waste generation and disposal.

- AR 420-47, *Solid and Hazardous Waste Management*, remains in force with the exception of Chapters 5 and 6, Appendices a, b, and c, and the glossary, which have been superseded by AR 200-1. The remaining chapters cover responsibilities regarding solid and hazardous waste, collection and storage of both solid and hazardous waste, thermal processing and land disposal of solid (nonhazardous) waste, and monitoring records.

- AR 40-5, *Preventive Medicine*, establishes practical measures for the preservation and promotion of health and the prevention of disease and injury.

  The Department of the Army (DA) objective is to manage Army solid waste to ensure compliance with appropriate Federal, state, and DA regulations in a manner that permits maximum opportunity for resource recovery without jeopardizing natural resources or health and the environment.

- AR 215-1, *Administration of Morale, Welfare and Recreation (MWR) Activities and Nonappropriated Funds Instrumentalities (MAFIs)* contains guidance for the involvement of NAFI activities in the recycling program.

F. Key Compliance Requirements

- Permits and Licenses for Onsite Landfills - Army installations must obtain applicable state or local permits and licenses for the site location and operation of onsite landfills. They must follow Federal and state regulations pertaining to the design, operation, monitoring, and closure of landfills.

- Hazardous Waste - Substances regulated as hazardous waste by Federal, state, or local regulations may not be disposed of in facilities permitted for nonhazardous waste disposal. RCRA, the Hazardous and Solid Waste Amendments of 1984, and specific state and local regulations will apply.

- Waste Source Separation, Source Separation, Resource Recovery, Reuse, and Recycling - Army installations are required to comply with Federal, state, and local regulations and requirements pertaining to these practices.

- Use of Properly Permitted Offsite Landfills - Army installations have the responsibility for the proper disposal of solid waste generated by Army operations. This responsibility includes assurance that offsite landfills that receive Army solid wastes are licensed and are operated in compliance with the conditions of those permits.

- Garbage On or In Vessels and Aircraft Arriving From Outside the United States - Army installations located in the United States and territories and possessions are required to comply with certain United States Department of Agriculture (USDA) inspection and disposal requirements if they receive garbage from vessels and aircraft arriving from outside the United States. These regulations are designed to prevent the spread of plant pests and animal diseases.

G. Responsibility for Compliance

- The Directorate of Engineering and Housing (DEH) is responsible for site location, licensing, construction, and operation of onsite landfills, and for the storage and transportation of solid wastes to either onsite or offsite disposal activities operated by the installation.

- The Installation Commander (IC) designates an activity (normally either DEH or an MWR activity as the qualifying waste recycling program (QWRP) manager. The QWRP manager is responsible for proper operation of the program.

H. Key Compliance Definitions

These definitions were obtained from Federal, DOD, and U.S. ARs cited previously in this protocol.

- *Active Life* - the period of operation beginning with the initial receipt of solid waste and ending with the completion of closure activities (40 CFR 258.2).

- *Active Portion* - that part of a facility or unit that has received or is receiving wastes and that has not been closed (40 CFR 258.2).

- *Aquifer* - a geological formation, group of formations, or a portion of a formation capable of yielding significant quantities of groundwater to wells or springs (40 CFR 258.2).

- *Bottom Ash* - the solid material that remains on a hearth or falls off the grate after thermal processing is complete (40 CFR 240.101(b)).

- *Bulky Wastes* - large items of solid waste such as household appliances, furniture, large auto parts, trees, branches, stumps, and other oversize wastes which large size precludes or complicates their handling by normal solid waste collection, processing, or disposal methods (40 CFR 243.101).

- *Cell* - compacted solid wastes that are enclosed by natural soil or cover material in a land disposal site (40 CFR 241.101).

- *Collection* - the act of removing solid waste (or materials which have been separated for the purpose of recycling) from a central storage point (40 CFR 243.101).

- *Commercial Solid Waste* - all types of solid waste generated by stores, offices, restaurants, warehouses, and other non-manufacturing activities, excluding residential and industrial wastes (40 CFR 243.101).

- *Construction and Demolition Wastes* - the waste building materials, packaging and rubble resulting from the construction, renovation, repair, and demolition operation on pavements, houses, commercial buildings, and other structures (40 CFR 243.101).

- *Corrugated Container Waste* - discarded corrugated boxes (40 CFR 246.101).

- *Cover Material* - soil or other suitable material that is used to cover compacted solid wastes in a land disposal site (40 CFR 241.101).

- *Daily Cover* - cover material that is spread and compacted on the top and side slopes of compacted solid wastes at least at the end of each operating day in order to control vectors, fire, moisture, and erosion and to assure an aesthetic appearance (40 CFR 241.101).

- *Design Capacity* - the weight of solid waste of a specified gross calorific value that a thermal processing facility is designed to process in 24 hours (h) of continuous operation (40 CFR 240.101(d)).

- *Existing Municipal Solid Waste Landfill (MSWLF)* - any municipal solid waste landfill unit that is receiving solid wastes as of 9 October 1993 (40 CFR 258.2).

- *Facility* - all contiguous land and structure, other appurtenances, and improvements on the land used for the disposal of solid waste (40 CFR 258.2).

- *Final Cover* - cover materials that serve the same function as daily cover but, in addition, may be permanently exposed on the surface (40 CFR 241.101).

- *Fly Ash* - suspended particles, charred paper, dust, soot, and other partially oxidized matter carried in the products of combustion (40 CFR 240.101).

- *Food Waste* - the organic residues generated by the handling, storage, sale, preparation, cooking, and serving of foods, commonly called garbage (40 CFR 243.101).

- *Garbage* - in relation to solid waste coming from outside the continental United States, it is all waste material derived in whole or in part from fruits, vegetables, meats, or other plant or animal material, and other refuse of any character whatsoever that has been associated with any such material on board any means of conveyance, and including food scraps, table refuse, galley refuse, food wrappers, or packaging materials, and other water materials from stores, food preparation areas, passengers; or crews quarters, dining rooms, or any other areas or means of conveyance. It also means meals and other food that were available for consumption by passengers and crew on an aircraft but were not consumed (7 CFR 330.400(b)).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *Groundwater* - water present in the unsaturated zone of an aquifer (40 CFR 241.101).

- *High-grade Paper* - letterhead, dry copy papers, miscellaneous business forms, stationary, typing paper, tablet sheets, and computer printout paper and cards, commonly sold as "white ledger", "computer printout" and "tab card" grade by the wastepaper industry (40 CFR 246.101).

- *Household Waste* - any solid waste, (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use-recreation areas) (40 CFR 258.2).

- *Industrial Solid Waste* - the solid waste generated by industrial processes and manufacturing that is not a hazardous waste (40 CFR 243.101).

- *Industrial Solid Waste* - in relation to MSWLFs, solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste (40 CFR 258.2).

- *Infectious Waste* - 1. equipment, instruments, utensils, and fomites of a disposable nature from the rooms of patients who are suspected to have or have been diagnosed as having a communicable disease and must, therefore, be isolated as required by public health agencies; 2. laboratory wastes such as pathological specimens and disposable fomites (any substance that may harbor or transmit pathological organisms); 3. surgical operating room pathological specimens and disposable fomites attendant thereto and similar disposable materials from outpatient areas and emergency rooms (40 CFR 240.101).

- *Institutional Solid Waste* - solid wastes generated by educational, health care, correctional and other institutional facilities (40 CFR 243.101).

- *Intermediate Cover* - cover material that serves the same function as daily cover, but must resist erosion for a longer period of time, because it is applied in areas where additional cells are not to be constructed for extended periods of time (40 CFR 241.101).

- *Lateral Expansion* - a horizontal expansion of the waste boundaries of an existing municipal solid waste landfill unit (40 CFR 258.2).

- *Leachate* - liquid that has percolated through solid waste and has extracted dissolved or suspended materials from it (40 CFR 241.101).

- *Leachate* - in relation to MSWLFs, this is a liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste (40 CFR 258.2).

- *Medical/Pathological Wastes* - any solid waste that is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals. This does not include hazardous waste or household waste (40 CFR 259.10).

- *Municipal Solid Waste* - residential and commercial solid wastes generated within a community (40 CFR 240.101).

- *Municipal Solid Waste Landfill (MSWLF) Unit* - a discrete area of land or an excavation that receives household waste and that is not a land application unit, surface impoundment, injection well, or waste pile. It may also receive other types of RCRA-D wastes, such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator (CESQG) waste and industrial solid waste. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, and existing MSWLF unit, or a lateral expansion (40 CFR 258.2).

- *New MSWLF* - any municipal solid waste landfill unit that has not received waste prior to 9 October 1993 (40 CFR 258.2).

- *Open Burning* - in relation to MSWLFs, the combustion of solid waste without:
    1. control of combustion air to maintain adequate temperature for efficient combustion
    2. containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustions
    3. control of the emission of the combustion product (40 CFR 258.2).

- *Open Burning* - burning of solid wastes in the open, such as in an open dump (40 CFR 240.101(r)).

- *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 (40 CFR 240.101).

- *Recoverable Resource* - materials that still have useful physical, chemical, or biological properties after serving their original purpose and can, therefore, be reused or recycled for the same or other purposes (40 CFR 245.101).

- *Recycled Material* - a material that is used in place of a primary, raw, or virgin material in manufacturing a product (40 CFR 245.101).

- *Recycling* - the process by which recovered materials are transformed into new products (40 CFR 245.101).

- *Residential Solid Waste* - the wastes generated by the normal activities of households, including, but not limited to, food wastes, rubbish, ashes, and bulky wastes (40 CFR 243.101).

- *Resource Recovery Facility* - any physical plant that processes residential, commercial, or institutional solid waste biologically, chemically, or physically, and recovers useful products (40 CFR 245.101).

- *Runoff* - the portion of precipitation that drains from an area as surface flow (40 CFR 241.101).

- *Runoff* - in relation to MSWLFs, any rainwater, leachate, or other liquid that drains over land from any part of a facility (40 CFR 258.2).

- *Run-on* - any rainwater, leachate, or other liquid that drains over land onto any part of a facility (40 CFR 258.2).

- *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 (40 CFR 240.101).

- *Separate Collection* - collection of recyclable materials which have been separated at the point of generation and keeping those materials separated from other collected solid waste in separate compartments of a single collection vehicle or through the use of separate collection vehicles (40 CFR 246.101).

- *Sludge* - the accumulated semi-liquid suspension of settled solids deposited from waste waters or other fluids in tanks or basins (40 CFR 240.101).

- *Sludge* - in relation to MSWLFs, any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant (40 CFR 258.2).

- *Solid Waste* - in relation to MSWLFs, any garbage, or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded materials, including solid, liquid, semi-solid, or

contained gaseous material resulting from industrial, commercial. mining and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permit under 33 USC 1342, or source, special nuclear, or by-product material as defined by the *Atomic Energy Act of 1954*, as amended (68 Statute 932) (40 CFR 258.2).

- *Solid Waste* - garbage, refuse, sludge, and other discarded solid materials resulting from industrial and commercial operations and from community activities. It does not include solids or dissolved materials in domestic sewage or other significant pollutants in water resources (40 CFR 240.101).

- *Source Separation* - the setting aside of recyclable materials at their point of generation by the generator (40 CFR 246.101).

- *Special Wastes* - nonhazardous solid wastes requiring handling other than that normally used for municipal solid wastes (40 CFR 240.101).

- *Thermal Processing* - processing of waste material by means of heat (40 CFR 240.101).

- *Transfer Station* - a station at which solid wastes are concentrated for transport to a processing facility or land disposal site. A transfer station may be fixed or mobile (40 CFR 243.101).

- *Uppermost Aquifer* - the geologic formation nearest the natural ground surface that is an aquifer, as well as, lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary (40 CFR 258.2).

- *Vector* - a carrier, usually an arthropod, that is capable of transmitting a pathogen from one organism to another (40 CFR 240.202).

- *Waste Management Unit Boundary* - a vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer (40 CFR 258.2).

- *Working Face* - that portion of the land disposal site where solid wastes are discharged and are spread and compacted prior to the placement of cover material (40 CFR 241.101).

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All Installations	5-1 through 5-5	(1)(2)
Recycling	5-6 through 5-9	(1)(2)(9)(23)(31)(35)
Solid Waste Storage/Collection	5-10 through 5-20	(1)(2)(9)(20)(21)
Specific Wastes	5-21 through 5-24	(1)(2)(9)
Land Disposal Sites Other Than MSWLFs		
Operations	5-25 through 5-43	(1)(2)(9)
Closure	5-44	(1)(2)(9)
Site Criteria For New Landfills	5-45 through 5-47	(1)(2)(9)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(3) Preventive Medicine Officer
(9) Chief of Operations and Maintenance (O&M)
(20) Director of Contracting (DOC)
(21) Public Affairs Office (PAO)
(23) Defense and Reutilization Marketing Office (DRMO)
(31) Directorate of Personnel and Community Activities (DPCA)
(35) Morale, Welfare, and Recreation (MWR)

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
Municipal Solid Waste Landfills (MSWLFs)		
Location Restrictions	5-48 through 5-53	(1)(2)(9)
Operating Criteria	5-54 through 5-64	(1)(2)(9)
Groundwater Monitoring Criteria	5-65 through 5-76	(1)(2)(9)
Closure Criteria	5-77 through 5-81	(1)(2)(9)
Postclosure Care Requirements	5-82 through 5-84	(1)(2)(9)
Design Criteria	5-85 and 5-86	(1)(2)(9)
Thermal Processing Facilities	5-87 through 5-101	(1)(2)(9)
Resource Recovery Facilities	5-102 and 5-103	(1)(2)(9)
Disposal of Refuse From Outside the United States	5-104	(1)(2)(9)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(3) Preventive Medicine Officer
(9) Chief of Operations and Maintenance (O&M)
(20) Director of Contracting (DOC)
(21) Public Affairs Office (PAO)
(23) Defense and Reutilization Marketing Office (DRMO)
(31) Directorate of Personnel and Community Activities (DPCA)
(35) Morale, Welfare, and Recreation (MWR)

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D)

Plans and Maps to Review

- Documentation of locations (map) and descriptions of all nonhazardous waste treatment, storage, and disposal facilities
- Regional solid waste management plan
- Installation solid waste management plans, Standard Operating Procedures (SOPs)

Records to Review

- Record of current nonhazardous solid waste management practices
- Records of operational history of all active and inactive landfill sites
- State and Federal inspection reports
- Environmental monitoring procedures or plans and analytical results
- Records of resource recovery practices, including the sale of materials for the purpose of recycling
- Solid waste removal contracts and inspection records
- Unique state and local rules for handling solid waste
- Any regulatory agreement, waivers, exemptions, inspection reports, compliance orders, and notices relating to solid waste program
- Groundwater monitoring well data
- Operating record for onsite municipal solid waste landfill
- Estimate of generation rates

Physical Features to Examine

- Resource recovery facilities
- Incineration and land disposal facilities (active and inactive)
- Areas where nonhazardous waste is disposed
- Construction debris areas
- Waste receptacles (dining facilities, hospitals, labs, motor pools, industrial areas)
- Solid waste vehicle storage and washing areas
- Groundwater monitoring wells
- Methane gas vents at landfills
- Compost facilities
- Transfer stations
- Recycling centers
- DRMO facilities

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Preventive Medicine Officer
- Chief of Operations and Maintenance (O&M)
- Director of Contracting (DOC)
- Public Affairs Office (PAO)
- Chief of Directorate of Personnel and Community Activities (DPCA)
- Defense and Reutilization Marketing Office (DRMO)
- Morale, Welfare, and Recreation (MWR)
- Disposal Facility Operator
- Recycling Coordinator

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
5-1. Determine actions or changes since previous review of solid waste management (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)(2)
...	...
5-2. The installation should maintain a current file of applicable Federal, DOD, U.S. Army, and state regulations (GMP).	Determine if copies of the following regulations, which are applicable, are current and available at the installation: (1) - 7 CFR 330, *Animal and Plant Health Inspection Service.* - 40 CFR 240, *Guidelines for Thermal Processing of Solid Waste.* - 40 CFR 241, *Guidelines for Land Disposal of Solid Wastes.* - 40 CFR 243, *Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste.* - 40 CFR 245, *Promulgation Resource Recovery Facility Guidelines.* - 40 CFR 246, *Source Separation for Materials Recovery Guidelines.* - 40 CFR 258, *Criteria for Municipal Solid Waste Landfills.* - EO 12088, *Federal Compliance with Pollution Standards.* - DOD Directive 4100.15, *Commercial and Industrial Activities.* - DOD Directive 4165.60, *Solid Waste Collection, Disposal, Material Recovery, and Recycling.* - AR 40-5, *Preventive Medicine.* - AR 200-1, *Environmental Protection and Enhancement.* - AR 420-47, *Solid and Hazardous Waste Management.* - TN 420-47-02 - Applicable state and local regulations. (NOTE: A consolidated listing of approved test methods should also be maintained at the installation such as *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, USEPA Publication SW-846, Document #PB87-120-291.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-3. Installations are required to comply with appropriate state and local requirements (EO 12088, Section 1-1).	Verify that the installation is complying with state and local requirements. (1) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2) (NOTE: Issues which are typically regulated by state and local agencies include: - license or permit requirements for existing onsite landfills - requirements for filing a closure plan for onsite landfill specifying monitoring and inspection procedures - design and operations specifications for solid waste receptacles - disposal of solid waste offsite only at a licensed or permitted facility - design and policy procedures of thermal processing of solid waste - analysis for hazardous properties of ash residues and sludge from air pollution control devices at coal-fired installation heating plant operations before sale or disposal - handling and disposal of medical, pathological, and infectious wastes - recycling requirements - yard waste - used tires.)
...	...
5-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notice of Violations (NOVs), letters of citation, promotes good public relations and addresses weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2) Verify that the existing system addresses the issues associated with solid waste by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning solid waste have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...
RECYCLING	
5-6. Army installations are required to participate in any state or local recycling programs and to reduce the volume of solid waste materials at the source whenever practical (DOD 4165.60, para V(a), V(c), and V(h), and AR 200-1, para 6-14a).	Determine if a solid waste reduction/resource recovery program exists. (1)(9)(23)(35) Verify that recycling program is in compliance with applicable state or local requirements. (1)(2)(23)(35) Verify that reusable or marketable materials are collected at regular intervals. (2)(23)(35) Verify that proceeds from the sale of recyclables are properly distributed. (1)(2)(23)(35)
...	...
5-7. Installations with office facilities of over 100 office workers are required to recover high-grade paper (40 CFR 246.200-1).	Determine if the installation has over 100 office workers. (2)(31) Verify that high-grade paper is separated at the source of generation. (2)(31) Verify that high-grade paper is separately collected. (2)(31) Verify that high-grade paper is recycled. (2)(31)
...	...
5-8. Installations at which more than 500 families reside are required to recycle newspapers (40 CFR 246.201-1).	Determine if the installation has more than 500 families residing on it. (2)(23)(31)(35) Verify that used newspapers are separate at the source of generation. (2)(31) Verify that used newspapers are separately collected. (2)(31) Verify that used newspapers are sold for recycling. (2)(31)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-9. Any installation generating 10 or more tons of waste corrugated containers per month are required to segregate/ separately collect for recycling or alternative energy use (40 CFR 246.202-1).	Determine if the installation generates 10 or more tons of waste corrugated containers per month. (2)(23)(31)(35) Verify that waste corrugated containers are collected separately. (2)(31) Verify that waste corrugated containers are recycled or used as a source for alternative energy. (2)(31)
...	...
SOLID WASTE STORAGE AND COLLECTION	
5-10. Army installations are required to follow specific requirements for solid waste storage, collection, and cleaning of equipment (AR 200-1, para 6-12b and AR 420-47, para 3-4a).	Verify that all solid waste is stored such that: (1)(2)(20) - it is not a fire, health, or safety hazard - it does not provide food or harborage for disease vectors - it is contained or bundled to prevent spills. Verify that containers are properly cleaned. (1)(2)(9)
...	...
5-11. Installation industrial shop waste receptacles should be inspected quarterly to verify that hazardous wastes are not being deposited (GMP).	Verify that receptacles were inspected by interviewing staff and reviewing records. (1) Verify that corrective actions were taken where indicated. (1)(2) Inspect a sample of solid waste receptacles at shops for presence of hazardous waste. (1)(2)
...	...
5-12. Installation personnel should be periodically informed about materials that are prohibited from disposal in solid waste receptacles (GMP).	Verify that a program exists at the installation to keep personnel informed about proper waste disposal practices. (1)(21)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-13. Installations are required to store all solid wastes and materials separated for recycling according to specific guidelines (40 CFR 243.200-1).	Verify that all solid wastes are stored so as not cause a fire, health or safety hazard. (1)(2) Verify that all solid wastes containing food wastes are stored in covered or closed containers which are nonabsorbent, leakproof, durable, easily cleaned, designed for safe handling. (1)(2) Verify that solid waste containers are of an adequate size and number to contain all waste generated between collections. (1)(2) Verify that bulky wastes are stored so as not to create a nuisance and to avoid the accumulation of solid waste and water in and around the bulky items. (1)(2) Verify that reusable containers are capable of being serviced without the collector coming into contact with the waste. (1)(2) (NOTE: Federal agencies that have decided not to adopt the requirements contained in 40 CFR 243 are required to provide a report of the analysis and rationale used.)
...	...
5-14. Food waste containers are required to be marked *Unauthorized Personnel Are Not To Enter Dumpster For Any Reason* (AR 420-47, para 3-4b(5)).	Verify that dumpsters used for food products are correctly labeled. (1)(2)
...	...
5-15. All installations are required to operate their collection systems in a manner to protect the health and safety of personnel associated with the operation (40 CFR 243.201-1).	Verify that collection system is operated safely by interviewing collection system personnel to determine if health and safety procedures exist and how they are implemented. (1)(2)
...	...
5-16. Installations are required to maintain collection equipment according to certain standards (40 CFR 243.202-1(a)).	Verify that all vehicles used for the collection and transportation of solid waste meet all applicable standards established by the Federal Government including: (1)(2) - Motor Carrier Safety Standards (49 CFR 390 through 396) - Noise Emission Standards for Motor Carriers Engaged in Interstate Commerce (40 CFR 202) - Federal Motor Vehicle Safety Standards (49 CFR 500 through 580) (Federally owned collection equipment only).

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-17. All collection equipment is required to meet specific criteria (40 CFR 243.202-1(b) and 243.202-1(c)).	Verify that all vehicles used for collection and transportation of solid wastes or materials separated for recycling are enclosed and have suitable cover to prevent spillage. (2) Verify that equipment used in the compaction, collection, and transportation of solid waste or materials separated for recycling are constructed, operated, and maintained adequately. (2) Verify that the following types of equipment meet the standards established by the American National Standards Institute: (2) - rear-loading compaction equipment - side-loading compaction equipment - front-loading compaction equipment - tilt-frame equipment - hoist-type equipment - satellite vehicles - special collection compaction equipment - stationary compaction equipment.
...	...
5-18. All installations are required to collect solid wastes or materials separated for recycling according to a certain schedule (40 CFR 243.203-1).	Verify that solid wastes which contain food wastes are collected at a minimum of once during each week. (1)(2) Verify that bulky wastes are collected at a minimum of once every 3 months (mo). (1)(2) Verify that all wastes are collected with sufficient frequence to inhibit the propagation or attraction of vectors and the creation of nuisances. (1)(2)
...	...
5-19. Weekly collection is required for garbage from dining facilities and similar activities and family quarters (AR 420-47, para 3-7).	Verify that weekly collection is occurring. (1)(2)
...	...
5-20. Installations are required to collect solid waste in a safe and efficient manner (40 CFR 243.204-1).	Verify that solid wastes or materials separated for recycling are collected in a safe efficient manner. (1)(2) Verify that the collection vehicle operator immediately cleans up any spillage caused by his/her operations. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Specific Wastes	
5-21. Facilities will identify what wastes can and cannot be accepted at the facility in conjunction with the responsible agency (40 CFR 241.200-1).	Verify that the facility has specifically identified what wastes can and cannot be accepted for disposal at the site. (1)(2)(9)
...	...
5-22. Bulky wastes should be disposed of according to certain methods (GMP).	Verify that automobile bodies, furniture, and appliances are either salvaged or crushed and pushed onto the working face near the bottom of the cell. (1)(2)(9) Verify that demolition and construction debris, tree stumps, and large timbers are pushed onto the working face near the bottom of the cell. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 241-200-3(b).)
...	...
5-23. Water treatment plant sludges containing no free moisture and digested or heat treated wastewater treatment plant sludges should be disposed of according to certain methods (GMP).	Verify that water treatment plant sludges containing no free moisture and digested or heat treated wastewater treatment plant sludges are covered with soil or municipal solid wastes. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 241.200-3(d).)
...	...
5-24. Incinerator and air pollution control residues should be disposed of according to certain methods (GMP).	Verify that incinerator and air pollution control residues are incorporated into the face and covered as necessary to prevent them from becoming airborne. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 241.200-3(e).)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
LAND DISPOSAL SITES OTHER THAN MSWLFs	
Operations	
5-25. Facilities should place cover material at the end of each operating day (GMP).	Verify that cover material is put in place daily by arriving at the site before it opens. (1)(2)(9) (NOTE: This GMP is based on recommendations in 40 CFR 241.200-3(a).)
...	...
5-26. Using information from the generation sources on the installation, the disposal facility operator and the responsible agency are required to determine specific wastes that are excluded from disposal and identify them in plans (40 CFR 241.201-1).	Verify that the disposal facility has designated what wastes are excluded from disposal at the site. (1)(2)(9) Verify that the list of excluded wastes is documented in a plan. (1)(2)(9)
...	...
5-27. Installations which operate land disposal sites should provide a list of excluded materials to regular users (GMP).	Verify that a list of excluded materials is displayed prominently at the site entrance. (1)(2)(9) Verify that a list of excluded materials is given to all regular users of the site. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 241.201-3).
...	...
5-28. The location, construction, and design of land disposal sites are required to meet the most stringent of applicable water quality standards and/or be constructed, located, designed, and operated in a manner to provide adequate protection to ground and surface water used as drinking water supplies (40 CFR 241.204-1).	Verify that applicable water quality standards are met and ground and surface water used as drinking water supplies are protected. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-29. Land disposal sites should be operated in a manner which will protect water quality (GMP).	Verify that surface water course and runoff are diverted from the land disposal site. (1)(2)(9) Verify that the land disposal site is constructed and graded to promote rapid surface water runoff without excessive erosion. (1)(2)(9) Verify that regrading is done as necessary to avoid ponding of precipitation and to maintain cover material integrity. (1)(2)(9) Verify that siltation or retention basins or other approved methods of retarding runoff are used where necessary to avoid stream siltation or flooding problems. (1)(2)(9) Verify that leachate collection and treatment systems are used where necessary to protect groundwater and surface water resources. (1)(2)(9) Verify that municipal solid wastes and leachate are not in contact with groundwater or surface water. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 241.204-3).
...	...
5-30. Land disposal sites should operate in a manner which will protect air quality (GMP).	Verify that there is no open burning of municipal solid wastes. (1)(2)(9) Verify that dust control measures are initiated as necessary. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 241.205-3).
...	...
5-31. Land disposal sites are required to control decomposition gases as necessary to avoid posing a hazard to occupants of adjacent property (40 CFR 241.206-1).	Verify that land disposal sites are controlling decomposition gases. (1)(2)(9)
...	...
5-32. Land disposal sites should control decomposition gases according to the following recommended procedures (GMP).	Verify that decomposition gases are not allowed to migrate laterally from the land disposal site. (1)(2)(9) Verify that decomposition gases do not pose an explosion or toxicity hazard. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 241.206-3.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-33. Land disposal sites are required to control vectors (40 CFR 241.207-1).	Verify that conditions are maintained that are unfavorable for the harboring, feeding, and breeding of vectors. (1)(2)(9)
...	...
5-34. Land disposal sites are required to be designed and operated in an aesthetically acceptable manner (40 CFR 241.208-1).	Verify that the disposal site is designed and operated in an aesthetically acceptable manner. (1)(2)(9)
...	...
5-35. For the land disposal site to be aesthetically acceptable, specific practices should be followed (GMP).	Verify that blowing litter is controlled through portable litter fences or other devices. (1)(2)(9) Verify that wastes that are easily moved by wind are covered as necessary to prevent their becoming airborne. (1)(2)(9) Verify that onsite vegetation is cleared only as necessary. (1)(2)(9) Verify that natural windbreaks are maintained. (1)(2)(9) Verify that buffer strips and/or berms are used to screen the site from nearby residences and major roadways. (1)(2)(9) Verify that salvage material is removed from the site frequently. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 208-3.)
...	...
5-36. Land disposal site cover material must meet certain criteria (40 CFR 241.209-1).	Verify that cover material is applied as necessary to: (1)(2)(9) - minimize fire hazards - minimize infiltration of precipitation - minimize odors - minimize blowing litter - control gas venting - control vectors - discourage scavenging - provide a pleasing appearance.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-37. Cover material should be applied according to specific recommendations (GMP).	Verify that cover material is applied daily regardless of weather. (1)(2)(9) Verify that the thickness of the compacted daily cover is no less than 6 inches (in.). (1)(2)(9) Verify that intermediate cover is applied on areas where additional cells are not to be constructed for extended periods of time. (1)(2)(9) Verify that final cover is applied on each area as it is completed or if the area is to remain idle for over 1 year (yr). (1)(2)(9) Verify that the surface grade promotes surface water runoff without erosion to minimize infiltration. (1)(2)(9) Verify that intermediate cover is at least 1 foot thick and final cover is at least 2 foot thick. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 209-3.)
...	...
5-38. Municipal solid waste and cover material must be compacted to the smallest practicable volume (40 CFR 241.210-1).	Verify that the solid waste and cover material is compacted to the smallest practicable volume.
...	...
5-39. Compaction of wastes and cover materials should be done according to recommended procedures (GMP).	Verify that on an operating day municipal solid waste handling equipment is capable of performing the following functions: (1)(2)(9) - spread solid waste in layers no more than 2 foot thick while confining it to the smallest practicable area - compact the spread solid wastes to the smallest practicable volume - place, spread, and compact the cover material daily. (NOTE: This GMP is based on recommendations found in 40 CFR 214.210-2.)
...	...
5-40. Land disposal sites are required to be designed, constructed, and operated to protect the health and safety of personnel (40 CFR 241.211-1).	Verify that the health and safety of personnel are a consideration in the design, construction and operation of the site. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-41. Specific health and safety procedures should be followed in order to protect personnel at land disposal sites (GMP).	Verify that a safety manual is available to employees. (1)(2)(9) Verify that personal safety devices such as hearing and eye protection, are provided to facility employees. (1)(2)(9) Verify that equipment is provided with safety devices. (1)(2)(9) Verify that provisions to extinguish fires exist. (1)(2)(9) Verify that communications equipment is available onsite. (1)(2)(9) Verify that scavenging is prohibited. (1)(2)(9) Verify that access to the site is controlled. (1)(2)(9) Verify that traffic signs or markers are provided to promote an orderly traffic pattern to and from the discharge area. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 241.211-2 and 241.211-3.)
...	...
5-42. Operators of land disposal sites are required to maintain records and monitoring data to be provided, upon request, to the responsible agency (40 CFR 241.212-1).	Verify that required records are available.
...	...
5-43. Records being maintained at land disposal site should cover specific topics (GMP).	Verify that records are maintained and cover at least: (1)(2)(9) - major operational problems, complaints, or difficulties - results of leachate sampling and analyses - results of gas sampling and analyses - results of groundwater and surface water quality sampling and analyses upstream and downstream of the site - vector control efforts - dust and litter control efforts - quantitative measurements of the solid wastes handled - description of solid waste materials received. (NOTE: This GMP is based on recommendations found in 40 CFR 241.212-3(a).)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Closure	
5-44. Upon closure of a site, a detailed description should be recorded with the area's land recording authority (GMP).	Verify that upon closure of a site a detailed description is recorded with the area's land recording authority. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 241.212-3(b).)
...	...
SITE CRITERIA FOR NEW LANDFILLS	
5-45. Site selection and utilization are required to be consistent with public health and welfare, and air and water quality standards and adaptable to appropriate land-use plan (40 CFR 241.202-1).	Verify that the site and utilization are consistent with public health and welfare and other necessary environmental standards. (1)(2)(9)
...	...
5-46. New landfills should meet certain location and design criteria (GMP).	Verify that the hydrogeology of the site has been evaluated. (1)(2)(9) Verify that onsite soil characteristics have been evaluated. (1)(2)(9) Verify that environmental factors, climatological conditions, and socioeconomic factors have been considered in site selection. (1)(2)(9) Verify that the site is easily accessible to vehicles. (1)(2)(9) Verify that the site location will not attract birds and pose a hazard to low-flying aircraft. (1)(2)(9) (NOTE: This GMP is based on recommendations found in 40 CFR 241.202-2.)
...	...
5-47. Plans for the design, construction, and operation of new sites or modifications to existing sites are required to be prepared or approved by a professional engineer (40 CFR 241.203-1).	Verify that plans have been prepared or approved by a professional engineer. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
MUNICIPAL SOLID WASTE LANDFILLS (MSWLFs) **Location Restrictions**	
5-48. Effective 9 October 1993, installations are subject to limitations regarding the location of new, existing, and lateral expansion of MSWLFs within 10,000 ft (3048 meters (m)) of any airport runway end used by turbojet aircraft or within 5000 ft (1524 m) of any airport runway end used by only piston-type aircraft (40 CFR 258.10(a) through 258.10(c) and 258.16).	Verify that the installation has demonstrated that the MSWLF is designed and operated so as to not pose a bird hazard to aircraft. (1)(2)(9) Verify that the installation has notified the Federal Aviation Administration (FAA) and the affected airport as to presence of the MSWLF. (1)(2)(9) Verify that the demonstration has been placed in the operating record and the State Director has been notified that it has been placed in the operating record. (1)(2)(9) Verify that existing MSWLF units that cannot make this demonstration, are closed by 9 October 1996, unless a delay is approved by the Director. (1)(2)(9)
...	...
5-49. Effective 9 October 1993, installations are subject to limitations regarding the location of new, existing, and lateral expansion of MSWLFs in 100 yr floodplains (40 CFR 258.11(a) and 258.16).	Verify that the installation has demonstrated that the MSWLF will not restrict the flow of the 100 yr flood, reduce the temporary water storage capacity of the floodplain, or result in a washout of solid waste. (1)(2)(9) Verify that existing MSWLF units that cannot make this demonstration, are closed by 9 October 1996, unless a delay is approved by the Director. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-50. Effective 9 October 1993, installations are required to comply with limitations regarding the location of new MSWLFs and lateral expansions in wetland (40 CFR 258.12(a)(1) through 258.12(a)(3) and 258.16).	Verify that if the installation is planning to place a MSWLF or lateral expansion in a wetlands, it has demonstrated to the Director that the construction of the MSWLF will not: (1)(2)(9) - cause or contribute to violations of any applicable state water quality standard - violate any applicable toxic effluent standard or prohibition - jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical protected habitat - violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1973 - cause or contribute to significant degradation of wetlands. Verify that the installation has demonstrated the integrity of the MSWLF and its ability to protect ecological resources by addressing the following factors: (1)(2)(9) - erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the MSWLF unit - erosion, stability, and migration potential of dredged and fill materials used to support the MSWLF unit - the volume and chemical nature of the wastes managed in the MSWLF - impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste - the potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment - any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.
...	...
5-51. Effective 9 October 1993, installations are subject to limitations regarding the placement of new MSWLFs and lateral expansions in fault areas that have had displacement in Holocene time (40 CFR 258.13(a) and 258.16).	Verify that if the installation is planning to construct an MSWLF or lateral expansions within 200 ft (60 m) of a fault that it has demonstrated to the Director that an alternative setback distance of less than 200 ft (60 m) will prevent damage to the structural integrity of the MSWLF unit and will be protective of human health and the environment. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-52. Effective 9 October 1993, installations are subject to limitations regarding the placement of new MSWLFs and lateral expansions in seismic impact zones (40 CFR 258.14(a) and 258.16).	Verify that if the installation is planning to construct a MSWLF or lateral expansion in a seismic impact zone, it has demonstrated to the Director that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site. (1)(2)(9) Verify that the demonstration has been placed in the operating record and the State Director has been notified that it has been placed in the operating record. (1)(2)(9)
...	...
5-53. Effective 9 October 1993, installations are subject to limitations regarding the location of new, existing or lateral expansion of MSWLFs and lateral expansions in unstable areas (40 CFR 258.15(a) and 258.16).	Verify that if the installation has or is planning to construct a MSWLF or lateral expansion in an unstable area, it has demonstrated to the Director that engineering measures have been incorporated into the MSWLF unit's design to ensure that the integrity of the structural components will not be disrupted. (1)(2)(9) Verify that the following criteria, at a minimum, are considered in judging whether or not an area is unstable: (1)(2)(9) - onsite or local soil conditions that may result in significant differential settling - onsite or local geologic or geomorphic features onsite or local manmade features or event (both surface and subsurface). Verify that the demonstration has been placed in the operating record and the State Director has been notified that it has been placed in the operating record. (1)(2)(9) Verify that existing MSWLF units that cannot make this demonstration, are closed by 9 October 1996, unless a delay is approved by the Director. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Restilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Operating Criteria	
5-54. Effective 9 October 1993, MSWLFs are subject to requirements pertaining to procedures for excluding hazardous wastes from the landfills (40 CFR 258.20(a)).	Verify that the MSWLF has a program for detecting and preventing the disposal of regulated hazardous wastes (as defined in 40 CFR 261) and polychlorinated biphenyl (PCB) wastes that includes the following: (1)(2)(9) - random inspections of incoming loads, unless other steps are taken to ensure incoming loads do not contain hazardous wastes or PCB wastes - records of any inspections - training of facility personnel to recognize hazardous wastes and PCB wastes - notification of State Director of authorized States or the United States Environmental Protection Agency (USEPA) Regional Administrator if a regulated hazardous waste of PCB waste is discovered at the facility.
...	...
5-55. Effective 9 October 1993, MSWLFs are subject to requirements pertaining to cover materials (40 CFR 258.21).	Verify that all MSWLF units have solid waste covered with 6 in of earthen material, or another approved materials at an alternative thickness, at the end of each operating day, or more frequently, if necessary, in order to control disease vectors, fires, odors, blowing litter, and scavenging. (1)(2)(9) (NOTE: Alternative cover material and thickness must be approved by the appropriate authority; and a temporary waiver may be granted by the appropriate authority under particular extreme climatic conditions.)
...	...
5-56. Effective 9 October 1993, MSWLFs are subject to requirements pertaining to the control of disease vectors (40 CFR 258.22(a)).	Verify that the MSWLF prevents or controls onsite populations of disease vectors using techniques appropriate for the protection of human health and the environment. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

5-57. Effective 9 October 1993, MSWLFs are subject to specific requirements pertaining to the production and monitoring of methane gases (40 CFR 258.23(a) and 258.23(b)).
 	
...
	Verify that at the MSWLF the concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components). (1)(2)(9)
	
	Verify the concentration of methane gas at the facility property boundary does not exceed the lower explosive limit for methane. (1)(2)(9)
	
	Verify that the MSWLF implements a routine methane monitoring program according to the following factors: (1)(2)(9)
	
	- the type and frequency of monitoring is based on:
	  - soil conditions
	  - hydrogeological conditions surrounding the facility
	  - hydraulic conditions surrounding the facility
	  - locations of facility structures and property boundaries.
	
	Verify that monitoring occurs quarterly, at a minimum. (1)(2)(9)
	
	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-58. Effective 9 October 1993, MSWLFs are subject to notification criteria pertaining to excessive methane gas releases (40 CFR 258.23(c)).	Verify that if methane gas monitoring detects levels of gas exceeding the allowed limits, the following notification measures are taken: (1)(2)(9) - all necessary steps are taken to ensure protection of human health - the Director is notified of the protective measures - within 7 days of detection, the level of methane gas detected and the steps taken to protect human health are noted in the operating record - within 60 days of detection, a remediation plan for the methane gas releases is placed in the operating record, and the Director is notified that the plan has been implemented. (NOTE: The Director of an approved state may establish alternative schedules for demonstrating compliance with these requirements.)
...	...
5-59. Effective 9 October 1993, MSWLFs are subject to controlling air emissions (40 CFR 258.24).	Verify that there is no open burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, landclearing debris, diseased trees, or debris from emergency cleanup operations. (1)(2)(9)
...	...
5-60. Effective 9 October 1993, MSWLFs are subject to access limitations (40 CFR 258.25).	Verify that the installation controls public access to the MSWLF and prevent unauthorized vehicular traffic and illegal dumping of wastes through the use of artificial barriers, natural barriers, or both. (1)(2)(9)
...	...
5-61. Effective 9 October 1993, MSWLFs are subject to surface water control requirements (40 CFR 258.27).	Verify that the MSWLF does not cause a discharge of pollutants into waters of the United States, including wetlands, that causes noncompliance with the CWA or NPDES requirements. (1)(2)(9) (NOTE: This includes discharges of a nonpoint source of pollution that violates any approved area-wide or state-wide water quality management plan.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-62. Effective 9 October 1993, the disposal of liquids at MSWLFs is restricted (40 CFR 258.28).	Verify that bulk or noncontainerized liquid waste is not placed in MSWLF unless: (1)(2)(9) - the waste is household waste other than septic waste - the liquid waste is in a small container similar in size to that normally found in household waste - the container holding the waste is designed to hold liquids for use other than storage - the waste is leachate or gas condensate derived from the MSWLF (as long as the MSWLF is designed with a composite liner and leachate collection system). Verify that if the waste is leachate or gas condensate derived from MSWLF designed with composite liner and leachate collection system, the installation demonstrates to the Director that the MSWLF is of such a design, and the demonstration is recorded in the operating record. (1)(2)(9)
...	...
5-63. Effective 9 October 1993, MSWLFs are required to maintain records (40 CFR 258.29 (a) and 258.29(c)).	Verify that the following records are retained in an operating record, near the MSWLF, or at an approved alternate location: (1)(2)(9) - any location restriction demonstration - inspection records, training procedures, and notification procedures - gas monitoring results from monitoring and any remediation plans - any MSWLF unit design documentation for placement of leachate or gas condensate in MSWLF - any demonstration, certification, finding, monitoring, testing, or related analytical data - closure and postclosure care plans and any monitoring, testing, or related analytical data - any information demonstrating compliance with small community exemption. Verify that the installation notifies the Director when the above listed documents have been placed or added to the operating record. (1)(2)(9) (NOTE: The Director of an approved state can set alternative schedules for recordkeeping and notification requirements.)
...	...
5-64. Effective 9 October 1993, MSWLFs records are subject to inspection by certain authorities (40 CFR 258.29(b)).	Verify that all information in the operating record is furnished upon request from the Director and is available at all times for inspection by the Director. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Groundwater ***Monitoring Criteria***	
5-65. Effective 9 October 1993, MSWLFs are required to comply with groundwater monitoring schedules (40 CFR 258.50(c)).	Verify that groundwater monitoring complies with the following schedule: (1)(2)(9) - existing MSWLFs and lateral expansions less than 1 mi from a drinking water intake (surface or subsurface) must be in compliance with these requirements by 9 October 1996 - existing MSWLFs and lateral expansions greater than 1 mi but less than 2 mi from a drinking water intake (surface or subsurface) must be in compliance with these groundwater monitoring requirements by 9 October 1995 - existing MSWLFs and lateral expansions greater than 2 mi from a drinking water intake (surface or subsurface) must be in compliance with these groundwater monitoring requirements by 9 October 1996 - new MSWLFs must be in compliance with the groundwater monitoring requirements before waste can be place in the unit. (NOTE: The Director of an approved state may approve an alternate schedule.)
...	...
5-66. Effective 9 October 1993, groundwater monitoring systems at MSWLFs are subject to requirements (40 CFR 258.51(a), 258.51(c), and 258.51(d)(2)).	Verify that the groundwater monitoring system complies with the following requirements: (1)(2)(9) - it consists of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer - it represents the quality of background groundwater that has not been affected by leakage from a MSWLF - it represents the quality of groundwater passing the relevant point of compliance specified by the Director or at the waste management unit boundary - monitoring wells are cased in a manner that maintains the integrity of the monitoring well bore hole - it is certified by a qualified groundwater scientist or approved by the Director (within 14 days of this certification, the owner or operator has notified the Director that certification has been placed in the operating record). *(NOTE: When physical obstacles preclude installation of groundwater monitoring wells at the relevant point of compliance at existing units, the downgradient monitoring system may be installed at the closest practicable distance hydraulically downgradient from the relevant point of compliance specified by the Director.)*
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-67. Effective 9 October 1993, groundwater sampling and analysis at MSWLFs is subject to requirements (40 CFR 258.53(a) and 258.53(c) through 258.53(9)). ...	Verify that groundwater monitoring sampling and analysis procedures are designed to ensure monitoring results provide an accurate representation of groundwater quality at the background and downgradient well. (1)(2)(9) Verify that the sampling procedures and frequency are protective of human health and the environment. (1)(2)(9) Verify that groundwater elevations are measured in each well immediately prior to purging, and that the installation has determined the rate and direction of groundwater flow each time groundwater is sampled. (1)(2)(9) Verify that groundwater elevations in wells which monitor the same waste management area are measured within a period of time short enough to avoid temporal variation in groundwater flow that could preclude accurate determination of groundwater flow rate and direction. (1)(2)(9) Verify that the installation has established a background groundwater quality in a hydraulically upgradient or background well for each of the monitoring parameters or constituents required by its monitoring program. (1)(2)(9) Verify that the number of samples collected to establish groundwater quality data is consistent with the approved statistical procedures. (1)(2)(9) Verify that the installation specifies in the operating record one of the following statistical methods to be used in evaluating groundwater monitoring data for each hazardous constituent: (1)(2)(9) - an analysis of variance - a tolerance or prediction interval procedure - a control chart approach - an equivalent statistical test method. ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-68. Effective 9 October 1993, detection monitoring at MSWLFs is subject to specific requirements (40 CFR 258.54(a) and 258.54(b)).	Verify that, at a minimum, a detection monitoring program includes the constituents listed in Appendix 5-1. (1)(2)(9) Verify that monitoring occurs at least semiannually during the active life of the facility (including closure) and during the postclosure period. (1)(2)(9) Verify that a minimum of four independent samples from each well (background and downgradient) are collected and analyzed for the constituents listed in Appendix 5-1 during the first semiannual sampling event. (1)(2)(9) Verify that at least one sample from each well (background and downgradient) is collected an analyzed during subsequent semiannual sampling events. (1)(2)(9) (NOTE: The Director of an approved state may delete some constituents or establish an alternative test.)
...	...
5-69. Effective 9 October 1993, MSWLFs are subject to requirements pertaining to the detection of groundwater contamination (40 CFR 258.54(c)).	Verify that in the event that there is a statistically significant increase over background levels for one or more of the constituents listed in Appendix 5-1, the following steps are taken: (1)(2)(9) - within 14 days of the finding, the installation places a notice in the operating record indicating which constituents have shown statistically significant change from background levels - the Director is notified that the finding has been placed in the operating record - within 90 days an assessment monitoring program is established. (NOTE: The installation may demonstrate that a source other than the MSWLF caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. This demonstration report must be certified by a qualified groundwater scientist or approved by the Director and be placed in the operating record.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-70. Effective 9 October 1993, MSWLFs are subject to requirements pertaining to assessment monitoring programs (40 CFR 258.55(a) through 258.55(c)).	Verify that an assessment monitoring program is established whenever a statistically significant increase over background has been detected for one or more of the constituents listed in Appendix 5-1. (1)(2)(9) Verify that within 90 days of establishing an assessment monitoring program, and annually thereafter, the installation samples and analyzes the groundwater for all constituents identified in Appendix 5-2. (1)(2)(9) Verify that a minimum of one sample from each downgradient well must be collected and analyzed during each sampling event. (1)(2)(9) Verify that for any constituent detected in the downgradient wells as a result of the complete Appendix 5-2 analysis, a minimum of four independent samples from each well (background and downgradient) is collected and analyzed to establish background for the constituents. (1)(2)(9) (NOTE: The Director of an approved state may specify an appropriate alternative frequency for repeated sampling and analysis for the full set of constituents during the active life (including closure and postclosure care of the unit.)
...	...
5-71. Effective 9 October 1993, MSWLFs are subject to notification requirements pertaining to assessment monitoring (40 CFR 258.55(d) and 258.55(e)).	Verify that after obtaining the results from the initial or subsequent sampling events required, the following steps are taken: (1)(2)(9) - within 14 days, a notice is placed in the operating record identifying the Appendix 5-2 constituents that have been detected - the Director is notified that the notice has been placed in the record - within 90 days, and on at least a semiannual basis thereafter, the background and downgradient monitoring wells are resampled, and analyses conducted for all constituents in Appendix 5-1 and for those constituents in Appendix 5-2 that are detected in the assessment monitoring program - the results of these analyses are placed in the operating record. - at least one sample from each well (background and downgradient) is collected and analyzed during these sampling events. (NOTE: The Director of an approved state may specify an alternative monitoring frequency.) Verify that if the concentrations of all Appendix 5-2 constituents are shown to be at or below background values, using an approved statistical procedure, for two consecutive sampling events, the installation notifies the Director of the finding, and returns to detection monitoring. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-72. Effective 9 October 1993, MSWLFs are subject to notification requirements pertaining to noncompliance with the groundwater protection standard (40 CFR 258.55(g)).	Verify that if, during detection monitoring, one or more Appendix 5-2 constituents are detected at statistically significant levels above the groundwater protection standards specified according to the following, the Director and all appropriate local government officials are notified, and a notice is placed in the operating record: (1)(2)(9) - for constituents that have a maximum contamination level (MCL) listed in the *SDWA*, use the MCL for that constituent - for constituents that are not included in the SDWA, use the background level established for that constituent in the detection monitoring program - for constituents for which the background level is higher than the MCL identified in the SDWA, use the background concentration. Verify that the installation also takes the following steps: (1)(2)(9) - the nature and extent of the release is investigated by the installation of additional monitoring wells - at least one additional monitoring well is installed at the facility boundary in the direction of contamination migration - notification of all persons who own land or reside on land that directly overlies any part of the plume of contamination that has migrated offsite - initiation of an assessment of corrective measures within 90 days. (NOTE: The installation may demonstrate that a source other than the MSWLF caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. This demonstration report must be certified by a qualified groundwater scientist or approved by the Director and be placed in the operating record.)
...	...

5-73. Effective 9 October 1993, MSWLFs are subject to criteria for assessing potential groundwater remediation actions (40 CFR 258.56).	Verify that within 90 days of finding Appendix 5-2 constituents at significant levels exceeding the groundwater protection standards, an assessment of potential remedial actions is made and includes the following: (1)(2)(9)
	
	- analysis of effectiveness of potential corrective measures in meeting all the requirements and objectives of the remedy, such as:
	  - the performance, reliability, ease of implementation, and potential impacts of potential remedies
	  - the time required to begin and complete the remedy
	  - the cost of the remedy implementation
	  - state and local requirements affecting remediation
	  - discussion of corrective measures with public, or interested parties.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

5-74. Effective 9 October 1993, the selection of remedial measures for groundwater contamination is subject to specific criteria (40 CFR 258.57(a) through 258.57 (c)).	Verify that corrective measures are selected according to the following criteria: (1)(2)(9)
	
	- are protective of human health and the environment
	- attain the groundwater protection standard
	- control the source(s) of releases so as to reduce or eliminate further release of Appendix 5-2 constituents into the environment
	- comply with standards for management of wastes and, the following evaluation factors are considered:
	  - long- and short-term practicability, effectiveness, protectiveness, and reliability
	  - magnitude of reduction of existing risks
	  - magnitude of residual risks in terms of further releases of wastes following remediation
	  - type and degree of long-term management (including monitoring, operation, and maintenance)
	  - short-term risks to community, workers, or the environment during implementation
	  - time period until full remediation.
	
	Verify that the installation has notified the Director within 14 days of selecting a remedy, and that the selection and the reason for its selection are noted in the operating record. (1)(2)(9)
	
	Verify that remedial activities take place within a reasonable period of time. (1)(2)(9)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-75. Effective 9 October 1993, groundwater remediation activities are are required to meet specific scheduling requirements (40 CFR 258.57(d)).	Verify that the initiation of remedial activities occurs within a reasonable period of time, depending on: (1)(2)(9) - extent and nature of contamination - practical capabilities of remedial technologies - availability of treatment or disposal capacity for wastes managed during the implementation period - desirability of utilizing technologies not currently available, but that may offer significant advantages over existing methods - potential risks to human health and the environment - resource value of the aquifer involved - practicable capability of the installation.
...	...
5-76. Installations are required to implement corrective action programs according to specific parameters (40 CFR 258.58(a) through 258.58(d)).	Verify that, based on the established schedule for initiation and completion of activities, the installation: (1)(2)(9) - establishes and implements a corrective action groundwater monitoring program that: - at a minimum meets the assessment monitoring requirements of 40 CFR 258.55) - indicates the effectiveness of the selected corrective action remedy - demonstrates compliance with groundwater protection standards - implements to selected corrective action program - takes any interim measure necessary to ensure the protection of human health and the environment. Verify that if the installation determines that compliance is not being achieved with the selected remedy, it selects another method or technique that can practicably achieve compliance. (1)(2)(9)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Restilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

5-76. (continued)	Verify that if compliance cannot be practicably achieved with currently available methods, the installation: (1)(2)(9)
	
	- obtains certification of a qualified groundwater scientist or approval of a Director of an approved state substantiating this claim
	- implements alternate measures to control exposure of humans or the environment to residual contamination as necessary to protect human health and the environment
	- implements alternate measures for control of the sources of contamination, or for removal of decontamination of equipment, units, devices, or structures that are:
	  - technically practicable
	  - consistent with the overall objective of the remedy
	- notify the State Director within 14 days that a report justifying the alternative measures prior to implementation has been placed in the operating record.
	
	Verify that all solid wastes that are managed in relation to a remedy or an interim measure are managed as follows: (1)(2)(9)
	
	- in a manner that is protective of human health and the environment
	- in a manner that complies with applicable RCRA requirements.

...	...
Closure Criteria	
5-77. Effective 9 October 1993, MSWLFs are subject to specific final cover design requirements (40 CFR 258.60(a) and 258.60(b)).	Determine whether the installation has plans to close a MSWLF. (1)(2)(9) Verify that that the final cover is designed to minimize infiltration and erosion, according to the following criteria: (1)(2)(9) - bottom liner system or natural subsoils present, or a permeability no greater then 1×10^{-4} cm/second (sec), whichever is less - it minimizes infiltrations through the closed MSWLF by use of an infiltration layer that contains a minimum 18 in. of earthen material - it minimizes erosion of the final cover by the use of an erosion layer that contains a minimum 6 in. of earthen material that is capable of sustaining native plant growth. (NOTE: The Director of an approved state may approve an alternate final cover design.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-78. Effective 9 October 1993, MSWLFs are subject to specific closure plan requirements (40 CFR 258.60(c)).	Verify that the installation has prepared a written closure plan that includes the following information: (1)(2)(9) - a description of the final cover, and methods and procedures to be used to install the cover - an estimate of the largest area of the MSWLF unit ever requiring a final cover any time during its active life - an estimate of the maximum inventory of wastes ever onsite over its active life - a schedule for completing all activities necessary to satisfy closure requirements.
...	...
5-79. Effective 9 October 1993, MSWLFs are subject to specific closure notification requirements (40 CFR 258.60(d)).	Verify that the installation has notified the Director of the intent to close the MSWLF. (1)(2)(9) Verify that the notice of intent to close has been placed in the operating record. (1)(2)(9)
...	...
5-80. Effective 9 October 1993, MSWLFs are subject to specific closure criteria (40 CFR 258.60(f) and 258.60(g)).	Verify that the installation begins closure activities no later than 30 days after the date the MSWLF receives the final receipt of waste, or no later than one year after the most recent receipt of waste (if the unit has remaining capacity). (1)(2)(9) Verify that the installation completes closure activities of each MSWLF unit within 180 days following the beginning of closure. (1)(2)(9)
...	...
5-81. Effective 9 October 1993, MSWLFs are subject to specific postclosure notification requirements (40 CFR 258.60(h)).	Verify that the installation notifies the Director that a certification signed by an independent registered professional engineer has been completed and placed in the operating record. (1)(2)(9) Verify that the installation records a notation on the deed to the landfill facility property, or equivalent instrument examined in a title search), that the property has been used as a landfill, and its use is restricted. (1)(2)(9) Verify that the notation is placed in the operating record, and the Director is notified of its placement. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Postclosure Care Requirements	
5-82. Effective 9 October 1993, MSWLFs are subject to specific postclosure care requirements (40 CFR 258.61(a)).	Verify that the installation conducts postclosure care of its MSWLF in the following manner, for 30 yr: (1)(2)(9) - maintains the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and to prevent run-on and runoff from eroding or otherwise damaging the final cover - maintains and operates the leachate collection system - monitors the groundwater and maintains the groundwater monitoring system - maintains and operates the gas monitoring system.
...	...
5-83. Effective 9 October 1993, MSWLFs are subject to specific postclosure plan criteria (40 CFR 258.61(c) and 258.61(d)).	Verify that the installation has prepared a postclosure plan that includes the following information: (1)(2)(9) - a description of the monitoring and maintenance activities - the name, address, and telephone number of the person or office to contact about the facility during the postclosure period - a description of the planned uses of the property during the postclosure period. Verify that the postclosure plan has been placed in the operating record and the Director has been notified of its placement. (1)(2)(9)
...	...
5-84. Effective 9 October 1993, MSWLFs are subject to specific postclosure certification requirements (40 CFR 258.61(e)).	Verify that following completion of the postclosure care period, a certification signed by an independent registered professional engineer is completed, placed in the operating record, and the Director is notified of its placement. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Design Criteria	
5-85. Effective 9 October 1993, new MSWLFs and lateral expansions are required to meet specific design criteria (40 CFR 258.40(a)).	Verify that the MSWLF is of an approved design that ensures that the concentration values listed in Appendix 5-3 are not exceeded in the uppermost aquifer at the relevant point of compliance. (1)(2)(9) Verify that the MSWLF has a composite liner and a leachate collection system that is designed and constructed to maintain less than a 30 cm depth of leachate over the liner. (1)(2)(9)
...	...
5-86. Effective 9 October 1993, run-on/runoff control systems at MSWLFs waste landfills are required to meet specific design requirements (40 CFR 258.26).	Verify that the run-on control system is designed and maintained to prevent flow onto the active portion of the landfill during the peak discharge from a 25-yr storm. (1)(2)(9) Verify that the runoff control system from the active portion of the landfill is designed and maintained to collect and control at least the water volume resulting from a 24-h, 25-yr storm. (1)(2)(9) Verify the runoff does not cause a discharge of pollutants into waters of the United States, including wetlands, that causes noncompliance with the CWA or NPDES requirements. (1)(2)(9)
...	...
THERMAL PROCESSING FACILITIES	
5-87. The operator at a thermal processing facility is required to develop SOPs that address specific issues (AR 420-47, para 4-5).	Determine if the installation has a thermal processing unit. (1)(2)(9) Verify that the standard operating procedures address the following issues: (1)(2)(9) - tasks to be performed - operating procedures - safety precautions - wastes excluded from thermal processing.
...	...
5-88. Installations with thermal processing facilities designed to process or are processing 50 tons or more per day of municipal solid wastes are required to provide special areas for special wastes while they await processing (40 CFR 240.100(a), 240.200-2(b), and 240.200-3(a)).	Verify that storage areas for bulky wastes, digested and dewatered sludges from wastewater treatment facilities, raw sewage sludges, and septic tank pumpings are clearly marked. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Revitalization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-89. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to train personnel in any unusual handling required by acceptance of special wastes (40 CFR 240.100(a) and 240.200-3(b)).	Verify that personnel are thoroughly trained to handle bulky wastes, digested and dewatered sludges from wastewater treatment facilities, raw sewage sludges, and septic tank pumpings. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...
5-90. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to inform regular users about materials which are excluded (40 CFR 240.100(a) and 240.201-3(a)).	Verify that regular users are given a list of excluded materials. (1)(2)(9) Verify that a list of excluded materials is posted prominently at the facility. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...
5-91. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to have certain procedures and precautions to deal with unacceptable wastes which are delivered to or left at the facility (40 CFR 240.100(a) and 240.201-3(b)).	Verify that there is an operating plan which specifies procedures and precautions to be taken if unacceptable wastes are delivered to or left at the facility. (1)(2)(9) Verify that operating personnel are thoroughly trained in such procedures. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-92. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to meet certain site selection criteria (40 CFR 240.100(a), 240.202(a), and 240.202 (b)).	Verify that the facility is located in an area zoned for industrial use and has adequate utilities to serve it. (1)(2)(9) Verify that the site is accessible by permanent roads leading from the public road system. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...
5-93. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to have plans for the design of new facilities or modifications to existing facilities prepared or approved by a professional engineer (40 CFR 240.100(a) and 240.203-1).	Verify that plans for the design of new facilities or modifications to existing facilities are prepared or approved by a professional engineer. (1)(2)(9) Verify that plans have been approved by the responsible regulatory authorities and that construction was not initiated until approval was received. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...
5-94. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to operate in a manner which will protect water quality (40 CFR 240.100(a) and 240.204).	Verify that all waters discharged from the facility are treated to meet the most stringent of applicable water quality standards. (1)(2)(9) Verify that when monitoring instrumentation indicates excessive discharge contamination, appropriate adjustments are made to lower the concentrations to acceptable levels. (1)(2)(9) Verify that in the event of an accidental spill, the local regulatory agency is notified immediately. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-95. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to operate in a manner which protect air quality (40 CFR 240.100(a) and 240.205).	Verify that emissions do not exceed applicable existing emission standards. (1)(2)(9) Verify that all emissions, including dust from vents, are controlled. (1)(2)(9) Verify that when monitoring instrumentation indicates excessive emissions, appropriate adjustments are made to lower the emission to acceptable levels. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...
5-96. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to control vectors (40 CFR 240.100(a) and 240.206).	Verify that a housekeeping schedule is established and maintained. (1)(2)(9) Verify that solid waste and residue do not accumulate at the facility for more than one week. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...
5-97. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to operate in an aesthetically acceptable manner (40 CFR 240.100(a) and 240.207).	Verify that a routine housekeeping and litter removal schedule is established and implemented. (1)(2)(9) Verify that solid wastes which cannot be processed by the facility are removed on a weekly basis. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...
5-98. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to dispose of residue and other solid waste products resulting from the thermal process in an environmentally acceptable manner (40 CFR 240.100(a) and 240.208).	Verify that the furnace operator records the estimated percentage of unburned combustibles in a log. (1)(2)(9) Verify that if residue or fly ash is collected in a wet condition, it is drained of free moisture. (1)(2)(9) Verify that residue and fly ash are transported by means that prevent the loads from shifting, falling, or blowing from the container. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-99. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to be designed, operated, and maintained in a manner to protect the health and safety of personnel (40 CFR 240.100(a), 240.209, and DOD Directive 4165.60, para V(A)).	Verify that procedures are developed for operation in emergency situations. (1)(2)(9) Verify that approved respirators or self-contained breathing apparatus is available at convenient locations. (1)(2)(9) Verify that training in first aid practices and emergency procedures is given to all personnel. (1)(2)(9) Verify that personal safety devices are provided to all personnel. (1)(2)(9) Verify that any regular user or employee that poses a safety hazard is barred from the facility and reported to the responsible agency. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...
5-100. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to follow certain general operation criteria (40 CFR 240.100(a), 240.210, and DOD Directive 4165.60, para V(A)).	Verify that the facility supervisor is experienced in the operation of the type of facility designed. (1)(2)(9) Verify that alternate and standby disposal and operating procedures are established for implementation during emergencies, air pollution episodes, and shutdown periods. (1)(2)(9) Verify that a routine maintenance schedule is established. (1)(2)(9) Verify that engineering drawings are updated as facility is modified. (1)(2)(9) Verify that key operational procedures are prominently posted. (1)(2)(9) Verify that equipment manuals, catalogs, spare parts lists, and spare parts are readily available at the facility. (1)(2)(9) Verify that training opportunities are available for personnel. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-101. Installations with thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal solid wastes are required to provide records and monitoring data (40 CFR 240.100(a), 240.211, and DOD Directive 4165.60, para V(A)).	Verify that extensive monitoring and recordkeeping is practiced during: (1)(2)(9) - the first 12 to 18 mo of operation of a new or renovated facility - periods of high air pollution - periods of upset conditions at the facility. Verify that operating records are kept in a daily log and include as a minimum: (1)(2)(9) - the total weight and volume of solid waste received during each shift, including the number of loads received, the ownership or specific identity of delivery vehicles, the source and nature of the solid wastes accepted - furnace and combustion chamber temperatures recorded at least every 60 min and as changes are made, including explanations for abnormally high and low temperatures - rate of operation, such as grate speed - overfire and underfire air volumes and pressure and distribution recorded at least every 60 min and as changes are made - weights of bottom ash, grate siftings, and fly ash, individually or combined, recorded at intervals appropriate to normal facility operation - estimated percentages of unburned material in the bottom ash - water used on each shift for bottom ash quenching and scrubber operation (NOTE: Representative samples of process waters should be collected and analyzed as recommended by the responsible agency.) - power produced and utilized each shift - if steam is produced, quality, production totals and consumption rates should be recorded - auxiliary fuel used each shift - gross calorific value of daily representative samples of bottom ash, grate siftings, and fly ash (NOTE: Sampling time should be varied so that all shifts are monitored on a weekly basis.) - required emission measurements and laboratory analyses - complete records of monitoring instruments - problems encountered and methods of solution. Verify that an annual report is prepared and that it includes the following information: (1)(2)(9) - minimum, average, and maximum daily volume and weight of waste received and processed, summarized on a monthly basis - a summary of the laboratory analyses including at least monthly averages

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-101. (continued)	- number and qualifications of personnel in each job category - total manhours per week - number of state certified or licensed personnel - staffing deficiencies - serious injuries, their cause, and preventive measures instituted - an identification and brief discussion of major operational problems and solutions - adequacy of operation and performance with regard to environmental requirements, the general level of housekeeping and maintenance, testing and reporting proficiency, and recommendations for corrective actions - a copy of all significant correspondence, reports, inspection reports, and any other communications from enforcement agencies. Verify that a methodology for evaluating the facility's performance has been developed. (1)(2)(9) (NOTE: This does not apply to hazardous, agricultural, or mining wastes.)
...	...
RESOURCE RECOVERY FACILITIES	
5-102. Installations are required to establish or utilize resource recovery facilities (40 CFR 245.200-1).	Verify that a resour recovery facility has been established or utilized unless installation is made a determination not to utilize or establish a resource recovery fac ity. (1)(2)(9) (NOTE: Federal agencies that make the determination not to establish or utilize a resource recovery facility must make a report to the Administrator fully explaining that determination.)
...	...
5-103. Installations which establish or utilize a resource recovery facility are required to design such facilities to process a standard amount of solid waste (40 CFR 245.200-1(e)).	Verify that facility is designed to process at least 65 percent by wet weight of the input solid waste into recycled material, fuel, or energy. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DISPOSAL OF REFUSE FROM OUTSIDE THE UNITED STATES **5-104.** Garbage from outside the United States which is on or unloaded from vessels or aircraft arriving in the United States and certain territories and possessions is subject to certain inspection and disposal requirements to prevent dissemination of pests and diseases (7 CFR 330.400(d) and 330.400(g)(1 and 2)).	Verify that garbage on or unloaded from vessels or aircraft arriving in the places listed below complies with certain inspection and disposal requirements: (1)(9) - the United States from any place outside of the United States - the continental United States from Hawaii or any territory or possession - any territory or possession from any other territory or possession or Hawaii - Hawaii from any territory or possession. Inspect arriving vessels and aircraft and observe that: (1)(9) - garbage is contained in tight leakproof covered receptacles inside guard rails on vessels - garbage is removed in tight, leakproof covered containers under direction of U.S. Department of the Army (U.S. DA) inspector to an approved facility for incineration, sterilization, or grinding into an approved sewage system, or - garbage is removed for other handling and under supervision approved by the U.S. DA. Verify that the installation has received approval from Administrator, Animal and Plant Health Inspection Service, and USDA for use of sewage system for disposal. (1)(2)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

Appendix 5-1

Consituents for Detection Monitoring[1]
(40 CFR 258, Appendix I)

Common name[2]	CAS RN[3]
Inorganic Constituents	
(1) Antimony	(Total)
(2) Arsenic	(Total)
(3) Barium	(Total)
(4) Berylium	(Total)
(5) Cadmium	(Total)
(6) Chromium	(Total)
(7) Cobalt	(Total)
(8) Copper	(Total)
(9) Lead	(Total)
(10) Nickel	(Total)
(11) Selenium	(Total)
(12) Silver	(Total)
(13) Thallium	(Total)
(14) Vanadium	(Total)
(15) Zinc	(Total)
Organic Constituents	
(16) Acetone	67-64-4
(17) Acrylonitrile	107-13-1
(18) Benzene	71-43-1
(19) Bromochloromethane	74-97-5
(20) Bromodichloromethane	75-27-4
(21) Bromoform; Tribromomethane	75-25-2
(22) Carbon disulfide	75-15-0
(23) Carbon tetrachloride	56-23-5
(24) Chlorobenzene	108-90-7
(25) Chloroethane; Ethyl chloride	75-00-3
(26) Chloroform; Trichloromethane	67-66-3
(27) Dibromochloromethane; Chlorodibromomethane	124-48-1
(28) 1,2-Dibromo-3-chlorpropane; DBCP	96-12-8
(29) 1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4
(30) o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1
(31) p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7
(32) trans-1,4-Dichloro-2-butene	110-57-6
(33) 1,1-Dichloroethane; Ethylidene chloride	75-34-3
(34) 1,2-Dichloroethane; Ethlyene dichloride	107-06-2
(35) 1,1-Dichloroethylene; 1-1-Dichloroethene; Vinylidene chloride	75-35-4
(36) cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2
(37) trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5
(38) 1,2-Dichlorpropane; Propylene dichloride	78-87-5
(39) cis-1,3-Dichlorpropene	10061-01-5

Appendix 5-1 (continued)

Common name[2]	CAS RN[3]
(40) trans-1,3-Dichlorpropene	10061-02-6
(41) Ethylbenzene	100-41-4
(42) 2-hexanone; Methyl butyl ketone	591-78-6
(43) Methyl bromide; Bromomethane	74-83-9
(44) Methyl chloride; Chloromethane	74-87-3
(45) Methylene bromide Dibromomethane	74-95-3
(46) Methylene chloride; Dichloromethane	75-09-2
(47) Methyl ethyl ketone; MEK; 2-Butanone	74-93-3
(48) Methyl iodide; Iodomethane	74-88-4
(49) 4-Methyl-2-pentanone; Methyl isobutyl isobutyl ketone	108-10-1
(50) Styrene	100-42-5
(51) 1,1,1,2-Tetrachloroethane	630-20-6
(52) 1,1,2,2-Tetrachloroethane	79-34-5
(53) Tetrachloroethylene; Tetracholorethene; Perchloroethylene	127-18-4
(54) Toluene	108-88-3
(55) 1,1,1-Trochlorethane; Methylchloroform	71-55-6
(56) 1,1,2-Trichloroethane	79-00-5
(57) Trichloroethylene; Trichlorethene	79-01-6
(58) Trichlorofluoromethane; CFC-11	75-69-4
(59) 1,2,3-Trichloropropane	96-18-4
(60) Vinyl acetate	108-05-4
(61) Vinyl chloride	75-01-4
(62) Xylenes	1330-20-7

[1] This list contains 47 volitile organics for which possible analytical procedures provided in EPA Report SW-846 "Test Methods for Evaluating Solid Waste," third edition, November 1986, as revised December 1987, includes Method 8260; and 15 metals for which SW-846 provides either Method 6010 or a method from the 7000 series of methods.

[2] Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

[3] Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground-water that contain this element are included.

Appendix 5-2

List of Hazardous Inorganic and Organic Constituents (40 CFR 258 Appendix II)

Common Name	CAS RN	Suggested methods	PQL (mg/L)
Acenaphthene	83-32-9	8100	200
		8270	10
Acenaphthylene	208-96-8	8100	200
		8270	10
Acetone	67-64-1	8260	100
Acetonitrile; Methyl cyanide	75-05-8	8015	100
Acetophenone	98-86-2	8270	10
2-Acetylaminofluorene; 2-AAF	53-96-3	8270	20
Acrolein	107-02-8	8030	5
		8260	200
Aldrin	309-00-2	8080	0.05
		8270	10
Allyl chloride	107-05-1	8010	5
		8260	10
4-Aminobiphenyl	92-67-1	8270	20
Anthracene	120-12-7	8100	200
		8270	10
Antimony	(Total)	6010	300
		7040	2000
		7041	30
Barium	(Total)	6010	20
		7080	1000
Benzene	71-43-2	8020	2
		8021	0.1
		8260	5
Benzo[a]anthracene; Benzanthracene	56-55-3	8100	200
		8270	10
Benzo[b]fluoranthene	205-99-2	8100	200
		8270	10
Benzo[k]fluoranthene	207-08-9	8100	200
		8270	10
Benzo[ghi]perylene	191-24-2	8100	200
		8270	10
Benzo[a]pyrene	50-32-8	8100	200
		8270	10
Benyl alcohol	100-51-5	8270	20
Beryllium	(Total)	6010	3
		7090	50
		7091	2
alpha-BHC	319-84-6	8080	0.05
		8270	10
beta-BHC	319-85-7	8080	0.05
		8270	20
delta-BHC	319-86-8	8080	0.1

Common Name	CAS RN	Suggested methods	PQL (mg/L)
		8270	20
gamma-BHC; Lindane	58-89-9	8080	0.05
		8270	20
Bis(2-chloroethoxy)methane	111-91-1	8110	5
		8270	10
Bis(2-chloroethyl)ether; Dichloroethyl ether	111-44-4	8110	3
		8270	10
Bis-(2-chlror-1-methyl) ether; 2,2-Dichloro-diisopropyl ether; DCIP, See note 7	108-60-1	8110	10
		8270	10
Bis(2-ethylhexyl) phthalate	117-81-7	8060	20
Bromochloromethane; Chlorobromomethane	74-97-5	8021	0.1
		8260	5
Bromodichloromethane; Dibromochloromethane	75-27-4	8010	1
		8021	0.2
		8260	5
Bromoform; Tribromomethane	75-25-2	8010	2
		8021	15
		8260	5
4-Bromophenyl phenyl ether	101-55-3	8110	25
		8270	10
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	8060	5
		8270	10
Cadmium	(Total)	6010	40
		7130	50
		7131	1
Carbon disulfide	75-15-0	8260	100
Carbon tetrachloride	56-23-5	8010	1
		8021	0.1
		8260	10
Chlordane	See NOTE 8	8080	0.1
		8270	50
p-Chloroaniline	106-47-8	8270	20
Chlorobenzene	108-90-7	8010	2
		8020	2
		8021	0.1
		8260	5
Chlorobenzilate	510-15-6	8270	10
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	8040	5
		8270	20
Chloroethane; Ethyl chloride	75-00-3	8010	5
		8021	1
		8260	5
Chloroform; Trichloromethane	67-66-3	8010	0.5
		8021	0.2
		8260	5
2-Chloronaphthalene	91-58-7	8120	10
		8270	10
2-Chlorophenol	95-57-8	8040	5
		8720	10

Common Name	CAS RN	Suggested methods	PQL (mg/L)
4-Chlorophenyl phenyl ether	7005-72-3	8110	40
		8270	10
Chloroprene	126-99-8	8010	50
		8260	20
Chromium	(Total)	6010	70
		7190	500
		7191	10
Chrysene	8100	200	
		8270	10
Cobalt	218-01-9	8100	200
		7200	500
		7201	10
Copper	(Total)	6010	60
		7210	200
		7211	10
m-Cresol; 3-methylphenol	108-39-4	8270	10
o-Cresol; 2-methlphenol	95-48-7	8270	10
p-Cresol; 4-methylphenol	106-44-5	8270	10
Cyanide	57-12-5	9010	200
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	8150	10
4,4-DDD	72-54-8	8080	0.1
		8270	10
4,4-DDE	72-55-9	8080	0.05
		8270	10
4,4-DDT	50-29-3	8080	0.1
		8270	10
Diallate	2303-16-4	8270	10
aDibenz[a,h]anthracene	53-70-3	8100	200
		8270	10
Dibenzofuran	132-64-9	8270	10
Dibromochloromethane; Chlorodibromomethane	124-48-1	8010	1
		8021	0.3
		8260	5
1,2-Dibromo-30chloropropane; DBCP	96-12-8	8011	0.1
		8021	30
		8260	25
1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	8011	0.1
		8021	10
		8260	5
Di-n-butyl phthalate	84-74-2	8060	5
		8270	10
o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	8010	2
		8020	5
		8021	0.5
		8120	10
		8260	5
		8270	10
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	8010	5
		8020	5
		8021	0.2
		8120	10

Common Name	CAS RN	Suggested methods	PQL (mg/L)
		8120	10
		8260	5
p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	8010	2
		8020	5
		8021	0.1
		8120	15
		8260	5
		8270	10
3,3-Dichlorobenzidine	91-94-1	8270	20
trans-1,4-Dichloro-2-butene	110-57-6	8260	100
Dichlorodifluoromethane; CFC 12;	75-71-8	8021	
		8260	5
1,1-Dichloroethane chloride	75-34-3	8010	1
		8021	0.5
		8260	5
1,2-Dichloroethane; Ethylene dichloride	107-06-2	8010	0.5
		8021	0.3
		8260	5
1,1-Dichloroethylene; 1,1-Dichloroethane; Vinylidene chloride	75-35-4	8010	1
		8021	0.5
		8260	5
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	8021	0.2
		8260	5
trans-1,2-Dichloroethylene trans-1,2-Dichloroethene	156-60-5	8010	1
		8021	0.5
		0260	5
2,4-Dichlorophenol	120-83-2	8040	5
		8270	10
2,6-Dichlorophenol	120-83-2	8040	5
1,2-Dichloropropane; Propylene dichloride	78-87-5	8010	
		8021	0.05
		8260	5
1,3-Dichloropropane; Isopropylidene chloride	594-20-7	8021	0.3
		8260	5
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	8021	0.5
		8260	15
1,1-Dichloropropene	563-58-6	8021	0.2
		8260	5
cis-1,3-Dichloropropene	10061-01-5	8010	5
		8260	10
trans-1,3-Dichloropropene	10061-02-6	8010	5
		8260	10
Dieldrin	60-57-1	8080	0.05
		8270	10
Diethyl phthalate	84-66-2	8060	5
		8270	20
0,0-Diethyl 0-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	8141	5
		8270	20
Dimethoate	60-51-5	8141	3
		8270	20

Common Name	CAS RN	Suggested methods	PQL (mg/L)
p-(Dimethylamino)azobenzene	60-11-7	8270	10
7,12-Dimethylbenxz[a]anthracene	57-97-6	8270	10
3,3-Dimethylbenzidine	119-93-7	8270	10
2,4-Dimethlphenol; m-Xylenol	105-87-9	5	
		8040	5
Dimethyl phthalate	131-11-3	8060	10
		8270	10
m-Dinitrobenzene	99-65-0	8270	20
4,6-Dinitro-o-cresol 4,6-Dinitro-2-methylphenol	534-52-1	8040	150
		8270	50
2,4-Dinitrophenol	51-28-54	8040	150
		8270	50
2,4-Dinitrotoluene	121-14-2	8090	0.2
		8270	10
2,6-Dinitrotoluene	606-20-2	8090	0.1
8270	10		
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	8150	1
		8270	20
Di-n-octyl phthalate	117-84-0	8060	30
		8270	10
Diphenylamine	122-39-4	8270	10
Disulfoton	298-04-4	8140	2
		8141	0.5
		8270	10
Endosulfan I	959-98-8	8080	0.1
		8270	20
Endosulfan II	33213-65-9	8080	0.05
		8270	20
Endodulfan sulfate	1031-07-8	8080	0.5
		8270	10
Endrin	72-20-8	8080	0.1
		8270	20
Endrin aldehyde	7421-93-4	8080	0.2
		8270	10
Ethylbenzene	100-41-4	8020	2
		8221	0.05
		8260	5
Ethyl methacrylate	97-63-2	8015	5
		8260	10
		8270	10
Ethyl methanesulfonate	62-50-0	8270	20
Famphur	52-85-7	8270	20
Fluoranthene	206-44-0	8100	200
		8270	10
Fluorene	86-73-7	8100	200
		8270	10
Heptachlor	76-44-8	8080	0.05
		8270	10
Heptachlor epoxide	1024-57-3	8080	1
		8270	10

Common Name	CAS RN	Suggested methods	PQL (mg/L)
Hexachlorobenzene	118-74-1	8120	0.5
		8270	10
Hexachlorobutadiene	87-68-3	8120	0.5
		8120	5
		8260	10
		8270	10
Hexachlorocyclopentadiene	77-47-4	8120	5
		8270	10
Hexachloroethane	67-72-1	8120	0.5
		8260	10
		8270	10
Hexachloropropene	188-71-7	8270	10
2-Hexanone; Methyl butyl ketone	591-78-6	8260	50
Indenol(1,2,3-cd)pyrene	193-39-5	8100	200
		8270	10
Isopbutyl alcohol	78-83-1	8015	50
		8240	100
Isodrin	465-73-6	8270	20
		8260	10
Isophorone	78-59-1	8090	60
		8270	10
Isosafrole	78-59-1	8090	60
		8270	10
Isosafrole	120-58-1	8270	10
Kepone	143-50-0	8270	20
Lead	(Total)	6010	400
		7420	1000
		7421	10
Mercury	(Total)	7470	2
Methacrylonitrile	126-98-7	8015	5
		8260	100
Methapyrilene	91-80-5	8270	100
Methoxychlor	72-43-5	8080	2
		8270	10
Methyl bromide; Bromomethane	74-83-9	8010	20
		8021	10
Methyl chloride; Chloromethane	74-87-3	8010	20
		8021	0.3
3-Methylcholanthrene	56-49-5	8270	10
Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	8015	10
		8260	100
Methyl iodide; Iodomethane	74-88-4	8010	40
		8260	10
Methyl methacrylate	80-62-6	8015	2
		8260	30
Methyl methanesulfonate	66-27-3	8270	10
2-Methylnaphthalene	91-57-6	8270	10
Methyl parathion; Parathion methyl	298-00-0	8140	0.5
		8141	1
		8270	10

Common Name	CAS RN	Suggested methods	PQL (mg/L)
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	8015	5
		8260	100
Methylene bromide; Dibromomethane	74-95-3	8010	15
		8021	20
		8260	10
Methylene chloride; Dichloromethane	75-09-2	8010	5
		8021	0.2
		8260	10
Naphthalene	91-20-3	8021	0.5
		8100	200
		8260	5
		8270	10
1,4-Naphthoquinone	130-15-4	8270	10
1-Naphthylamine	134-32-7	8270	10
2-Naphthylamine	91-59-8	8270	10
Nickel	(Total)	6010	150
		7520	400
o-Nitroaniline; 2-Nitroaniline	88-74-4	8270	50
m-Nitroaniline; 3-Nitroanile	99-09-2	8270	50
p-Nitroaniline; 4-Nitroaniline	100-01-6	8270	20
Nitrobenzene	98-95-3	8090	40
		8270	10
o-Nitrophenol; 2-Nitrophenol	88-75-5	8040	5
		8270	10
p-Nitrophenol; 4-Nitrophenol	100-02-7	8040	10
		8270	50
N-Nitrosodi-n-butylamine	924-16-3	8270	10
N-Nitrosodiethylamine	55-18-5	8270	20
N-Nitrosodimethylamine	62-75-9	8070	2
N-Nitrosodiphenylamine	86-30-6	8070	5
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine	86-30-6	8070	10
N-Nitrosomethylethalamine	10595-95-6	8070	10
N-Nitrosopiperidine	100-75-4	8270	20
N-Nitrosopyrrolidine	930-55-8	8270	40
5-Nitro-o-toluidine	99-55-8	8270	10
Parathion	56-38-2	8141	0.5
		8270	10
Pentachlorobenzene	608-93-5	8270	10
Pentachloronitrobenzene	82-68-8	8270	20
Pentachlorophenol	87-86-5	8040	5
		8270	50
Phenacetin	62-44-2	8270	20
Phenanthrene	85-01-8	8100	200
		8270	10
Phenol	108-95-2	8040	1
p-Phenylenediamine	106-50-3	8270	10
Phorate	298-02-2	8140	2
		8141	0.5
		8270	10

Common Name	CAS RN	Suggested methods	PQL (mg/L)
Polychlorinated biphenyls (PCBs); Aroclors	see NOTE 9	8080	50
		8270	200
Pronamide	23950-58-5	8270	10
Propionitrile; Ethyl cyanide	107-12-0	8015	60
		8260	150
Pyrene	129-00-0	8100	200
		8270	10
Safrole	94-59-1	8270	10
Selenium	(Total)	6010	750
		7740	20
		7741	20
Silver	(Total)	6010	70
		7760	100
		7761	10
Silvex; 2,4,5-TP	93-72-1	8150	2
Styrene	100-42-5	8020	1
		8021	0.1
		8260	10
Sulfide	18496-25-8	9030	4000
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	8150	2
1,2,4,5-Tetrachlorobenzene	95-94-3	8270	10
1,1,1,2-Tetrachloroethane	630-20-6	8010	5
		8021	0.05
		8260	5
1,1,2,2-Tetrachloroethane	79-34-5	8010	0.5
		8021	0.5
		8260	5
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-8	8010	0.5
		8021	0.5
		8260	5
2,3,4,6-Tetrachlorophenol	58-90-2	8270	10
Thallium	(Total)	6010	40
		7840	1000
		7841	10
Tin	(Total)	6010	40
Toluene	108-88-3	8020	2
		8021	0.1
		8260	5
o-Toluidine	95-53-4	8270	10
Toxaphene	See NOTE 10	8080	2
1,2,4-Trichlorobenzene	120-82-1	8021	0.3
		8120	0.5
		8260	10
		8270	10
1,1,1-Trichloroethane; Methylchloroform	71-55-6	8010	0.3
		8021	0.3
		8260	5
1,1,2-Trichloroethane	79-00-5	8010	0.3
		8260	5

Common Name	CAS RN	Suggested methods	PQL (mg/L)
Trichloroethylene; Trichloroethene	79-01-6	8010	1
		8021	0.2
		8260	5
Trichlorrofluoromethane; CFC-11	75-69-4	8010	10
		8021	0.3
		8260	5
2,4,5-Trichlorophenol	95-95-4	8270	10
2,4,6-Trichlorophenol	88-06-2	8040	5
		8270	10
1,2,3-Trichloropropane	96-18-4	8010	10
		8021	5
		8260	15
0,0,0-Triethyl phosphorothioate	126-68-1	8270	10
sym-Trinitrobenzene	99-35-4	8270	10
Vanadium	(Total)	6010	80
		7910	2000
		7911	40
Vinyl acetate	106-05-4	8260	50
Vinyl chloride; Chloroethene	75-01-4	8010	2
		8021	0.4
		8260	10
Xylene (total)	See NOTE 11	8020	5
		8021	0.2
		8260	5
Zinc	(Total)	6010	20
		7950	50
		7951	0.5

NOTES:

1. The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and Practical Quantitation Limits (PQL)) are given for informational purposes only. See also footnotes 5 and 6.
2. Common names are those widely used in goverenment regulations, scientific publications, and commerce; synonyms exist for many chemicals.
3. Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.
4. CAS index are those used in the 9th Collective Index.
5. Suggested Methods refer to analytical procedure numbers used in USEPA Report SW-846 *Test Methods for Evaluating Solid Waste*, Third edition, November 1986, as revised, December 1987. Analytical details can be found in SW-846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.
6. PQLs are the lowest concentrations of analytes in ground waters that can be realiably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. PQLs are based on 5 mL samples for volatile organics and 1 L samples for semivolatile organics. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

7. This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, Propane, 2,2'-oxybis[2-chloro-(CAS RN 39638-32-9).
8. Chlordane: This entry includes alpha-chlordane (CAS RN 5103-71-9), beta-chlordane (CAS RN 5103-74-2), gamma-chlordane (CAS RN 5566-34-7), and constituents of chlordane (CAS RN 57-74-9 and CAS RN 12789-03-6). PQL shown is for technical chlordane. PQLs of specific isomers are about 20 mg/L by method 8270.
9. Polychlorinated biphenyls (CAS RN 1336-36-3): This category contains congener chemicals, including constituents of Aroclor 1016 (CAS RN 12674-11-2), Arooclor 1221 (CAS RN 11104-28-2), Aroclor 1232 (CAS RN11141-16-5), Aroclor 1242 (CAS RN 53469-21-9), Aroclor 1248 (CAS RN 12672-29-6), Aroclor 1254 (CAS RN 11097-69-1), and Aroclor 1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.
10. Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., chlorinated camphene.
11. Xylene (total): This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p-xylene (CAS RN 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330-20-7). PQLs for method 8021 are 0.2 for o-xylene and 0.1 for m- or p-xylene. The PQL for m-xylene is 2.0 mg/L by method 8020 or 8260.

Appendix 5-3
Design Criteria Concentration Values
(40 CFR 258.40)

Table 1

Chemical	MCL (mg/L)
Arsenic	0.50
Barium	1.0
Benzene	0.005
Cadmium	0.01
Carbon tetrachloride	0.005
Chromium (hexavalent)	0.05
2,4-Dichlorophenoxy acetic acid	0.1
1,4-Dichlorobenzene	0.075
1,2-Dichloroethand	0.005
1,1-Dichloroethylene	0.007
Endrin	0.0002
Fluoride	4.0
Lindane	0.004
Lead	0.05
Mercury	0.002
Methoxychlor	0.1
Nitrate	10.0
Sclnium	0.01
Silver	0.05
Toxaphene	0.005
1,1,1-Trichloromethane	0.2
Thrichloroethylene	0.005
2,4,5-Trichlorophenoxy acetic acid	0.01
Vinyl Chloride	0.002

INSTALLATION:	COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (9) Chief of Operations and Maintenance (O&M) (20) Director of Contracting (DOC) (21) Public Affairs Office (PAO) (23) Defense and Reutilization Marketing Office (DRMO) (31) Directorate of Personnel and Community Activities (DPCA) (35) Morale, Welfare, and Recreation (MWR)

Section 6

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I)

SECTION 6

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I)

A. Applicability of this Protocol

This protocol covers management of underground hazardous materials storage tanks, underground petroleum, oil, and lubricant (POL) bulk storage tanks, pipeline delivery systems, truck fill stands, and fueling/defueling flight line operations. POL materials addressed include jet fuel (JP-4), AVGAS, MOGAS, diesel fuel, and lubricating oils. Waste petroleum based solvents (including PD-680) are addressed in Section 4, *RCRA Subtitle C.*

In addition to the requirements outlined in this section, buried metallic tanks are addressed in Section 2, *Clean Water Act (CWA).*

B. Federal Legislation

- *The Resource Conservation and Recovery Act (RCRA), Subtitle I, as amended.* This law, Public Law (PL) 99-49 (42 U.S. Code (USC) 6991-6991i), established the standards and procedures for underground storage tanks (USTs). It requires the USEPA to issue standards on leak detection, record maintenance, release reporting, corrective actions, tank upgrading, and replacement (42 USC 6991b(a)(c)).

- *The Federal Facilities Compliance Act (FFCA) of 1992.* This Act provides for a waiver of sovereign immunity with respect to Federal, state, and local procedural and substantive requirements relating to *RCRA.*

C. State/Local Requirements

Many state and local governments also have active UST programs. These various governments have developed regulations specific to the physical environment and the regulated communities' needs. Review regulations at the state and local level to ensure that any differences, such as reporting or notice requirements, and monitoring requirements are being complied with. In all cases, the most stringent regulation should be followed.

D. Department of Defense (DOD) Regulations

- DOD Directive 4140.25M, *Procedures for the Management of Petroleum Products*, describes procedures for the management of petroleum products on military installations.

- DOD Directive 5030.41, *Oil and Hazardous Substances Pollution Prevention and Contingency Program*, addresses requirements for compliance with the National Oil and Hazardous Substances Pollution Contingency Plan (OHSPC).

- Defense Environmental Quality Program Policy Memorandum (DEQPPM) 79-3, *Management of Recoverable and Waste Liquid Petroleum Products*, addresses the management of recoverable and waste liquid petroleum products.

E. U.S. Army Regulations (ARs)

- AR 200-1, *Environmental Protection and Enhancement*, requires compliance with the most stringent Federal, state, local, host nation, and Army requirements for USTs. It further lifts the categorical exclusion granted to heating oil tanks under Subtitle I of *RCRA*. Chapter 5, paragraph 7, outlines the basic Army UST requirements to follow in the absence of more stringent regulations.

- AR 420-49, *Heating, Energy Selection, and Fuel Storage, Distribution, and Dispensing Systems*.

F. Key Compliance Requirements

- Petroleum Product Environmental Release Reporting - Army installations are required to notify U. S. Environmental Protection Agency (USEPA) and appropriate state agencies when a release of a reportable quantity of POL material enters a navigable water (40 Code of Federal Regulations (CFR) 302).

- Spill Response Training - All Army personnel involved with the management and handling of oil and hazardous substances must take part in periodic spill prevention and response training programs (40 CFR 112.7).

- New Petroleum USTs installed after December 1988 must be certified for the following: the tank and piping were properly installed; the tank must be equipped with devices to prevent spills and overfill; correct filling practices must be followed; the tank and piping must be protected from corrosion; and both the tank and piping must be equipped with leak detection.

- Existing Petroleum USTs installed before December 1988, must have corrosion protection for steel tanks and piping, and devices that prevent spills and overfills installed by December 1998.

- UST Leaks must be corrected following short and long term requirements.

- Closure procedures must be followed when a UST is temporarily or permanently closed.

- Reporting to regulatory agencies must be accomplished for installation, closure, and suspected releases.

- Records must be maintained to prove leak detection performance, inspection of corrosion protection systems, proper repair or upgrade, and to document proper closure.

- New Chemical USTs installed after December 1988, containing hazardous materials (no UST is to be used to store hazardous wastes) must meet the same installation, corrosion protection, spill and overfill prevention, corrective action, and closure requirements, but must also have secondary containment and interstitial monitoring.

- Existing Chemical USTs installed before December 1988, must meet the same standards as existing petroleum USTs leak detection and must be installed on an accelerated schedule. In addition, chemical USTs must have secondary containment in place by 1998.

- Equipment used after 22 December 1990 to comply with the release detection requirements must have documentation that demonstrates its performance meets the standards outlined in 40 CFR 280.40(a)(3).

- Release Detection for USTs - Depending on the age, size, and construction of the tank, acceptable methods of release detection include the following:

    1. Inventory control
    2. Manual tank gauging
    3. Tank tightness testing
    4. Automatic tank gauging
    5. Vapor Monitoring
    6. Groundwater Monitoring
    7. Interstitial monitoring.

  Existing UST system tanks must implement release detection requirements based on when the system was installed. The table below identifies the deadline for providing release detection:

Deadlines for Release Detection:	
UST System Installation Date:	Leak Detection Required by 22 December of:
All others	1992
1980-December 1988	1993

- Release Detection for Underground Piping Associated with UST Systems - 40 CFR 280, Subpart D, establishes separate release detection requirements for underground piping depending on whether it conveys substances under pressure or suction.

    1. Pressurized piping must be equipped with an automatic line leak detector and have an annual line tightness test conducted; or pressurized piping must be equipped with an automatic line leak detector and a permanent release detection system that allows monthly monitoring. Permanent release detection methods acceptable for piping include: vapor monitoring, interstitial monitoring, and groundwater monitoring. Deadline for implementing release detection requirements on pressurized piping is 22 December 1990.
    2. Suction piping either must have a line tightness test conducted every 3 years (yr) or must use a permanent release detection system that allows monthly monitoring. Deadlines for implementing release detection requirements on suction piping are based on when the UST system was installed. The table above identifies the deadline for providing release detection.

        For suction piping constructed to certain standards, no release detection monitoring is required. It must meet five criteria:

        1. Below-grade piping must operate at less than atmospheric pressure
        2. Below-grade piping must be sloped to drain back into the tank when suction is released
        3. Only one check valve can be included in each suction line
        4. Check valve shall be located directly below and as close as practical to the suction pump
        5. Criteria in paragraphs 2 through 4 must be verifiable.

G. Responsibility for Compliance

- The Installation Commander (IC) is responsible for assigning the duty of drafting and reviewing the Spill Prevention and Response (SPR) Plan prior to its promulgation, and for the annual review and update of the Installation Spill Control Plan (ISCP). Often, the IC delegates the specific preparation of the

plan to the Directorate of Engineering and Housing (DEH) for implementation by the Environmental Coordinator (EC). The IC also is responsible for review and implementation of the plan for recoverable and waste petroleum.

- The Spill Response Team (SRT) is tasked to respond to spills when requested by an Onscene Commander (OSC) and to perform spill containment, recovery, cleanup, disposal, and restoration activities as directed by the OSC. The SRT is a multidisciplinary team often including the following persons: Facilities Engineer, EC, Director of Safety and Health, Fire Chief, Military Police, Public Affairs Officer (PAO), Safety Officer, and Staff Judge Advocate (SJA).

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

- The Fuels Management Officer of the DEH is responsible for the safe and efficient receipt, storage, handling, issuing, and accounting of all petroleum products to include all general operations and inspections.

- The DEH 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 DEH also is responsible for the calibration of permanently installed meters.

- The EC monitors all POL activities that may affect the environment and usually is responsible for the coordination of the review and updates of the ISCP Plan. The EC also often coordinates the reportable spills notification of appropriate Federal and state agencies on behalf of the Installation Onscene Commander.

H. Key Compliance Definitions

These definitions were obtained from the various Federal, DOD, and U.S. ARs cited previously in this section.

- *Aboveground Release* - any release to the surface of the land or to surface water. This includes but is not limited to, releases from the aboveground portion of a UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from a UST system (40 CFR 280.12).

- *Ancillary Equipment* - any devices including, but not limited to, such devices as pipings, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from the UST (40 CFR 280.12).

- *Belowground Release* - any release to the subsurface of the land and to groundwater. This includes, but is not limited to, releases from the belowground portion of a UST system and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from a UST (40 CFR 280.12).

- *Cathodic Protection* - a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current (40 CFR 280.14).

- *Cathodic Protection Tester* - a person who can demonstrate understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems (40 CFR 280.12).

- *CERCLA - Comprehensive Environmental Response Compensation and Liability Act of 1980 as amended* (40 CFR 280.12).

- *Compatible* - the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST (40 CFR 280.12).

- *Connected Piping* - all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regu-

lated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them (40 CFR 280.12).

- *Consumptive Use* - with respect to heating oil, this means consumed on the premises (40 CFR 280.12).

- *Corrosion Expert* - a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers (NACE) or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks (40 CFR 280.12).

- *Deferred USTs* - USTs which are exempt from meeting the requirements in 40 CFR 280 except those concerning release response and corrective action for UST systems containing hazardous substances in 40 CFR 280.60 through 280.67 (40 CFR 280.10(c)). These tanks include:
    1. wastewater treatment tank systems
    2. any UST system containing radioactive materials that are significant under the *Atomic Energy Act of 1954*
    3. any UST system that is a part of an emergency generator system at a nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR 50, Appendix A
    4. airport hydrant fuel distribution systems
    5. UST system with field-constructed tanks.

- *Dielectric Material* - a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system (i.e., tank from piping) (40 CFR 280.12).

- *Electrical Equipment* - underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electric cable (40 CFR 280.12).

- *Excavation Zone* - the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation (40 CFR 280.12).

- *Excluded USTs* - USTs which are not required to meet the requirements of 40 CFR 280, including: (40 CFR 280.10(b))

1. any UST system holding hazardous wastes listed under Subtitle C of the *Solid Waste Disposal Act (SWDA)*, or a mixture of such hazardous wastes and other regulated substances
2. any wastewater treatment tank systems that are a pa vastewater treatment facility regulated under Section 402 or 307(b, , *CWA*
3. equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment
4. any UST system whose capacity is 379 liters (L) (100 gallons (gal)) or less
5. any UST that contains a *de minimis* concentration of a regulated substance
6. any emergency spill or overflow containment UST system that is expeditiously emptied after use.

- *Existing Tank System* - a tank system used to contain an accumulation of regulated substances, or for which installation began on or before 22 December 1988. Installation is considered to have commenced if: (40 CFR 280.14).
  1. the owner or operator has obtained all Federal, state, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system
  2. either a continuous onsite physical construction or installation program has begun or the owner or operator has entered into any contractual obligations which cannot be canceled or modified without substantial loss, for physical construction at the site or installation of the tank system to be completed within a reasonable time.

- *Flow-through Process Tank* - a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used to store material before introduction into the production process or to store finished products or by-products from the production (40 CFR 280.12).

- *Free-product* - a regulated substance that is present as a nonaqueous phase liquid (i.e., liquid not dissolved in water) (40 CFR 280.14).

- *Gathering Lines* - any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production (40 CFR 280.12).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *Hazardous Substance UST System* - any UST tank system that contains a hazardous substance defined in section 101(14) of the *CERCLA* of

1980 (but not including any substance regulated as a hazardous waste under Subtitle C or any mixture of such substances and petroleum, and which is not a petroleum UST system) (40 CFR 280.12).

- *Heating Oil* - petroleum that is No. 1, No. 2, No. 4--light, No. 4--heavy, No. 5 --heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils (40 CFR 280.12).

- *Hydraulic Lift Tank* - a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices (40 CFR 280.12).

- *Implementing Agency* - when a state has an approved UST program the implementing authority is the designated state or local agency responsible for the programs, otherwise the implementing agency is the USEPA (40 CFR 280.14).

- *Liquid Trap* - sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extracting operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream (40 CFR 280.12).

- *Maintenance* - the normal operational upkeep to prevent a UST system from releasing a product (40 CFR 280.12).

- *Motor Fuel* - petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol, and is typically used in the operation of motor engines (40 CFR 280.12).

- *New Tank System* - a tank system that will be used to contain an accumulation of regulated substances and for which installation commenced after 22 December 1988 (40 CFR 280.14).

- *Noncommercial Purposes* - with respect to motor fuel, not for resale (40 CFR 280.12).

- *On the Premises Where Stored (Heating Oil)* - UST systems located on the same property where stored heating oil is used (40 CFR 280.12).

- *Operator* - any person in control of, or having responsibility for, the daily operation of the UST system (40 CFR 280.12).

- *Overfill Release* - a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment (40 CFR 280.14).

- *Owner*
    1. in the case of a UST system in use on 8 November 1984, or brought into use after that date, any person who owns a UST system used for storage, use, or dispensing of regulated substance
    2. in the case of any UST system in use before 8 November 1984, but no longer in use on that date, any person who owned the UST immediately before the discontinuation of its use (40 CFR 280.12).

- *Person* - an individual, trust, firm, joint stock company, Federal agency, corporation, state, municipality, commission, political subdivision of a state, or any interstate body. "Person" also includes a consortium, a joint venture, a commercial entity, and the United States Government (40 CFR 280.12).

- *Petroleum UST System* - a UST system that contains petroleum or a mixture of petroleum with *de minimis* quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils (40 CFR 280.12).

- *Pipe or Piping* - a hollow cylinder or tubular conduit that is constructed of nonearthen materials (40 CFR 280.12).

- *Pipeline Facilities* - (including gathering lines) are new and existing pipe rights-of-way and any associated equipment, facilities, or buildings (40 CFR 280.12).

- *Recoverable Product* - product which has served its intended purpose or which contains foreign matter which renders it unfit for original or alternate use, but through processing or refining can be reclaimed for other use by the Agency or commercial industry (40 CFR 280.12).

- *Regulated Substance*
    1. any substance defined in section 101(14) of *CERCLA* (but not including any substance regulated as a hazardous waste under Subtitle C
    2. petroleum, including crude oil or any fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit (^{O}F) and 14.7 pounds per square inch absolute (psia)).

The term "regulated substance" includes, but is not limited to, petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil though processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils (40 CFR 280.12).

- *Release* - any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from a UST into groundwater, surface water, or subsurface soil (40 CFR 280.12).

- *Release Detection* - determining whether a release of a regulated substance has occurred from the UST system into the environment or into the interstitial space between the UST system and its secondary barrier or secondary containment around it (40 CFR 280.12).

- *Repair* - to restore a tank or UST system component that has caused a release of product from the UST system (40 CFR 280.12).

- *Residential Tank* - a tank located on property used primarily for dwelling purposes (40 CFR 280.12).

- *Septic Tank* - a watertight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed through the soil and settled solids and scum from the tank are pumped out periodically and handed to a treatment facility (40 CFR 280.12).

- *Stormwater or Wastewater Collection System* - piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water runoff resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of stormwater and wastewater does not include treatment except where incidental to conveyance (40 CFR 280.12).

- *Surface Impoundment* - a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although may be lined with manmade materials) that is not an injection well (40 CFR 280.12).

- *Tank* - a stationary device designed to contain an accumulation of regulated substances and constructed of nonearthen materials (i.e., concrete, steel, plastic) that provide structural support (40 CFR 280.12).

- *Underground Area* - an underground room such as a basement, cellar, shaft, or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor (40 CFR 280.12).

- *Underground Release* - any belowground release (40 CFR 280.12).

- *Underground Storage Tank (UST)* - any one or a combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. This term does not include any (40 CFR 280.12):

    1. farm or residential tank of 4169 L (1100 gal) or less capacity used for storing motor fuel for noncommercial purposes
    2. septic tanks
    3. pipeline facility (including gathering lines) regulated by other acts
    4. surface impoundment, pit, pond, or lagoon
    5. stormwater or wastewater collection system
    6. flow-through process tank
    7. liquid trap or associated gathering lines directly related to oil or gas production and gathering operations
    8. storage tank situated in an underground area if the storage tank is situated upon or above the surface of the floor.

    (NOTE: The definition of UST does not include any pipes connected to any tank described in paragraphs 1 through 8 of this definition.)

    (NOTE: Although the USEPA excludes tanks used for storing heating oil for consumptive use on the premises where stored, the U.S. Army does not, (AR 200-1).)

- *Upgrade* - the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of product (40 CFR 280.12).

- *UST System or Tank System* - a UST, connected underground piping, underground ancillary equipment, and containment system, if any (40 CFR 280.12).

- *Wastewater Treatment Tank* - a tank that is designed to receive and treat influent wastewater through physical, chemical, or biological methods (40 CFR 280.12).

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All installations	6-1 through 6-7	(1)(2)(6)
USTs:		
Substandard USTs	6-8	(1)(2)
New or Upgraded USTs	6-9 through 6-13	(1)(2)(4)(6)(9)
Tank Filling	6-14 and 6-15	(1)(2)(4)(6)(9)
Corrosion Protection/Repairs	6-16 and 6-17	(1)(2)(4)(6)(9)
Release Detection	6-18 through 6-26	(1)(2)(4)(5)(6)(9)
Hazardous Substance USTs	6-27	(1)(2)(4)(9)
Deferred UST Systems	6-28	(1)(2)(4)(6)(9)
Documentation	6-29 and 6-30	(1)(2)(4)(6)(9)
Changes in Service or Closure	6-31 through 6-37	(1)(2)(4)(6)(9)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(4) Safety and Health Officer
(5) Fire Department
(6) Director of Logistics (DOL)
(9) Chief of Operations and Maintenance (O&M)

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I

Plans and Maps to Review

- UST inventory - map
- UST Management Plan

Records to Review

- Results of all UST testing, sampling, monitoring, inspection, maintenance, and repair work
- Registration records for all in-service, temporarily out-of-service, and permanently closed tanks
- Records for UST disposal, closure, and removal from activity and results of excavation area assessment
- UST replacement program
- Groundwater well monitoring data

Physical Features to Examine

- Airfield Refueling Operations
- Refueling facilities, including:
    - Aboveground and belowground storage tanks and dikes
    - Venting
    - Fill pipe
    - Gauges
    - Stations
- Washrack areas
- Vehicle Maintenance areas
- Oil Separators
- Oil and Hazardous Substance Site
- Rapid Refueling Points
- Fuel Bladders
- Any location with a UST system

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Safety and Health Officer
- Fire Department
- Director of Logistics (DOL)
- Chief of Operations and Maintenance (O&M)
- Spill Response Team (SRT)
- Fuels Management Officer

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
6-1. Determine actions or changes since previous review of UST management (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)(2)(6)
...	...
6-2. Installations should have on file all appropriate regulations pertaining to UST operation, maintenance, and closure (GMP).	Verify current copies of the following, which are applicable, are maintained at the installation: (1)(2)(6) - 40 CFR 280, *Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST).* - EO 12088, *Federal Compliance with Pollution Standards.* - DOD Directive 4140.25M, *Procedures for The Management of Petroleum Products.* - DOD Directive 5030.41, *Oil and Hazardous Substances Pollution Prevention and Contingency Program.* - AR 200-1, *Environmental Protection and Enhancement.* - AR 420-49, *Heating, Energy Selection and Fuel Storage, Distribution, and Dispensing Systems.* - TM 5-675, *Repairs and Utilities: Solid Fuel Operations.* - TM 5-678, *Petroleum, Oil, and Lubricants (POL).* - Applicable state and local regulations.
...	...
6-3. Installations are required to comply with applicable state and local requirements (EO 12088, Section 1-1).	Verify that the installation is complying with state and local requirements. (1) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2) (NOTE: Issues which are typically regulated by state and local agencies include: - spill management - handling of wastewater and fuel sludge from tank cleaning - use of product recovery systems - containment.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2) Verify that the existing system addresses the issues associated with USTs by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)
...	...
6-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning USTs have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-6. Installations should have a plan for the management of reclaimed, recoverable, and waste liquid petroleum products (GMP).	Verify that a Management of Recoverable and Waste Liquid Petroleum Products Plan has been prepared and adopted. (2)(6)
...	...
6-7. Petroleum products that are not used for their intended purpose should be reclaimed, recovered, and disposed of as waste (GMP).	Verify that containers at accumulation points are properly marked and in good condition. (2)(6) Verify that mixed petroleum liquids contaminated by halogenated solvents or industrial chemicals are disposed of as hazardous waste. (2)(6) Verify that used crankcase oils/lubricants are being collected at vehicle hobby shops. (2)
...	...
SUBSTANDARD USTs	(NOTE: While the USEPA excludes tanks used for storing heating oil for consumptive use on the premises where stored from meeting the *requirements in* 40 CFR 280, AR 200-1, para 5-7 does not allow for this exemption. Findings written for these tanks are classified as Class III. See Appendix 6-1 for additional guidance on applicability of checklist items.)
...	...

6-8. Substandard systems must be upgraded, closed, or removed from service by 22 December 1998 (40 CFR 280.21(a) through 280.21(c)).	Determine if the installation has any USTs which need to be upgraded, closed, or removed from service. (1)(2)
	
	Verify that upgrading of steel USTs includes one of the following methods: (1)(2)
	
	- internal lining according to the following requirements:
	  - lining is installed so that it prevents releases due to structural failure or corrosion and meets a recognized code of practice
	  - within 10 yr after installation of lining and every 5 yr thereafter, the lined tank is inspected internally and found to be structurally sound, with the lining still performing in accordance with original design specifications

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

6-8. (continued)	- cathodic protection with field-installed systems designed by an expert, impressed current systems, or an approved equivalent system and the integrity is assured by one of the following:
	  - tank is internally inspected and assessed to ensure that the tank is structurally sound and free of corrosion
	  - the tank has been installed for less than 10 yr and is monitored monthly for releases
	  - the tank has been installed for less than 10 yr and is assessed for corrosion holes by conducting two tightness tests, one before and one 3 to 6 months (mo) after installation of the cathodic protection system
	  - tank is assessed for corrosion holes by a method that is determined to be equally protective by the implementing agency
	- lining combined with cathodic protection:
	  - if lining is installed according to requirements
	  - if cathodic protection system meets requirements.
	
	Verify that spill and overfill equipment is added that meets the same standards as new USTs. (1)(2)
	
	Verify that piping that routinely contains regulated substances and is in contact with the ground is cathodically protected. (1)(2)
	
	(NOTE: If a release detection system is not available for the UST, it must be phased out in 1 to 5 yr.)
	
	(NOTE: See Appendix 6-2 for the phase-in schedule for release detection.)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
NEW OR UPGRADED USTs	
6-9. New or upgraded USTs are required to be fitted with spill and overfill prevention equipment (40 CFR 280.20(c) and 280.21(d)).	Verify that spill prevention equipment will prevent a release of product to the environment when the transfer hose is detached from the fill pipe. (1)(2)(6)(9) Verify that overfill prevention equipment does one of the following: (1)(2)(6) - automatically shuts off flow into the tank when the tank is less than 95 percent full - alerts the transfer operator when the tank is less than 90 percent full by restricting the flow into the tank or triggering a high-level alarm - restricts flow 30 minutes (min) prior to overfilling, alerts the operator with a high-level alarm 1 min before overfilling, or automatically shuts off flow into the tank so that none of the fittings are exposed to product due to overfilling. (NOTE: This equipment is not required if approved equivalent equipment is used or the UST system is filled by transfers of no more than 95 L (25 gal) at one time.) (NOTE: Existing tanks must be upgraded by 1998.)
...	...
6-10. Installations are required to use UST systems made of or lined with materials compatible with the substance stored (40 CFR 280.32).	Verify that the substances stored in UST systems are compatible with the system. (1)(2)(4)(6) Identify and check all USTs being used to store a substance other than that for which it was originally intended. (1)(4)(6)(9)
...	...
6-11. Notice must be given within 30 days when a UST system is brought into service after 8 May 1986 (40 CFR 280.22).	Determine if there are any tanks at the installation that were installed after 8 May 1986 by reviewing the inventory records. (1)(2)(4)(6) Verify that notice was given by reviewing records for proper notification forms. (1)(2) (NOTE: State forms may be used for notification in lieu of USEPA Form 7530.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

6-12. UST systems installed after 22 December 1988 must be constructed in such a manner that they will remain structurally sound for their operating life (40 CFR 280.20(a) and 280.20(b)).	Review UST plans to see if they conform to industry standards. (1)(2)(6)
	
	Verify that USTs meet the following: (2)(6)(9)
	
	- there is leak/spill prevention protection
	- the tank is constructed of one of the following materials:
	  - fiberglass-reinforced plastic
	  - steel which has one of the following types of cathodic protection:
	  - coated with a suitable dielectric material
	  - field installed cathodic protection (designed by a corrosion expert), and
	  - impressed current systems which allow determination of current operating status
	  - steel fiberglass reinforced plastic composite
	  - metal without additional corrosion protection provided that:
	  - the site has been determined not to cause corrosion to the tank by a corrosion expert, and
	  - records are maintained for the life of the tank that it is in a corrosion free environment
	- construction is in a manner that is deemed to prevent release of the regulated substance.
	
	(NOTE: Piping must also meet these criteria with the exception of not being constructed of steel fiberglass reinforced plastic composite.)

...	...
6-13. Installation of UST must be done by a certified installer and according to standard practices (40 CFR 280.20(d) and 280.20(e)).	Determine if there have been any new USTs installed at the installation. (1)(2) Verify that new USTs were installed by a certified installer by reviewing installation records and contracts. (1)(2) Verify that the procedures for the installation of new or pending USTs meet industry standards. (1)(2)
...	...
TANK FILLING	
6-14. The filling of a UST must include the prevention of overfilling and spilling of the substance (40 CFR 280.30(a)).	Observe the filling operations if possible; otherwise, review records for reports of overfills or spills resulting from operations. Check grounds around fill-lines for visible or odorous indications of contamination. (1)(2)(6)(9) Verify whether or not the level of the UST is checked before a transfer is made and that the volume available in the tank is greater than the volume of product to be transferred. (2)(6)(9) Verify that fill-lines are capped and locked. (2)(6)(9) Verify that the transfer operation is monitored constantly. (2)(6)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-15. Installations with UST systems are required to contain and immediately clean up a spill or overfill and report it to the implementing agency within 24 hours (h) in specific situations (40 CFR 280.30(b) and 280.53).	Determine if the installation has reported, contained, and cleaned up any and all spills or overfills which met the following criteria: (1)(2)(6)(9) - spills or overfills of petroleum that resulted in a release to the environment of more than 95 L (25 gal) or that caused a sheen on nearby surface water - spills or overfills of hazardous substances that result in a release to the environment in excess of the reportable quantity (see the *Hazardous Materials Management* Appendices). (NOTE: Spills or overfills of hazardous substances equal to or greater than the reportable quantity must be immediately reported to the National Response Center (NRC).) Verify that the installation has contained and immediately cleaned-up a spill or overfill of petroleum that is less than 95 L (25 gal) and a spill or overfill of a hazardous substance that is less than the reportable quantity. (1)(2)(6)(9) Verify that if these lesser quantities cannot be accomplished within 24 h, or another reasonable time period established by the implementing agency, the implementing agency is notified. (1)(2)(4)
...	...
CORROSION PROTECTION AND REPAIRS	
6-16. UST systems with corrosion protection must meet specific requirements (40 CFR 280.31).	Determine which UST systems at the installation have corrosion protection. (1)(2)(6)(9) Verify that the corrosion protection systems operate continuously to provide corrosion protection to the metal components that routinely contained regulated substances and are in contact with the ground. (1)(2)(6)(9) Verify that all cathodic protection systems are tested within 6 mo after installation and every 3 yr thereafter. (1)(2)(6)(9) Verify that UST systems with impressed current cathodic protection are inspected every 60 days. (1)(2)(6)(9) Verify that inspection records are maintained of the last three inspections for systems with impressed current cathodic protection and of the last two inspections for all other cathodic protection systems. (1)(2)(6)(9) Verify that inspections are conducted by a qualified cathodic protection tester. (1)(2)(6)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-17. Repairs to USTs must be performed according to industry code (40 CFR 280.33, 280.43, and 280.44).	Determine which USTs have undergone repairs. (1)(2)(9) Determine who does repairs to USTs. (1)(2)(9) Verify that the following procedures are used to repair USTs: (1)(2)(9) - fiberglass reinforced tanks are repaired by the manufacturer's authorized representative or according to industry standards - metal pipe fittings and sections that have leaked due to corrosion are 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 tightness within 30 days. (1)(2)(9) (NOTE: Tanks and piping need not be tested if: - repairs are internally inspected - the 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 tested as follows: (1)(2)(4)(9) - 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. (1)(2)(4)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RELEASE DETECTION/ RELEASES **6-18.** Installations with new and existing underground storage tanks are required to provide a method, or combination of methods of release detection (40 CFR 280.10(d) and 280.40). ...	Determine what release detection systems are in use at the installation (1)(2)(4)(9) Verify that the installed release detection system can detect a release from any portion of the tank and the connected underground piping that routinely contains product. (2)(4)(9) Verify that the installation has a program in place (or at least in the proposed stage) for provisions of release detection. (1)(2)(4)(9) Verify that an appropriate schedule is being complied with. (1)(2) (NOTE: Any pressurized delivery lines must be retrofitted by 22 December 1990.) (NOTE: Release detection requirements in 40 CFR 280.40 through 280.45 do not apply to USTs which store fuel solely for use by emergency power generators.) (NOTE: See Appendices 6-3 and 6-4 for information on release detection methodologies.) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

6-19. UST systems containing petroleum must meet specific release detection system requirements (40 CFR 280.41, 280.43, and 280.44).	Verify that tanks are monitored every 30 days using the method in Appendix 6-3, except for: (1)(2)(4)(6)(9)
	- UST systems which meet performance standards for new or upgraded systems and monthly inventory requirements may use tank tightness testing at least every 5 yr until 22 December 1998 or until 10 yr after the tank is upgraded or installed
	- UST systems which do not meet performance standards for new or upgraded systems, may use monthly inventory controls and annual tank tightness testing until 22 December 1998, at which time the tank must be upgraded or permanently closed
	- tanks which hold less than 2085 L (550 gal) may use weekly tank gauging.
	
	Verify that underground piping which routinely contains a regulated substance has the following release detection done according to the methods in Appendix 6-3: (1)(6)(9)
	
	- pressurized piping
	  - equipped with automatic line leak detector
	  - annual tightness testing or monthly monitoring.
	- suction piping
	  - line tightness testing every 3 yr or monthly monitoring
	  - no release detection system is needed for suction piping which is below grade and:
	  - operates at less then atmospheric pressure
	  - is sloped so that contents of pipe will roll back to tank when suction is released
	  - only one check valve is included in each suction line
	  - check valve is located directly below and as close as practical to the suction pump.
	
	(NOTE: Release detection requirements in 40 CFR 280.40 through 280.45 do not apply to USTs which store fuel solely for use by emergency power generators.)

...	...
6-20. Installations with UST systems are required to report releases under specific conditions (40 CFR 280.50).	Determine if the installation has reported any and all releases which met the following criteria: (1)(2)(4)(6)(9) - released regulated substances were found at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface waters - unusual operating conditions were observed such as the erratic behavior of dispensing equipment or a sudden loss of product unless it is determined the problem lies in the equipment but it is not leaking and is immediately repaired or replaced - monitoring results indicate a possible release. Verify that the implementing agency was notified within 24 h (or time period specified by the implementing agency) of the release. (1)(2)(6)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-21. Installations must investigate and confirm all suspected releases of a regulated substances requiring reporting within 7 days unless a corrective action is started immediately as detailed in 40 CFR 280.60 through 280.67 (40 CFR 20.52).	Verify that tightness testing is done within 7 days of a suspected release to determine whether a leak is in the tank or the delivery piping. (1)(2)(4) Verify that if environmental contamination is the basis for suspecting a leak and the tightness test does not indicate that a leak exists, a site check is done that measure for the presence of a release in the areas where contamination is most likely to be present. (1)(2)(4) (NOTE: If the results indicate that a leak has occurred, corrective actions must be started.) (NOTE: If the tightness test does not indicate a leak and environmental contamination is not the basis for suspecting a release, no further investigation is needed.)
...	...
6-22. Installations with a confirmed release from petroleum or hazardous substance USTs, except for excluded USTs (see the definitions) and USTs exempted under the RCRA C Section 3004(u) corrective action requirements, are required to perform specific initial response actions within 24 h of a release (40 CFR 280.60 and 280.61).	Verify that installation personnel is aware of the following initial response actions: (1)(2)(4)(6)(9) - the release is reported - immediate action is taken to prevent further release of the regulated substance into the environment - fire, explosion, and vapor hazards are identified and mitigated.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-23. Installations with a confirmed release from petroleum or hazardous substance USTs, except for excluded USTs (see the definitions) and USTs exempted under the RCRA C Section 3004(u) corrective action requirements, are required to perform specific initial abatement measures and site checks unless directed to do otherwise by the implementing agency (40 CFR 280.60 and 280.62).	Verify that the following actions are performed: (1)(2)(5)(6)(9) - as much of the substance as is necessary to prevent further release is removed from the UST system - visual inspection of aboveground releases or exposed belowground releases is done and further migration of the released substance into surrounding soils and groundwaters is prevented - monitoring and mitigation of any fire and safety hazards caused by vapors or free product is done - hazards from contaminated soils that are excavated or exposed are remedied - measurements are done for the presence of a release where the contamination is most likely to be present unless the presence and source of the release have previously been identified - an investigation is done for the presence of free product and the removal of free product is done as soon as possible. Verify that within 20 days after release confirmation a report is submitted to the implementing agency summarizing the initial abatement measures and site checks and the resulting information and data collected. (1)(2)
...	...
6-24. Installations with a confirmed release from petroleum or hazardous substance USTs, except for excluded USTs (see the definitions) and USTs exempted under the RCRA C Section 3004(u) corrective action requirements, are required to assemble information about the site and nature of the release unless exempted by the implementing agency (40 CFR 280.60 and 280.63).	Verify that the following information is collected: (1)(2) - 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, and land use - results of site check - results of free product investigation. Verify that within 45 days of the release confirmation this information is submitted to the implementing agency in a manner that demonstrates the applicability and technical adequacy or according to a format required by the implementing agency. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-25. Installations with a confirmed release from petroleum or hazardous substance USTs, except for excluded USTs (see the definitions) and USTs exempted under the RCRA C Section 3004(u) corrective action requirements, where site investigations have indicated free product must, to the maximum extent possible as required by the implementing agency, remove the free product (40 CFR 280.60 and 280.64).	Determine if there are release sites where free product has been confirmed on the installation. (1)(2)(6)(9) Verify that free product removal is done so that the spread of contamination is minimized. (1)(2)(4)(6) Verify that, unless exempted by the implementing agency, within 45 days after confirming a release, a free product removal report is submitted to the implementing agency that includes the following: (1)(2) - the name of the person responsible for implementing the free product removal system - the estimated quantity, type, and thickness of free product observed or measured - the type of free product recovery system used - whether there will be any onsite/offsite discharge during the recovery operation and where the discharge will be located - the type of treatment used for any discharge - the steps taken to obtain any required permits - the disposition of the recovered free product.
...	...
6-26. Installations with a confirmed release from petroleum or hazardous substance USTs, except for excluded USTs (see the definitions) and USTs exempted under the RCRA C Section 3004(u) corrective action requirements, are required to perform an investigation for soil and groundwater contamination (40 CFR 280.60 and 280.65).	Verify that an investigation of the release, the release site, and possibly affected surrounding areas has been done and identified if any of the following conditions exists: (1)(2)(6)(9) - evidence that groundwater wells have been affected - free product is evident - evidence that contaminated soil is in contact with groundwater - the implementing agency requests an investigation. Verify that the results of the investigation are submitted to the implementing agency according to a time schedule defined by the implementing agency. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
HAZARDOUS SUBSTANCE USTs	

6-27. Hazardous substance USTs must meet specific standards (40 CFR 280.42).	Verify that existing hazardous substance USTs meet release detection standards for petroleum USTs. (1)(2)(4)(9)
	
	Verify that existing hazardous substance USTs meet the requirements for new hazardous substance USTs by 22 December 1998 as stated below: (1)(2)(4)
	
	- secondary containment is checked for evidence of a release at least every 30 days and is designed and constructed to:
	  - contain regulated substances released until they are detected and removed
	  - prevent releases of regulated substance to the environment at any time during the operational life of the UST
	- double-walled tanks are designed, constructed, and installed to:
	  - contain releases from any portion of the inner tank within the outer-wall
	  - detect failure of the inner wall
	- external liners, including vaults, are designed, constructed, and installed in such a manner that:
	  - 100 percent of the capacity of the largest tank is contained within its boundary
	  - the interference of precipitation or groundwater intrusion is prevented with the ability to contain or detect release of regulated substances
	  - the tank is completely surrounded.
	
	Verify that underground piping is equipped with secondary containment which satisfies the requirements for UST secondary containment. (1)(2)(4)
	
	Verify that piping which delivers regulated substances under pressure is equipped with an automatic line leak detector. (1)(2)(4)(9)
	
	Verify that when other release detection methods are used, they are approved by the implementing agency. (1)(2)(4)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DEFERRED UST SYSTEMS	
6-28. Deferred UST systems (see definition) are required to meet specific standards (40 CFR 280.10(c) and 280.11).	Verify that deferred UST systems (whether single or double-walled) are not installed to store regulated substances unless: (1)(2)(4)(6)(9) - releases due to corrosion or structural failure will be prevented for the operational life of the system - it is cathodically protected against corrosion, constructed of non-corrodible materials, steel clad with a noncorrodible material, or designed to prevent release - it is constructed or lined with material that is compatible with the stored substance. Verify that deferred systems meet the standards concerning release response and action for USTs containing petroleum or a hazardous substance found in 40 CFR 280.60 through 280.67. See checklist requirements based on these citations. (1)(2)
...	...
DOCUMENTATION	
6-29. Installations with USTs are required to meet specific reporting requirements (40 CFR 280.34(a)).	Verify that the installation has submitted the following when applicable: (1)(2) - notifications of new USTs - release reports - planned or complete corrective actions - notice of closure or change-in-service.
...	...
6-30. Installations with USTs are required to meet specific record keeping requirements (40 CFR 280.34(b), 280.34(c), 280.45, and 280.74).	Verify that records are kept of the following: (1)(2)(4)(6)(9) - a corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used - documentation of operation of corrosion protection equipment - documentation of repairs - recent compliance with release detection requirements - results of any sampling, testing, or monitoring of release detection systems for at least 1 yr - all written performance claims pertaining to any release detection for 5 yr from the date of installation - written documentation of all calibration, maintenance, and repair of release detection equipment for at least 1 yr - results of excavation zone assessments for 3 yr after permanent closure - results of any site investigations. Verify that records are available at one of the following: (1)(2)(6)(9) - at the UST site and immediately available for inspection - at a readily available alternative site and provided for inspection.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
CHANGES IN SERVICE OR CLOSURE	
6-31. USTs which are put out of service temporarily, must have continued maintenance (40 CFR 280.70).	Determine if the installation has any out-of-service USTs. (2)(4)(9) Verify that out of service USTs are being maintained for the following: (2)(4)(9) - corrosion protection - release detection. Verify that if the UST has been out-of-service near or over 1 yr, plans have been made for permanent closure. (1)(6)(9) (NOTE: If the UST is empty, release detection is not required.) (NOTE: An empty UST is one which has no more than 2.5 centimeter (cm) (1 inch (in)) of residue or less than 0.3 percent by weight of total capacity of the UST system.) Verify that if a UST system is closed for 3 mo or more that the vent lines are open and functioning and all other lines, pumps, manways, and ancillary equipment are capped and secured. (2)(9) Verify that if the UST has been out of service for more than 12 mo and does not meet the standards for new or upgraded USTs, it is permanently closed unless the implementing agency has provided an extension. (2)(9)
...	...
6-32. Notification must be given to the implementing agency (USEPA) for any closure or change in service 30 days in advance or within a reasonable time frame as determined by the implementing agency (40 CFR 280.71(a)).	Determine if any of the USTs at the installation have been closed or have had a change in service. (1)(2) Verify that notification of closures and changes were given within 30 days. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-33. UST closure must be done in one of the following methods: - removed from ground - left in place with substance removed, and filled with an inert solid material and closing it to all future outside access (40 CFR 280.71(b)).	Determine if there are any USTs at the installation which have been closed or are undergoing the closure process. (1)(6)(9) Verify that tanks being permanently closed are emptied and cleaned by removing all liquids and accumulated sludges. (1)(6)(9) Determine if there are abandoned USTs. (1)(6)(9) Verify that there are plans to close off abandoned USTs in an appropriate manner. (1)(6)(9) Verify that a site assessment was made after closure to ensure that no releases to the environment have occurred. (1)(6)(9)
...	...
6-34. Prior to a change-in-service, tanks must be emptied and cleaned and a site assessment conducted (40 CFR 280.71(c)).	Determine if there are any tanks which the installation has continued to use to store a nonregulated substance (a change-in-service). (2)(6)(9) Verify that prior to the change, the tank was emptied and cleaned. (1)(6)(9) Verify that prior to the change a site assessment was done. (1)(6)(9)
...	...
6-35. Prior to permanent closure or change-in-service is completed measurements must be made for the presence of a release where contamination is most likely to be present at the site (40 CFR 280.72).	Verify that measurements for the presence of a release have been done. (1)(2) (NOTE: These requirements are met if one of the leak detection methods outlined in checklist item 6-18 (40 CFR 280.40) indicates no release has occurred.)
...	...
6-36. Installations with UST systems closed prior to 22 December 1988 must assess the excavation zone and close the UST according to current standards if releases from the UST may pose a current or potential threat to human health and the environment (40 CFR 280.73).	Determine if the installation has any USTs which were closed prior to 22 December 1988. (1)(2)(9) Verify that the excavation zone of these USTs has been assessed and clean-up done as needed. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-37. Excavation zone assessment records shall be maintained for 3 yr (40 CFR 280.74).	Verify that excavation zone assessment records are maintained for 3 yr in one of the following ways: (1)(2) - by the installation - at the implementing agency if they cannot be maintained at the closed installation.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

Appendix 6-1

UST Applicability Guide

Applicable CFR Citations	Checklist #'s
USTs (see definitions)	all as defined in 40 CFR 280.12
Excluded USTs (see definitions)	none
Deferred USTs (see definitions)	40 CFR 280.11 (6-29)
USTs storing fuel for emergency generators	40 CFR 280.20 through 280.22 (6-8 through 6-18 280.30 through 280.34 6-21 through 6-27 280.50 through 280.53 6-29 through 6-38) 280.60 through 280.67 280.70 through 270.74

Appendix 6-2

Schedule for Phase-in of Release Detection

Year system was installed	Year when release detection is required (by 22 December of the year indicated)				
	1989	1990	1991	1992	1993
Before 1965 or date unknown.	RD	P			
1965-69		P/RD			
1970-74		P	RD		
1975-79		P		RD	
1980-88		P			RD

P = must begin release detection for all pressurized piping as defined in 280.41(b)(1).
RD = must begin release detection for tanks and suction piping.

Appendix 6-3

Release Detection Requirements
40 CFR 280.43

Each method of release detection for tanks used to meet the requirements for petroleum UST systems must be conducted in accordance with the following:

1. Inventory control: Product inventory control must be conducted monthly to detect a release of at least 1.0 percent of flow-through plus 130 gal on a monthly basis in the following manner:

1. inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day
2. the equipment used is capable of measuring the level of product over the full range of the tanks height to the nearest one-eighth of an inch
3. the regulated substance inputs are reconciled with delivery receipts by measurements of the tank inventory volume before and after delivery
4. deliveries made through a drop tube that extends to within one foot of the tank bottom
5. product dispensing is metered and recorded within the local standards of product withdrawn
6. the measurement of any water level in the bottom of the tank is made to the nearest in. at least once a month.

2. Manual gauging: manual tank gauging must meet the following requirements:

1. tank liquid level measurements are taken at the beginning and end of a period of at least 36 h during which no liquid is added to or removed from the tank
2. level measurements are based on an average of two consecutive stick readings at both the beginning and end of the period
3. the equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest in.
4. a leak is suspected and subject to the requirements of subpart E if the variation between beginning and ending measurements exceeds the weekly or monthly standards of Table A below
5. only tanks of 550 gal or less nominal capacity may use this as a sole method of release detection. Tanks of 551 to 2000 gal may also use inventory control. See paragraph 1 in this Appendix. Tanks of greater than 2000 gal nominal capacity may not use this method to meet release detection requirements.

Table A

Nominal Tank Capacity	Weekly Standard (one test)	Monthly Standard (average of four)
550 gal or less	10 gal	5 gal
551-1000 gal	13 gal	7 gal
10,001-2000 gal	26 gal	13 gal

3. Tank tightness testing: Tank tightness testing must be capable of detecting a 0.1 gal/h leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table.

4. Tank automatic gauging: Equipment for automatic tank gauging that tests for the loss of product and conducts inventory control; must meet the following requirements:

1. the automatic product level monitor test can detect a 0.2 gal/h leak rate from any portion of the tank that routinely contains product
2. inventory control is conducted according to requirements (see paragraph 1 above).

5. Vapor monitoring: Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

1. the materials used as backfill are sufficiently porous (i.e., gravel, sand, crushed rock) to easily allow diffusion of vapors from releases into the excavation area
2. the stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (i.e., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank
3. the measurement of vapors by the monitoring device is not rendered inoperative by the ground water, rainfall, or soil moisture or other unknown interferences so that a release could go undetected for more than 30 days
4. the level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank
5. the vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system
6. in the UST excavation zone, the site is assessed to ensure compliance with the requirements of paragraph 5 subparagraph 1 through 4 above and to establish the number and positioning of monitor wells that will detect any releases within the excavation zone from any portion of the tank that routinely contains product
7. monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

6. Groundwater monitoring: Testing or monitoring for liquids in the ground water must meet the following requirements:

1. the regulated substance stored is immiscible in water and has a specific gravity of less than one
2. ground water is never more than 20 feet (ft) from the ground surface and the hydraulic conductivity of the soil(s) between the UST system and the monitoring wells or devices is not less than 0.01 cm/second (sec) (i.e., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials
3. the slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low ground water conditions
4. monitoring wells should be sealed from the ground surface to the top of the filter pack
5. monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible
6. the continuous monitoring devices or manual methods used can detect the presence of at least one-eight of an inch of free product on tip of the ground water in the monitoring wells
7. within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements of paragraphs 6 1-5 above and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product
8. monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

7. Interstitial monitoring: Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

1. for double-walled systems, the sampling or testing method can detect a release through the inner wall in any portion of the tank that routinely contains product
2. for UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a release between the UST system and the secondary barrier:
    1. the secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10^{-6} cm/sec for the regulated substance stored) to direct a release to the monitoring point and permit its detection
    2. the barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected
    3. for cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system
    4. the ground water, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than 30 days

5. the site is assessed to ensure that the secondary barrier is always above the ground water and not in a 25-yr flood plain, unless the barrier and monitoring designs are for use under such conditions

6. monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

3. for tanks with an internally fitted liner, an automated device can detect a release between the inner wall of the tank and the liner. The liner is compatible with the substance stored.

8. Other methods: Any other type of release detection method, or combination of methods, can be used if:

1. it can detect a 0.2 gal/h leak rate or a release of 150 gal within a mo with a probability of detection of 0.95 and a probability of false alarm of 0.05

2. the implementing agency may approve another method, if it can be demonstrated that this method can detect releases as effectively as the methods listed in this Appendix.

Each method of release detection for **piping**, used to meet the requirements must be conducted in accordance with the following:

a. Automatic line detectors: Methods which alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping, or triggering an audible or visual alarm may be used only if they detect leaks of 3 gal/h at 10 pounds per square inch (ppi) line pressure within 1 h. An annual test of the operation of the leak detector must be conducted in accordance with the manufacturer's requirements.

b. Line tightness testing: A periodic test of piping may be conducted only if it can detect a 0.1 gal/h leak one and one-half times the operating pressure.

c. Applicable tank methods: Vapor monitoring, ground water monitoring and interstitial monitoring may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

Appendix 6-4

Options for Release Detection

The most immediate and demanding requirements of 40 CFR 280 are the release detection methods which must be implemented or installed in all UST systems. (See Appendix 6-2 for phase-in schedule). A synopsis of 40 CFR 280.20 - 280.45 follows. The type of release detection method used will vary with the type and age of the tank or pipeline. Remember that aircraft hydrant refueling systems and "field constructed" bulk tanks have been deferred and do not have to comply with 40 CFR 280 at this time. In addition to USTs used to store fuel, emergency generators are deferred from meeting the requirements for release detection. Emergency generator fuel tanks must comply with all other parts of this requirement.

Release Detection for Tanks

Option 1 - Combination of Precise Inventory Control and Tightness Testing

If tanks meet 40 CFR 280.20 new tank standards, tightness is required every 5 yr. If tanks do not meet new tank standards, tightness test is required every year until 1998 when the tank must either meet new tank standards or be closed.

Option 2 - Combination of Precise Inventory Control and an Automated Gauging Device

The automatic gauging device must be able to detect a leak of 0.2 gal/h.

Option 3 - Vapor Monitoring in Soils Surrounding Tank

- Only in sandy or gravelly soils
- Monthly gas sampling
- Must detect vapor levels above background levels
- Groundwater must not interfere
- Sufficient number of vapor monitoring wells

Option 4 - Groundwater Monitoring Near Tanks

- Stored liquid must be immiscible in water and have specific gravity < 1
- Groundwater must be within 20 ft of ground surface
- Soils must have hydraulic conductivity of 10^{-2} cm/sec or greater
- Proper monitoring well design and proper number of wells
- Use an automatic or manual method capable of detecting a 1/8 in. layer of floating fuel

Option 5 - Interstitial Monitoring

This method only applies to tanks surrounded by a secondary containment barrier. Monitoring wells must be placed between the tank and the containment barrier.

Option 6 - Any other Method (approved by the implementing agency)
which can detect a 0.2 gal/h leak or 150 gal release per mo with a 95 percent probability of false positives.

Pipeline Release Monitoring

The EPA regulation places much more stringent requirements on pipes which convey regulated liquids under pressure. Whenever possible, base engineers should modify pumps and pipelines to reduce the length of pressurized piping. The following release detection requirements apply to piping:

Pressurized Piping

- Must be equipped with sensitive automatic leak detector with alarm or auto shut down capabilities: and
- Have annual tightness test or monthly monitoring system soil vapors, ground water monitoring, interstitial monitoring or other approved method.

Suction Piping

- Tightness test every 3 yr and in some cases no release detection is required at all.

INSTALLATION:	COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

Section 7

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACTS (CERCLA/SARA) AND RCRA CORRECTIVE ACTIONS

SECTION 7

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (CERCLA/SARA) AND RCRA CORRECTIVE ACTIONS

A. Applicability of this Protocol

This protocol applies to all Army facilities. Currently, this section contains protocols for implementing the requirements of the *CERCLA/SARA*.

The *CERCLA/SARA and RCRA Corrective Actions* protocol is used to determine the compliance status of the management activities associated with the identification, investigation, and cleanup of hazardous materials contamination.

Specific state regulations are not included in this protocol.

B. Federal Legislation

- *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980.* This Act was amended by the *Superfund Amendments and Reauthorization Act (SARA) of 1986*, 42 U.S. Code (USC) 9601-11050, 10 USC 2701-2810, et. al.. *CERCLA/SARA* regulates the prevention, control, and compensation related to environmental pollution.

- *The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986.* This Act was designed to promote emergency planning and preparedness at both the state and local level. It provides citizens and local governments with information regarding the potential hazards in their communities. *EPCRA* requires the use of emergency planning and designates state and local governments as recipients of information regarding chemicals and toxins used in the community. Federal facilities are not currently required to comply with *SARA Title III*.

- *The Resource Conservation and Recovery Act (RCRA), Subtitle C, as amended.* This law, PL 98-616 (42 USC 6921-6939b) established standards and procedures for the handling, storage, treatment, and disposal of hazardous waste. The 1984 amendments give the U.S. Environmental Protection Agency (USEPA) the authority to force treatment, storage, and disposal facilities to conduct corrective action for release from a facility.

- Executive Order (EO) 12088, *Federal Compliance with Pollution Standards*, of 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities programs, and activities it funds meet applicable Federal, state, and local environmental requirements or correct situations that are not in compliance with such requirements. In addition, the EO requires each agency to ensure that sufficient funds for environmental compliance are included in the agency budget.

C. State/Local Requirements

- For Federal facilities *SARA* requires that:

  "State laws concerning removal and remedial action, including state laws regarding enforcement, shall apply to removal and remedial actions at facilities owned or operated by a department, agency, or instrumentality of the United States when such facilities are not included on the National Priorities List (NPL)" (Section 120(a)(4)).

- Some states have cleanup statutes based on collecting cleanup costs from responsible parties. These laws apply to non-NPL sites; consequently, certain authorities and requirements will vary from state to state.

- State (and local) Applicable or Relevant and Appropriate Requirements (ARARs) are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal law or limitations promulgated under Federal law or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a *CERCLA* site. Relevant and appropriate requirements, criteria, or limitations promulgated under Federal or state law that, while not applicable to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a *CERCLA* site, address problems or situations sufficiently similar to those encountered at the *CERCLA* site that are well suited to the particular site. ARARs are used to establish the standards for cleanup as a function of the chemicals involved, the location, the suspected health effects, and response action technologies proposed at the site.

D. Department of Defense (DOD) Regulations

None.

E. U.S. Army Regulations (ARs)

- AR 200-1, *Environmental Protection and Enhancement*, Chapter 9, *Environmental Restoration Program*, implements the remedial response aspect of *CERCLA*, as amended by *SARA*. It provides guidance for the management of the Army Installation Restoration Program (IRP) and Formerly Used Defense Site (FUDS) program. It details the procedures and the required documents necessary at each stage of the remedial process, from the Preliminary Assessment/Site Inventory (PA/SI), through the Remedial Investigation/ Feasibility Study (RI/FS), to the Remedial Action (RA). AR 200-1 also provides guidance for writing oil and hazardous substance contingency plans, and for dealing with all types of hazardous materials.

- AR 200-2, *Environmental Effects of Army Actions*, defines Army policy relative to compliance with the *National Environmental Policy Act (NEPA)* when projects are undertaken pursuant to the requirements of *CERCLA/SARA*. Basically, this section outlines the required environmental records to be completed during the course of a remedial action under *CERCLA*, from identification through completion. Other chapters in AR 200-2 give detailed information on preparing the following documents: Environmental Assessments (EAs), Environmental Impact Statements (EISs), Categorical Exclusions (CXs), Findings of No Significant Impact (FNSIs), Notices of Intent (NOIs), and Records of Decision (RODs) (see Section 12, *National Environmental Policy Act*, and the Appendixes to Section 16 of this manual, *Environmental Program Management*, for more information on these documents).

F. Key Compliance Requirements

- The legal mandates for the IRP are *CERCLA and SARA*. Objectives of the program are to identify, investigate, cleanup, and closeout IRP sites.

- Hazardous Substance Release Reporting - Army installations are required to notify the USEPA and appropriate state agencies when a release of a reportable quantity of a hazardous substance occurs. The release includes any discharge, spill, or leak to the air, or water or onto the land as stipulated in 40 Code of Federal Regulations (CFR) 302, *Designation, Reporting Quantities, and Notification.*

- Community Right-to-Know - Army installations that use or manufacture hazardous or toxic chemicals are required to comply with the regulations of *EPCRA*.

G. Responsibility for Compliance

• Installation Commanders (ICs) will:

- monitor proposed actions and programs within their commands
- task the appropriate staff with preparation of EAs and EISs and development of public involvement
- assure that appropriate environmental documentation is prepared and forwarded to the appropriate proponent
- initiate the preparation of necessary environmental documentation and assess the environmental consequences of proposed programs and projects
- coordinate appropriate environmental documents and public affairs initiatives with Major Army Command (MACOM), Headquarters Department of the Army (HQDA) agencies, the Army Environmental Office, and state and Federal regulatory agencies
- assist in the review of environmental documents prepared by the DOD and other Army or Federal agencies, as requested
- be responsible for all IRP projects on the installation
- ensure that proposals for real property transaction concerning installations included in the IRP will be immediately reported through channels to HQDA (ENVR-E)
- assign an onscene coordinator/remedial project manager (OSC/RPM) for all ongoing IRP projects on the installation.

The OSC/RPM will act as the IC's representative on all IRP matters and perform the duties described in 40 CFR 300.33(b). The OSC/RPM will also:

- coordinate with the MACOM for Army National Guard (ARNG), National Guard Bureau; for U.S. Army Reserves (USAR), MUSARCs, U.S. Army Environmental Center (USAEC), and the Corps of Engineers:
  - on all proposals for removal and remedial action
  - on the installation's Point of Contact (POC) for regulatory agencies
  - on monitoring the activities of contractors as requested
  - on reviewing, and comment on draft reports prepared by USAEC or the Corps of Engineers on IRP activities
  - on reviewing response plans and recommendations for IRP response actions and proposed future actions
  - ensuring that currently operating facilities are not and do not become sources of hazardous materials contamination
  - ensuring that USEPA, state, regional, and local officials have adequate opportunity for timely review and comment on proposed activities, establishing a technical review committee (TRC) per AR 200-1, para 9-10,

developing, implementing and maintaining a community relations program for IRP activities that meets all regulatory guidelines
-establish an administrative record of the installation that is included or proposed for inclusion on the NPL.

- The USEPA will establish and recommend sites for inclusion on the NPL.

- The Public Affairs Office (PAO) will establish the necessary supporting Public Awareness Program(s).

- The Installation Fire Department will provide 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 on the installation.

H. Key Compliance Definitions

These definitions were obtained from Army, DOD, and compliance regulations cited previously in this protocol.

- *CERCLA* - the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, as amended (40 CFR 355.20).

- *Defense Environmental Restoration Account (DERA)* - the DOD funding program for the IRP (AR 200-1, para 9-4).

- *Extremely Hazardous Substance* - a substance listed in 40 CFR 355 (40 CFR 355.20).

- *Feasibility Study* - within the IRP (or *CERCLA*), the means for development, evaluation, selection, and description of remedial action alternatives (AR 200-1, para 9-7f(2)).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *Hazardous Substances* - any substance designated pursuant to 40 CFR 302 (40 CFR 302.3).

- *Materials Safety Data Sheet (MSDS)* - the sheet required to be developed under Title 29 of the CFR (40 CFR 370.2).

- *Mixture* - a heterogeneous association of substances where the various individual substances retain their identities and can usually be separated by mechanical means. This includes solutions or compounds but does not include alloys or amalgams (40 CFR 355.20).

- *National Priorities List (NPL)* - the list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial response (AR 200-1, para 9-9).

- *Navigable Waters* - waters of the United States, including the territorial seas (40 CFR 302.3).

- *Release* - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, excluding: 1. any release that results in exposure to people solely within a workplace with respect to a claim that such people may assert against the employer of such people 2. emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine, 3. a release of source, byproduct, or special nuclear materials from a nuclear incident, and 4. normal application of fertilizer (40 CFR 302.3).

- *Remedial Action (RA)* - the actual construction or implementation phase that follows the remedial design of the selected cleanup alternative at a site (AR 200-1, para 9-7f(6)).

- *Remedial Investigation (RI)* - the IRP-related or *CERCLA*-related process to determine the nature and extent of the problem posed by a release or threatened release (AR 200-1, para 9-7f(1)(c)).

- *Reportable Quantity* - the quantity, as set forth in 40 CFR 302, that, when released, requires notification (40 CFR 302.3).

- *Site Inspection* - a technical phase, following a preliminary assessment, designed to collect more extensive information on a hazardous waste site. The information is used to score the site with the Hazard Ranking System to determine if response action is needed (AR 200-1, para 9-7f(1)).

- *Threshold Planning Quantity* - TPQ (40 CFR 370.2).

- *Vessel* - every description of watercraft or other artificial contrivances used, or capable of being used, as a means of transportation on water (40 CFR 302.3).

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (CERCLA/SARA) AND RCRA CORRECTIVE ACTIONS

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All installations	7-1 through 7-10	(1)(2)(5)(13)(21)
RCRA Corrective Actions	7-11	(2)(5)
Offsite Contamination	7-12	(1)(2)
Releases	7-13 through 7-16	(1)(2)
Emergency Planning	7-17 and 7-18	(1)(2)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(5) Fire Department
(13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC)
(21) Public Affairs Office (PAO)

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (CERCLA/SARA) AND RCRA CORRECTIVE ACTIONS

Plans and Maps to Review

- Information and maps delineating all *CERCLA* sites or spill sites
- Spill plan

Records to Review

- RCRA Part B Permit
- National Response Center (NRC) Notification Documentation
- Preliminary assessment (*CERCLA*)
- Federal agency property transfer contract
- Policy establishing if agency will comply with all or portions of Title III (*EPCRK*) and supporting documents/notices
- Groundwater quality data for all monitoring wells
- Spill reports
- Hazardous material inventory

Physical Features to Examine

- Disposal sites

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Fire Department
- Engineering, Plans, Training, Mobilization, and Security (DPTMSEC)
- Public Affairs Office (PAO)

COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT / SUPERFUND AMENDMENT AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
7-1. Determine actions or changes since previous review (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)
...	...
7-2. Copies of all relevant Federal, DOD, U.S. Army, and state/local regulations should be maintained on the installation (GMP).	Determine whether copies of the following regulations and policy letters, which are applicable, are maintained and kept current at the installation: (1) - *CERCLA/SARA* Section 120, *Federal Facilities.* - SARA Section 211, *DOD Environmental Restoration Program.* - EO 12088, *Federal Compliance with Pollution Standards.* - 40 CFR 264, *Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.* - 40 CFR 300, Subchapter J, *Superfund Programs.* - 40 CFR 302, *Reportable Quantities of Hazardous Materials (Table 302.4).* - 40 CFR 355, *Emergency Planning and Notification.* - 40 CFR 370, *Hazardous Chemical Reporting: Community Right-To-Know.* - AR 200-1, *Environmental Protection and Enhancement.* - Applicable state and local regulations.
...	...
7-3. Installations not included on the NPL are required to comply with applicable state and local requirements (EO 12088, Section 1-1 and *CERCLA/ SARA* Section 120(a)(4)).	Verify that the installation is complying with state and local requirements. (1) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2) (NOTE: Issues that are typically regulated by state and local agencies include: - notification requirements - response plan requirements.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (5) Fire Department (13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT / SUPERFUND AMENDMENT AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, reoccurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weaknesses in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2) Verify that the existing system addresses the issues associated with *CERCLA/SARA and RCRA Corrective Actions* by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)
...	...
7-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning *CERCLA/SARA and RCRA Corrective Actions* have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...
7-6. Screening for past use of hazardous substances and the potential for contamination is required to be conducted at all major Army installations and subinstallations, and other properties controlled by the Army (AR 200-1, para 9-7a).	Determine if the installation has been screened for past use of hazardous substances. (2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (5) Fire Department (13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT / SUPERFUND AMENDMENT AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-7. Each installation with an on-going IRP for sites listed on the NPL must have a technical review committee (TRC) (AR 200-1, para 9-10).	Determine if the installation has formed and implemented a TRC. (1)(2)(13) Verify that the committee includes representatives from the USEPA, state, and local regulatory agencies, and the public. (1)(2)(13) Verify that the TRC holds public meetings quarterly or at identified milestones. (1)(2)(13)
...	...
7-8. In all *CERCLA/SARA* environmental restoration activities a PA/SI is required (40 CFR 300.420 and AR 200-1, para 9-7f(1) and para 9-7f(5)).	Verify that in the IRP an inventory of all the real property, the property over which the IC or other Army entity has control, has been done. (2) Verify that at the start of the PA a program of full coordination with Federal and state regulatory agencies was established. (1) Verify that if a site investigation is required, an environmental analysis in the form of an EA, EIS, or CX was prepared. (1)(2) Verify that when a SI leads to a remedial investigation/feasibility study (RI/FS), it is conducted in accordance with the provisions in AR 200-1 and 40 CFR 300.420 and that it was started within 6 months (mo) after the installation was added to the NPL. (1)(2) Verify that a ROD is signed by the IC after the publication of the FS report. (1)(2) Verify that within 15 mo after the completion of the FS and the ROD, a selected alternative has been designed and substantial continuous onsite activity is underway. (1)(2) Verify that within 180 days after the USEPA's review of the RI/FS the installation enters into an interagency agreement (IAG) with the USEPA for the expeditious completion of necessary remedial actions. (1)(2)
...	...
7-9. Installations with IRP sites on the NPL must appoint a remedial project manager (40 CFR 300.120).	Determine if the IC has appointed a remedial project manager for all IRP sites. (2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (5) Fire Department (13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT / SUPERFUND AMENDMENT AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-10. The installation must keep the public informed about and involved with IRP projects (40 CFR 300.415(m), 300.430(c), 300.430(e)(9)(iii)(I), 300.430(f)(3), 300.430(f)(6), and 300.435(c)).	Verify that the public is informed through the PAO, in a timely news release, about: (2)(21) - the discovery of releases or threatened releases - the magnitude of any threat to public health and the environment associated with any release or threatened release - proposed response actions with respect to any release or threatened release - the initiation of each distinct phase of a response action - findings and the availability of documents for review - discovery of offsite migration of contaminants - the signing of site-specific agreements with regulatory agencies. Verify that all proposed public statements are coordinated with the IC, the OSC/RPM, the Staff Judge Advocate (SJA), PAO, and environmental staffs of the installation, the MACOM PAO and any other signatories of an IAG if applicable. (2) Verify that the installation has established an Administrative Record and published a notice of availability to the general public. (2) Verify that public participation activities, such as establishing an Administrative Record, providing a public comment period and developing a community relation plan are initiated prior to removal action. (2) Verify that public participation activities begin with the initiation of the RI/FS, if not earlier. (2)(5) Verify that a community relations and response plan is prepared for any site on the NPL. (2)(5) Verify that public comment is solicited for 45 days on any draft FS and that the installation provided for a public hearing during the public comment period. (2)(5) Verify that the community relations plan was reviewed by the installation prior to the remedial design/remedial action phase, and changes to the plan are identified to the general public. (2)(5) Verify that the installation makes prompt notification to applicable USEPA, state and local authorities of the following: (2)(5) - the discovery of releases or threatened releases of hazardous substances - the magnitude of any threat to public health and the environment that may be associated with any such release or threatened release - the proposed response actions with respect to any release or threatened release - the initiation of each distinct phase of a response action.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (5) Fire Department (13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT / SUPERFUND AMENDMENT AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RCRA CORRECTIVE ACTIONS	
7-11. Installations performing *RCRA Corrective Actions* must comply with the corrective action requirements set forth in their Part B *RCRA* permit (40 CFR 264.90 through 264.101).	Review the installations Part B permit for corrective action requirements. (2)(5) Determine if the Federal or state government has *RCRA Corrective Action* authority. (2)(5) (NOTE: In some states, the state has authority for the *RCRA* base program and the Federal government has authority for the *RCRA Corrective Action* program.) Determine if the installation is following required schedules and providing necessary submissions (i.e., work plans, reports, etc) to regulators. (2)(5) Verify that the installation program is addressing all significant releases from solid waste management units on the installation. (2)(5)
...	...
OFFSITE CONTAMINATION	
7-12. The Army is required to conduct response actions outside of installation boundaries where the installation is reasonably considered the sole or the major source of the release (AR 200-1, para 9-8).	Determine if data indicates contamination is migrating from a source on Army-controlled property to outside the installation boundaries. (2) Verify that a process is in place to notify the following: (1) - the MACOM environmental, legal and public affairs staffs - the USEPA regional office and state and local authorities. Verify that offsite response plans are coordinated with USEPA, state, and local authorities, and have been authorized by Deputy Assistant Secretary of the Army (DASA) Environmental Safety and Occupational Health (ESOH). (1) Verify that the installation seeks to minimize future commitments and liabilities. (1)
...	...
RELEASES	
7-13. Any spill of a hazardous substance must be reported to the installation on-scene coordinator (IOSC) immediately (AR 200-1, para 8-3(a)).	Verify that spills of hazardous substances have been reported to the IOSC (See Appendix 7-1). (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (5) Fire Department (13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT / SUPERFUND AMENDMENT AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-14. Releases in excess or equal to reportable quantities of hazardous substances shall be reported to the NRC immediately (40 CFR 302.1 through 302.6).	Verify that spills in excess of the reportable quantities listed in column 40 CFR 302.4 in Appendix 7-1 have been reported. (2) Verify that a procedure is in place for the notification of the NRC immediately after becoming aware of the release. (2) Verify that if mixtures or solutions of hazardous substances are released, except for radionuclides, it is reported when either of the following occur: (2) - the quantity of all hazardous constituents of the mixture or solution is known and a reportable quantity or more of any hazardous constituent is released - the quantity of one or more of the hazardous constituents of the mixture or solution is unknown and the total amount of the mixture or solution released equals or exceeds the reportable quantity for the hazardous constituent with the lowest reportable quantity. (NOTE: Notification requirements for radionuclide releases are not included in this protocol.)
...	...

7-15. Installations with releases that are continuous and stable in quantity and rate are required to meet limited notification requirements (40 CFR 302.8).	Determine if the installation has any releases that are continuous and stable in quantity and rate. (2)
	
	Verify that the following notifications have been given: (2)
	
	- initial telephone notification
	- initial written notification within 30 days of the initial telephone notification
	- follow-up notification within 30 days of the first anniversary date of the initial written notification
	- notification of changes in:
	  - the composition or source of the release
	  - information submitted in the initial written notification
	  - the follow-up notification required on the first anniversary date of the initial written notification
	- notification when there is an increase in the quantity of the hazardous substances being released in any 24 hour (h) period that represents a statistically significant increase.
	
	(NOTE: Instead of the initial written report or follow-up report, the installation may submit a copy of the Toxic Release Inventory form submitted under *SARA Title III* Section 313 for the previous 1 July, provided that conditions are met as described in 40 CFR 302.8(j).)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (5) Fire Department (13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT / SUPERFUND AMENDMENT AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

7-16. Installations where an extremely hazardous chemical is produced, used or stored and where there is a release of a reportable quantity of any extremely hazardous substance of *CERCLA* hazardous substance are required to meet specific notification requirements (40 CFR 355.40).	Verify that a procedure is in place to immediately notify the community emergency coordinator or local emergency planning committee, or Governor if there is no planning committee, of any area likely to be affected and the state emergency response commission of any State likely to be affected by the release, of a release of a reportable quantity or greater of an extremely hazardous substance or a *CERCLA* hazardous substance. (1)(2)
	
	Check Appendix 7-1 for a listing of extremely hazardous substances and look-up the reportable quantities for those substances in Appendix 7-1. (1)(2)
	
	Verify that a procedure is in place to provide a written follow-up emergency notification as soon as practicable after the release. (1)(2)
	
	(NOTE: These notification requirements do not apply to:
	- any release resulting in exposure to persons solely within the boundaries of the facility
	- any release which is a "federally permitted release" as defined by *CERCLA*
	- any release which is continuous and stable except:
	  - initial notification
	  - notification of a statistically significant increase
	  - notification of a new release
	  - notification in the changes of the normal release
	- any release of a pesticide exempt by *CERCLA*
	- any release meeting the definition of release under *CERCLA*.)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (5) Fire Department (13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT / SUPERFUND AMENDMENT AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
EMERGENCY PLANNING **7-17.** Installations where there are extremely hazardous substances present in amounts equal to or greater than the threshold limits found in Appendix 7-1 are required to follow specific emergency planning procedures (40 CFR 355.10 through 355.30, Appendix A, and AR 200-1, para 8-1c(4)). ...	Determine if the installation has any of the items listed in Appendix 7-1 in amounts equal to or greater than those listed in Appendix 7-1. (1)(2) Verify that the installation has notified the state emergency response commission, or Governor if there is not an emergency response commission, that the installation is subject to emergency planning requirements within 60 days after an installation first becomes subject to the requirements. (1)(2) (NOTE: The installation is expected to conform to emergency planning requirements, to the extent security concerns permit.) Verify that the facility has notified the local emergency planning committee, or Governor if there is no committee, of the facility representative on or before September 1987 or 30 days after establishment of a local emergency planning committee, whichever is earlier. (1)(2) Verify that a representative has been designated to participate in the local emergency planning process as the installation emergency response coordinator. (1)(2) Verify that a procedure is in place to notify the local emergency planning committee of changes at the installation that are relevant to emergency planning. (1)(2) ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (5) Fire Department (13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT / SUPERFUND AMENDMENT AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-18. Installations which are required to prepare or have available an MSDS for a hazardous chemical under Occupational Safety and Health Administration (OSHA) are required to meet specific reporting requirements (40 CFR 370.20 through 370.28).	Verify that MSDS sheets are submitted to the emergency commission and the fire department with jurisdictions over the facility for each hazardous chemical present at the facility according to the following thresholds: (1)(2) - for all hazardous chemicals present at the facility at any one time in amounts equal to or greater than 4540 kilogram (kg) (10,000 pounds (lb)) - for all extremely hazardous substances present at the facility in amounts greater than or equal to 227 kg (500 lb) or the TPQ (See Appendix 7-1). Verify that the facility submitted MSDSs on or before 17 October 1990 (or within 3 mo after the facility has become subject to these requirements), for all hazardous chemicals and extremely hazardous substances. (1)(2) Determine that if instead of submitting MSDS sheets, the following has been submitted: (1)(2) - a list of hazardous chemicals for which the MSDS is required, grouped by hazard category - the chemical or common name of each hazardous chemical - any hazardous component of each hazardous chemical except when reporting mixture. Verify that revised MSDS sheets are provided within 3 mo after the discovery of significant new information concerning the hazardous chemical. (1)(2) Verify that a Tier I or Tier II form has been submitted on or before 1 March 1990 (or 1 March of the first year after the facility first becomes subject to these requirements), and annually thereafter, to the emergency response commission, emergency planning committee, and the fire department with jurisdiction over the installation for: (1)(2) - all hazardous chemicals present at the facility at any one time in amounts equal to or greater than 4540 kg (10,000 lb) during the preceding year - extremely hazardous substances present at the facility in amounts greater than or equal to 227 kg (500 lb) - approximately 208 liters (L) (55 gal) or the TPQ, whichever is lower.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (5) Fire Department (13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC) (21) Public Affairs Office (PAO)

Appendix 7-1

Consolidated List of Chemicals Covered in Title III of Superfund Amendments and Reauthorization Act (SARA)

This consolidated chemical list includes chemicals subject to reporting requirements under Title III of SARA of 1986. This consolidated chemical list does not contain all chemicals that are subject to reporting requirements in Section 311 and 312 of SARA Title III. These hazardous chemicals, for which MSDS must be developed under OSHA Hazard Communication Standards, are identified by broad criteria, rather than enumeration. There are over 50,000 such substances that meet the criteria. The consolidated list has been prepared to help determine whether there is a need to submit reports under Section 304 or 313 of Title III and, for a specific chemical, what reports need to be submitted.

The list includes chemicals referenced under the four following Federal statutory provisions:

1. SARA Section 302 Extremely Hazardous Substances - The presence of which, in sufficient quantities, requires certain emergency planning activities to be conducted. Releases of these substances are also subject to reporting under Section 304 of Title III. The final rule listing the extremely hazardous substances and their TPQ, is found in 40 CFR 355.

2. CERCLA Hazardous Substances Reportable Quantity (RQ) Chemicals - Releases of which are subject to reporting under the CERCLA or "Superfund" of 1980. Such releases are also subject to reporting under Section 304 of Title III. CERCLA hazardous substances, and their RQ, are listed in 40 CFR Part 302, Table 302.4.

3. SARA Section 313 Toxic Chemicals - Emissions or releases of which must be reported annually as part of SARA Title III's community right-to-know provisions. A list of these toxic chemicals is found in 40 CFR 372.65.

4. RCRA Hazardous Wastes - from the "P" and "U" lists (40 CFR 261.33), of specific chemicals. RCRA hazardous wastes from the "F" and "K" lists are not included here; such waste streams are also CERCLA hazardous substances. This listing is provided as an indicator that you may already have data on a specific chemical that can be used for Title III reporting purposes.

There are four columns in the consolidated list corresponding to these four statutory provisions. If a chemical is listed as an extremely hazardous substance under Section 302, its TPQ is given in the extremely hazardous sunstance column. Similarly, the CERCLA RQ is given for those chemicals that are listed as hazardous substances. A key to the symbols used in the Section 302 and CERCLA columns precedes the list. An "X" in the column for Section 313 indicates that the chemical is subject to reporting under Section 313.

The letter-and-digit code in the column for 40 CFR 261.33 is the chemical's RCRA hazardous waste code. A blank in any of these columns indicates that the chemical is not subject to the corresponding statutory authorities.

The Chemical Abstract Service (CAS) registry number is provided for each chemical on the list.

For additional copies of this list, address requests to:

Title III Hotline
US Environmental Protection Agency
WH-562A
401 M Street, SW
Washington, DC 20640
Phone: (800) 535-0262

Key to Symbols in the Consolidated Chemical List

- Indicates that the RQ is subject to change when an assessment of potential carcinogenicity and/or chronic toxicity is completed; until then, the statutory RQ applies.

- Indicates that an adjusted RQ has been proposed, but a final judgment has not been made.

+ - EPA has proposed to adjust the RQ for radionuclides by establishing RQs in units of curies; until then, the 1 lb RQ applies.

* - Indicates that the chemical is proposed for deletion from the list of extremely hazardous substances.

** - Indicates that no RQ is assigned to this generic or broad class.

SARA TITLE III
CONSOLIDATED CHEMICAL LIST

This is an alphabetical listing of the consolidated list of chemicals.
Numbered chemicals are listed first.

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
1,Amino-2-methyl-anthraquinone			x			82-28-0
1-Butanamine,N-butyl-N-nitroso-		10	x	U172		924-16-3
1-Methylbutadiene		100		U186		504-60-9
1-Naphthalamine		100	x	U167		134-32-7
1-Propanamine		5000		U194		107-10-8
1-Propanol,2,3-dibromo-phosphate (3:1)		10	x	U235		126-72-7
(1,1'-Biphenyl)-4,4'diamine, 3,3'dimethoxy-		100	x	U091		119-90-4
(1,1'-Biphenyl)-4,4'diamine, 3,3'dimethyl-		10	x	U095		119-93-7
1,1-Dichloroethane		1000		U076		75-34-3
1,1-Dichloroethylene		100	x	U078		75-35-4
1,2-Benzenedicarboxylic acid,[bis(2-ethylhex-yl)]ester		100	x	U028		117-81-7
1,2-Benzenedicarboxylic acid, diethyl ester (diethyl phthlate)		1000	x	U088		84-66-2
1,2-Benzenediol,4-[1-hy-droxy-2-(methylamino) ethyl]-		1000		P042		51-43-4
1,2-Benzisothiazolin-3(2H) one,1,1-dioxide		100	x	U202		81-07-2
1,2-Benzphenanthrene		100		U050		218-01-9
1,2-Butylene oxide			x			106-88-7
1,2-Dibromo-3-chloropropane		1	x	U066		96-12-8
1,2-Dichloroethane		100	x	U077		107-06-2
1,2-Dichloroethylene			x			540-59-0
1,2-Dichloropropane		1000	x	U083		78-87-5
1,2-Dimethylhydrazine		1		U099		540-73-8
1,2-Diphenylhydrazine		10	x	U109		122-66-7
1,2-Oxathiolane,2,2-diox ide		10	x	U193		1120-71-4
1,2-trans-Dichloroethylene		1000		U079		156-60-5
1,3-Benzenediol		5000		U201		108-46-3
1,3-Benzodioxole, 5-propyl		10		U090		94-58-6
1,3-Benzodioxole,5-)1-1 propenyl)		100	x	U141		120-58-1
1,3-Benzodioxole, 5-) 2, propenyl)		100	x	U203		94-59-7

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
1,3-Butadiene			x			
1,3-Dichloropropylene		100	x	U084		542-75-6
1,3-Isobenzofurandione		5000	x	U190		85-44-9
1,4-Diethylene dioxide (1,4-Dioxane)		100	x	U108		123-91-1
1,4-Naphthalenedione		5000		U166		130-15-4
2-Acetylaminofluorene		1	x	U005		53-96-3
2-Aminoanthraquinone			x			117-79-3
2-Butanone peroxide		10		U160		1338-23-4
2-Butanone (Methyl ethyl ketone)		5000	x	U159		78-93-3
2-Butene,1,4-dichloro-		1		U074		764-41-0
2-Chloroacetophenone			x			532-27-4
2-Chloroethyl vinyl ether		1000		U042		110-75-8
2-Chlorophenol		100		U048		95-57-8
2-Cyclohexl-4, 6-dinitrophenoll		100		P034		131-89-5
2-Ethoxyethanol		100	x			110-80-5
2-Furancarboxaldehyde		5000		U125		98-01-1
2-Methoxyethanol			x			109-86-4
2-Naphthylamine		10	x	U168		91-59-8
2-Nitropropane		10	x	U171		79-46-9
2-Phenylphenol			x			90-43-7
2-Picoline		5000		U191		109-06-8
2,2-Dichloropropionic acid		5000				75-99-0
2,3-Dichloropropene		100	x			78-88-6
2,3,4-Trichlorophenol		10	x			15950-66-0
2,3,5-Trichlorophenol		10				933-78-8
2,3,6-Trichlorophenol		10				933-75-5
2,3,7,8-Tetrachlorodibenzo p-dioxin (TCDD)		1				1746-01-6
2,4-D acid		100	x	U240		94-75-7
2,4-D esters		100				94-11-1
2,4-D esters		100				94-79-1
2,4-D esters		100				94-80-4
2,4-D esters		100				1320-18-9
2,4-D esters		100				1928-38 7
2,4-D esters		100				2971-38-2
2,4-D esters		100				53467-11-1
2,4-D esters		100				1928-61-6
2,4-D esters		100				1929-73-3
2,4-D esters		100				25168-26-7
2,4-Diaminoanisole sulfate			x			39156-41-7
2,4-Diaminosole			x			615-41-7
2,4-Diaminotoluene		10		U221		823-40-5
2,4-Dichlorophenol		100	x	U081		120-83-2
2,4-Dimethylphenol		100	x	U101		105-67-9
2,4-Dinitrophenol		10	x	P048		51-28-5
2,4,5-T esters		1000				25168-15-4
2,4,5-T salts		1000				13560-99-1
2,4,5-T amines		5000				1319-72-8
2,4,5-T amines		5000				3813-14-7
2,4,5-T amines		5000				6369-96-6

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
2,4,5-T amines		5000				6369-97-7
2,4,5-T amines		5000				2008-46-0
2,4,5-T esters		1000				93-79-8
2,4,5-T esters		1000				1928-47-8
2,4,5-T esters		1000				2545-59-7
2,4,5-T esters		1000				61792-07-2
2,4,5-T		1000		U232		93-76-5
2,4,5-TP acid esters		100				32534-95-5
2,5-Furandione		5000	x	U147		108-31-6
2,6-Dichlorophenol		100		U082		87-65-0
2,6-Xylidine			x			87-62-7
3,3-Dichlorobenzidine			x			91-94-1
3,4-Diaminotoluene		10	x	U221		95-80-7
3,4-Dinitrotoluene		10				610-39-9
3,4,5-Trichlorophenol		10				609-19-8
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide		5000		U192		23950-58-5
4-Aminoazobenzene			x			60-09-3
4-Aminobiphenyl			x			92-67-1
4-Chloro-m-cresol		5000		U039		59-50-7
4-Chlorophenyl phenyl ether		5000				7005-72-3
4-Nitrobiphenyl			x			92-93-3
4,4'-Diaminodiphenyl ether			x			101-80-4
4,4'-Isopropylidenediphenol			x			80-05-7
4,4'-Methylene bis(N,N-dimethyl) benzenamine			x			101-61-1
4,4'-Methylenedianiline			x			101-77-9
4,4'-Thiodianiline			x			139-65-1
6-dinitrophenoll						
5-Nitro-o-anisidine			x			99-59-2
Acenaphthene		100				83-32-9
Acenaphthylene		5000				208-96-8
Acetaldehyde		1000	x	U001		75-07-0
Acetaldehyde, trichloro-		5000		U034		75-87-6
Acetamide			x			60-35-5
Acetamide-N-(4-ethoxyphenyl)-		100		U187		62-44-2
Acetamide,N-(aminothioxomethyl)-		1000		P002		591-08-2
Acetic acid		5000				64-19-7
Acetic acid, ethyl ester		5000		U112		141-78-6
Acetic acid, fluoro, sodium salt	10/10,000	10		P058		62-74-8
Acetic acid, lead(2+) salt		10		U144		301-04-2
Acetic acid, thallium(1+) salt		100		U214		563-68-8
Acetic anhydride		5000				108-24-7
Acetone		5000	x	U002		67-64-1
Acetone cyanohydrin	1000	10		P069		75-86-5
Acetone thiosemicarbazide	1000/10,000					1752-30-3
Acetonitrile		5000	x	U003		75-05-8

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Acetophenone		5000		U004		98-86-2
Acetyl bromide		5000				506-96-7
Acetyl chloride		5000		U006		75-36-5
Acrolein	500	1	x	P003		107-02-8
Acrylamide	1000/10,000	5000	x	U007		79-06-1
Acrylic acid		5000	x	U008		79-10-7
Acrylonitrile	10,000	100	x	U009		107-13-1
Acrylyl chloride	100					814-68-6
Adipic acid		5000				124-04-09
Adiponitrile	1000					111-69-3
Aldicarb	100/10,000	1		P070		116-06-3
Aldrin	500/10,000	1	x	P004		309-00-2
Allyl alcohol	1000	100	x	P005		107-18-6
Allyl chloride		1000	x			107-05-1
Allylamine	500					107-11-9
alpha,alpha-Dimethyl phenethylamine		5000		P046		122-09-8
alpha-Endosulfan		1				959-98-8
alpha-BHC		10				319-84-6
Aluminum (fume or dust)			x			7429-90-5
Aluminum oxide (fibrous forms)			x			1344-28-1
Aluminum phosphide	500	100		P006		20859-73-8
Aluminum sulfate		5000				10043-01-3
Aminopterin	500/10,000					54-62-6
Amiton	500					78-53-5
Amiton oxalate	100/10,000					3734-97-2
Amitrole		10		U011		61-82-5
Ammonia	500	100	x			7664-41-7
Ammonium acetate		5000				631-61-8
Ammonium benzoate		5000				1863-63-4
Ammonium bicarbonate		5000				1066-33-7
Ammonium bichromate		10				7789-09-5
Ammonium bifluoride		100				1341-49-7
Ammonium bisulfite		5000				10192-30-0
Ammonium carbamate		5000				1111-78-0
Ammonium carbonate		5000				506-87-6
Ammonium chloride		5000				12125-02-9
Ammonium chromate		10				7788-98-9
Ammonium citrate,dibasic		5000				3012-65-5
Ammonium fluoborate		5000				13826-83-0
Ammonium fluoride		100				12125-01-8
Ammonium hydroxide		1000				1336-21-6
Ammonium nitrate (solution)			x			6484-52-2
Ammonium oxalate		5000				5972-73-6
Ammonium oxalate		5000				6009-70-7
Ammonium oxalate		5000				14258-49-2
Ammonium picrate		10		P009		131-74-8
Ammonium silicofluoride		1000				16919-19-0
Ammonium sulfamate		5000				7773-06-0
Ammonium sulfate (solution)			x			7783-20-2

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Ammonium sulfide		100				12135-76-1
Ammonium sulfite		5000				10196-04-0
Ammonium tartrate		5000				14307-43-8
Ammonium tartrate		5000				3164-29-2
Ammonium thiocyanate		5000				1762-95-4
Ammonium vanadate		1000		P119		7803-55-6
Amphetamine	1000					300-62-9
Amyl acetate		5000				628-63-7
Analine,2,4,6-trimethyl-	500					88-05-1
Aniline	1000	5000	x	U012		62-53-3
Anthracene		5000	x			120-12-7
Antimony		5000	x			7440-36-0
Antimony pentachloride		1000				7647-18-9
Antimony pentafluoride	500					7783-70-2
Antimony potassium tartrate		100				28300-74-5
Antimony tribromide		1000				7789-61-9
Antimony trichloride		1000				10025-91-9
Antimony trifluoride		1000				7783-56-4
Antimony trioxide		1000				1309-64-4
Antimycin A	1000/10,000					1397-94-0
Antu	500/10,000					86-88-4
Aroclor 1016		1				12674-11-2
Aroclor 1221		1				11104-28-2
Aroclor 1232		1				11141-16-5
Aroclor 1242		1				53469-21-9
Aroclor 1248		1				12672-29-6
Aroclor 1254		1				11097-69-1
Aroclor 1260		1				11096-82-5
Arsenic		1	x			7440-38-2
Arsenic acid		1		P010		1327-52-2
Arsenic acid		1		P010		7778-39-4
Arsenic disulfide		1				1303-32-8
Arsenic pentoxide	100/10,000	1		P011		1303-28-2
Arsenic trisulfide		1				1303-33-9
Arsenic trioxide	100/10,000	1		P012		1327-53-3
Arsenous trichloride	500	1				7784-34-1
Arsine	100					7784-42-1
Arsine, diethyl-		1		P038		692-42-2
Asbestos		1	x			1332-21-4
Azaserine		1		U015		115-02-6
Azinophos-ethyl	100/10,000					2642-71-9
Azinophos-methyl	10/10,000					86-50-0
Barium and compounds			x			7440-39-3
Barium cyanide		10		P013		542-62-1
Benzal chloride	500	5000	x	U017		98-87-3
Benzamide			x			55-21-0
Benz[a]anthracene		10		U018		56-55-3
Benzanthracene,7,12-dimethyl-		1		U094		57-97-6
Benz[c]acridine		100		U016		225-51-4
Benzenamine,2-methyl, 5-nitro-		100		U181		99-55-8

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Benzenamine,2-methyl, hydrochloride		100	x	U222		636-21-5
Benzenamine,3-(trifluoro-methyl)-	500					98-16-8
Benzenamine-4-chloro		1000		P024		106-47-8
Benzenamine,4-chloro-2-methyl-hydrochloride		100		U049		3165-93-3
Benzenenamine, 4-methyl		100		U353		106-49-0
Benzenamine,4-nitro-		5000		P077		100-01-6
Benzenamine 4,4'-methylenebis-2-chloro		10	x	U158		101-14-4
Benzenamine,NN-dimeth-yl-4-phenylazo		10	x	U093		60-11-7
Benzene		10	x	U019		71-43-2
Benzene,1-bromo-4-phenoxy-		100		U030		101-55-3
Benzene,1-(chloro-methyl)-4-nitro-	500/10,000					100-14-1
Benzene,1-methyl-2,4-dinitro-		10	x	U105		121-14-2
Benzene,1-methylethyl-(Cumene)		5000	x	U055		98-82-8
Benzene,1,2-dichloro		100	x	U070		95-50-1
Benzene,1,2,4,5-tetrachloro-		5000		U207		95-94-3
Benzene,1,3-dichloro		100	x	U071		541-73-1
Benzene,1,3-diisocy-anatomethyl		100	x	U223		26471-62-5
Benzene,1,3,5-trinitro-		10		U234		99-35-4
Benzene,1,4-dichloro		100	x	U072		106-46-7
Benzene,2-methyl-1,3-dinitro-		100	x	U106		606-20-2
Benzene, chloro-		100	x	U037		108-90-7
Benzene, dimethyl-		1000	x	U239		1330-20-7
Benzene, hexachloro-		10	x	U127		118-74-1
Benzene, hexahydro-(cyclohexane)		1000	x	U056		110-82-7
Benzene, m-dimethyl-		1000	x			108-38-3
Benzene, methyl-(toulene)		1000	x	U220		108-88-3
Benzene, o-dimethyl-		1000	x			95-47-6
Benzene, p-dimethyl-		1000	x			106-42-3
Benzene, pentachloro-		10		U183		608-93-5
Benzene, pentachloronitro-		100	x	U185		82-68-8
Benzenearsonic acid	10/10,000					
Benzenesulfonyl chloride		100		U020		98-09-9
Benzidine		1	x	U021		92-87-5
Benzimidazole,4,5-di-chloro-2-(trifluoromethyl)	500/10,000					3615-21-2
Benz[j]aceanthrylene,1,2-dihydro-3-methyl-		10		U157		56-49-5
Benzoic acid		5000				65-85-0
Benzo[a]pyrene		1		U022		50-32-8

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Benzo[b]fluoranthene		1				205-99-2
Benzo[ghi]perylene		5000				191-24-2
Benzoic acid		5000				65-85-0
Benzo[jk]fluorene		100		U120		206-44-0
Benzo[k]fluoranthene		5000				207-08-9
Benzonitrile		5000				100-47-0
Benzotrichloride	500	10	x	U023		98-07-7
Benzoyl chloride		1000	x			98-88-4
Benzoyl peroxide			x			94-36-0
Benzyl chloride	500	100	x	P028		100-44-7
Benzyl cyanide	500					140-29-4
Beryllium chloride		1				7787-47-5
Beryllium fluoride		1				7787-49-7
Beryllium nitrate		1				13597-99-4
Beryllium nitrate		1				7787-55-5
Beryllium		10	x	P015		7440-41-7
beta-Endosyulfan		1				33213-65-9
beta-BHC		1				319-85-7
beta-Chloronaphthalene		5000		U047		91-58-7
Bicyclo[2.2.1]heptane-2-carbonitrile,5-chloro-6-(((methyla	500/10,000					15271-41-7
Biphenyl			x			92-52-4
Bis(2-chloroethoxy) methane		1000		U024		111-91-1
Bis(2-chloroisopropyl) ether		1000	x	U027		108-60-1
Bis(2-ethylhexyl)adipate			x			103-23-1
Bis(chloromethyl)ketone	10/10,000					534-07-6
Bitoscanate	500/10,000					4044-65-9
Boron trichloride	500					10294-34-5
Boron trifluoride compound with methyl ether (1:1)	1000					353-42-4
Boron trifluoride	500					7637-07-2
Bromadiolone	100/10,000					18772-56-7
Bromine	500					7726-95-6
Bromoacetone		1000		P017		598-31-2
Bromochlorodi-fluoromethane (Halon 1211)			x			353-59-3
Bromoform		100	x	U225		75-25-2
Bromotrifluoro-methane (Halon 1301)			x			75-63-8
Brucine		100		P018		357-57-3
Butanoic acid,4-[bis(2-chloroethyl)amino] benzene-		10		U035		305-03-3
Butyl benzyl Phthalate		100	x			85-68-7
Butyl acetate		5000				123-86-4
Butyl acrylate			x			141-32-2
Butylamine		1000				
Butyraldehyde			x			123-72-8
Butyric acid		5000				107-92-6

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
CI Acid Green 3			x			4680-78-8
CI Basic Green 4			x			569-64-2
CI Basic Red 1			x			989-38-8
CI Direct Black 38			x			1937-37-7
CI Direct Blue 6			x			2602-46-2
CI Direct Brown 95			x			16071-86-6
CI Disperse Yellow 3			x			2832-40-8
CI Food Red 15			x			81-88-9
CI Food Red 5			x			3761-53-3
CI Solvent Orange 7			x			3118-97-6
CI Solvent Yellow 14			x			824-07-0
CI Solvent Yellow 34 (Auramine)		100	x	U014		492-80-8
CI Solvent Yellow 3			x			97-56-3
CI Vat Yellow 4			x			128-66-5
Cacodylic acid		1		U136		75-60-5
Cadmium		10	x			7440-43-9
Cadmium acetate		10				543-90-8
Cadmium bromide		10				7789-42-6
Cadmium chloride		10				10108-64-2
Cadmium oxide	100/10,000					1306-19-0
Cadmium stearate	1000/10,000					2223-93-0
Calcium arsenate	500/10,000	1				7778-44-1
Calcium arsenite		1				52740-16-6
Calcium carbide		10				75-20-7
Calcium chromate		10		U032		13765-19-0
Calcium cyanamide			x			156-62-7
Calcium cyanide		10		P021		592-01-8
Calcium dodecylbenzene sulfonate		1000				26264-06-2
Calcium hypochlorite		10				7778-54-3
Cantharidin	100/10,000					56-25-7
Captan		10	x			133-06-2
Carbachol chloride	500/10,000					51-83-2
Carbamic acid, ethyl ester		100	x	U238		51-79-6
Carbamic acid, methyl-nitroso-,ethyl ester		1		U178		615-53-2
Carbamic acid, methyl-o-(((2,4-dimethyl-1,3-dithiolan-2-y	100/10,000					26419-73-8
Carbamic chloride, dimethyl-		1	x	U097		79-44-7
Carbaryl		100	x			63-25-2
Carbofuran	10/10,000	10				1563-66-2
Carbon disulfide	10,000	100	x	P022		75-15-0
Carbon oxyfluoride		1000		U033		353-50-4
Carbon tetrachloride		10	x	U211		56-23-5
Carbonyl sulfide			x			463-58-1
Carbophenothion	500					786-19-6
Catechol			x			120-80-9
Chloramben			x			133-90-4
Chlordane	1000	1	x	U036		57-74-9
Chlorfenvinfos	500					470-90-6

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Chlorinated fluorocarbon (Freon 113)			x			76-13-1
Chlorine	100	10	x			7782-50-5
Chlorine cyanide		10		P033		506-77-4
Chlorine dioxide			x			10049-04-4
Chlormephos	500					24934-91-6
Chlormequat chloride	100/10,000					999-81-5
Chlornaphazine		100		U026		494-03-1
Chloroacetaldehyde		1000		P023		107-20-0
Chloroacetic acid	100/10,000		x			79-11-8
Chlorobenzilate		10	x	U038		510-15-6
Chlorodibromomethane		100				124-48-1
Chloroethane		100	x			75-00-3
Chloroethanol	500					107-07-3
Chloroethyl chloroformate	1000					627-11-2
Chloroform	10,000	10	x	U044		67-66-3
Chloromethyl methyl ether	100	10	x	U046		107-30-2
Chlorophacinone	100/10,000					3691-35-8
Chloroprene			x			126-99-8
Chlorothalonil			x			1897-45-6
Chloroxuron	500/10,000					1982-47-4
Chlorpyrifos		1				2921-88-2
Chlorsulfonic acid		1000				7790-94-5
Chlorthiophos	500					21923-23-9
Chromic acetate		1000				1066-30-4
Chromic acid		10				11115-74-5
Chromic acid		10				7738-94-5
Chromic chloride	1/10,000					10025-73-7
Chromic sulfate		1000				10101-53-8
Chromium		5000	x			7440-47-3
Chromous chloride		1000				10049-05-5
Cobalt			x			7440-50-8
Cobalt,((2,2'-1,2-ethanediylbis (nitrilomethylidyne))bis(6)	100/10,000					62207-76-5
Cobalt carbonyl	10/10,000					10210-68-1
Cobaltous bromide		1000				7789-43-7
Cobaltous formate		1000				544-18-3
Cobaltous sulfamate		1000				14017-41-5
Colchicine	10/10,000					64-86-8
Copper		5000	x			7440-50-8
Copper cyanide		10		P029		544-92-3
Coumaphos	100/10,000	10				56-72-4
Coumatetralyl	500/10,000					5836-29-3
Cresol(s) (mixed isomers)		1000	x	U052		1319-77-3
Cresol,o-	1000/10,000	1000	x	U052		95-48-7
Creosote		1	x	U051		8001-58-9
Crimidine	100/10,000					535-89-7
Crotonaldehyde,(E)-	1000	100		U053		123-73-9
Crotonaldehyde	1000	100		U053		4170-30-3
Cumene hyroperoxide			x			80-15-9
Cupferron			x			135-20-6

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Cupric acetate		100				142-71-2
Cupric chloride		10				7447-39-4
Cupric nitrate		100				3251-23-8
Cupric oxalate		100				5893-66-3
Cupric sulfate		10				7758-98-7
Cupric sulfate ammoniated		100				10380-29-7
Cupric tartrate		100				815-82-7
Cyanides (soluble cyanide salts		10		P030		57-12-5
Cyanogen		100		P031		460-19-5
Cyanogen bromide	500/10,000	1000		U246		506-68-3
Cyanogen iodide	1000/10,000					506-78-5
Cyanophos	1000					2636-26-2
Cyanuric fluoride	100					675-14-9
Cyclohexanone		5000		U057		108-94-1
Cycloheximide	100/10,000					66-81-9
Cyclohexylamine	10,000					108-91-8
Cyclophosphamide		10		U058		50-18-0
D-Glucopyranose,2-deoxy-2-(3-methyl-3-nitrosoureido)-		1		U206		18883-66-4
Daunomycin		10		U059		20830-81-3
DDD		1		U060		72-54-8
DDE		1				72-55-9
DDT		1		U061		50-29-3
Decaborane(14)	500/10,000					17702-41-9
Decabromodiphenyl oxide			x			1163-19-5
Delta-BHC		1				319-86-8
Demeton	500					8065-48-3
Demeton-S-methyl	500					919-86-8
Di-(2-ethylhexyl)phthlate (DEHP)			x			177-81-7
Di-n-octyl phthalate		5000	x	U107		117-84-0
Di-n-propylnitrosamine (N-Nitrosodi-n-propylamine)		10	x	U111		621-64-7
Dialifor	100/10,000					10311-84-9
Diallate		100	x	U062		2303-16-4
Diaminotoluene (mixed isomers)		10	x	U221		25376-45-8
Diaminotoluene (mixed isomers)		10				496-72-0
Diazinon		1				333-41-5
Diazomethane			x			334-88-3
Dibenz(a)lpyrene		10		U064		189-55-9
Dibenz[a,h] anthracene		1		U063		53-70-3
Dibenzofuran			x			132-64-9
Diborane	100					19287-45-7
Dibromotetrafluor-ethane (Halon 2402			x			124-73-2
Dibutyl phthalate		10	x	U069		84-74-2
Dicamba		1000				1918-00-9
Dichlone		1				117-80-6
Dichlorobenzene (mixed isomers)		100	x			25321-22-6

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Dichlorobromomethane		5000	x			75-27-4
Dichlorodifluoromethane (CFC-12)		5000	x	U075		75-71-8
Dichloroethyl ether	10,000	10	x	U025		111-44-4
Dichloromethyl ether	100	10	x	P016		542-88-1
Dichloromethyl-phenylsilane	1000					149-74-6
Dichloropropane		1000				26638-19-7
Dichloropropane-Dichloropropene (mixture		100				8003-19-8
Dichloropropene		100				26952-23-8
Dichlorotetrafluoro-ethane (CFC-114)			x			
Dichlorvos	1000	10	x			62-73-7
Dicholobenil		100				1194-65-6
Dicofol			x			115-32-2
Dicrotophos	100					141-66-2
Dieldrin		1		P037		60-57-1
Diepoxybutane	500	10	x	U085		1464-53-5
Diethanolamine			x			111-42-2
Diethyl chlorophosphate	500					814-49-3
Diethyl-p-nitrophenyl phosphate		100		P041		311-45-5
Diethyl sulfate			x			64-67-5
Diethylamine		100				109-89-7
Diethylcarbamazine citrate	100/10,000					1642-54-2
Diethylstilbestrol		1		U089		56-53-1
Digitoxin	100/10,000					71-63-6
Diglycidyl ether	1000					2238-07-5
Digoxin	10/10,000					20830-75-5
Diisopropylfluorophosphate	100	100		P043		55-91-4
Dimefox	500					115-26-4
Dimethoate	500/10,000	10		P044		60-51-5
Dimethyl-p-phenyl-enediamine	10/10,000					99-98-9
Dimethyl phosphoro-chloridothioate	500					2524-03-0
Dimethyl phthalate		5000	x	U102		131-11-3
Dimethyl sulfate	500	100	x	U103		77-78-1
Dimethylamine		1000		U092		124-40-3
Dimethyldichlorosilane	500					75-78-5
Dimethylhydrazine	1000	10	x	U098		57-14-7
Dimetilan	500/10,000					644-64-4
Dinitrobenzene (mixed)		100				25154-54-5
Dinitrophenol		10				25550-58-7
Dinitrotoulene	10/10,000	10	x	P047		534-52-1
Dinitrotoluene (mixed isomers)		10	x			25321-14-6
Dinoseb	100/10,000	1000		P020		88-85-7
Dinoterb	500/10,000					1420-07-1
Dioxathion	500					78-34-2
Diphacinone	10/10,000					82-66-6

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Diphosphoramide, octamethyl-	100	100		P085		152-16-9
Dipropylamine		5000		U110		142-84-7
Diquat		1000				85-00-7
Diquat		1000				2764-72-9
Disulfoton	500	1		P039		298-04-4
Dithiazinine iodide	500/10,000					514-73-8
Dithiobiuret	100/10,000	100		P049		541-53-7
Diuron		100				330-54-1
Dodecylbenzenesulfonic acid		1000				27176-87-0
Emetine,dihyrochloride	1/10,000					316-42-7
Endosulfan	10/10,000	1		P050		115-29-7
Endosulfan sulfate		1				1031-07-8
Endothall		1000		P088		145-73-3
Endothion	500/10,000					2778-04-3
Endrin	500/10,000	1		P051		72-20-8
Endrin aldehyde		1				7421-93-4
Epichlorohydrin	1000	100	x	U041		106-89-8
EPN	100/10,000					2104-64-5
Ergocalciferol	1000/10,000					50-14-6
Ergotamine tartrate	500/10,000					379-79-3
Ethanamine,N-ethyl-N-nitroso-		1	x	U174		55-18-5
Ethane,1,1'-oxybis-		100		U117		60-29-7
Ethane,1,2-dibromo-		1	x	U067		106-93-4
Ethane,1,1,2-trichloro		100	x	U227		79-00-5
Ethane,1,1,1,2-tetrachloro-		100		U208		630-20-6
Ethane,1,1,2,2-tetrachloro-		100	x	U209		79-34-5
Ethane, hexachloro		100	x	U131		67-72-1
Ethanesulfonyl chloride, 2-chloro-	500					1622-32-8
Ethanethioamide		10	x	U218		62-55-5
Ethanol,1,2-dichloro-acetate	1000					10140-87-1
Ethanol,2,2'-(nitroso imino) bis-		1		U173		1116-54-7
Ethene, tetrachloro		100	x	U210		127-18-4
Ethene, chloro-		1	x	U043		75-01-4
Ethion	1000	10				563-12-2
Ethoprophos	1000					13194-48-4
Ethyl acrylate		1000	x	U113		140-88-5
Ethyl chloroformate			x			541-41-3
Ethyl methacrylate		1000		U118		97-63-2
Ethyl methanesulfonate		1		U119		62-50-0
Ethylbenzene		1000	x			100-41-4
Ethylbis(2-chloroethyl)amine	500					538-07-8
Ethylene			x			74-85-1
Ethylene glycol			x			107-21-1
Ethylene oxide	1000	10	x	U115		75-21-8

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Ethylene thiourea		10	x	U116		96-45-7
Ethylenebisdithiocarbamic-acid, salts & esters/		5000		U114		111-54-6
Ethylenediamine	10,000	5000				107-15-3
Ethylenediamine tetra-acetic acid (EDTA)		5000				60-00-4
Ethyleneimine	500	1	x	P054		151-56-4
Ethylenethiocyanate	10,000					542-90-5
Famphur		1000		P097		52-85-7
Fenamiphos	10/10,000					22224-92-6
Fenitrothion	500					122-14-5
Fensulfothion	500					115-90-2
Ferric ammonium citrate		1000				1185-57-5
Ferric ammonium oxalate		1000				2944-67-4
Ferric ammonium oxalate		1000				55488-87-4
Ferric chloride		1000				7705-08-0
Ferric fluoride		100				7783-50-8
Ferric nitrate		1000				10421-48-4
Ferric sulfate		1000				10028-22-5
Ferrous ammonium sulfate		1000				10045-89-3
Ferrous chloride		100				7758-94-3
Ferrous sulfate		1000				7720-78-7
Ferrous sulfate		1000				7782-63-0
Florouracil	500/10,000					51-21-8
Fluenetil	100/10,000					4301-50-2
Fluometuron			x			2164-17-2
Fluorene		5000				86-73-7
Fluorine	500	10		P056		7782-41-4
Fluoroacetamide	100/10,000	100		P057		640-19-7
Fluoroacetic acid	10/10,000					144-49-0
Fluoroacetyl chloride	10					359-06-8
Fonofos	500					944-22-9
Formaldehyde	500	100	x	U122		50-00-0
Formaldehyde cyanohydrin	1000					107-16-4
Formetanate hydrochloride	500/10,000					23422-53-9
Formic acid		5000		U123		64-18-6
Formothion	100					2540-82-1
Formparanate	100/10,000					17702-57-7
Fosthietan	500					21548-32-3
Fuberidazole	100/10,000					3878-19-1
Fulminic acid, mercu-ry(II) salt		10		P065		628-86-4
Fumaric acid		5000				110-17-8
Furan	500	100		U124		110-00-9
Furan, tetrahydro-		1000		U213		109-99-9
Gallium trichloride	500/10,000					13450-90-3
Glycidylaldehyde		10		U126		765-33-4
Guanidine,N-nitroso-N methyl-N'-nitro		10		U163		70-25-7
Heptachlor		1	x	P059		76-44-8
Heptachlor epoxide		1				1024-57-3
Hexachloro-1,3-butadiene		1	x	U128		87-68-3
Hexachlorocyclopentadiene	100	10	x	U130		77-47-4

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Hexachloronaphthalene			x			1335-87-1
Hexachlorophene		100		U132		70-30-4
Hexachloropropene		1000		U234		1888-71-7
Hexaethyl tetraphosphate		100		P062		757-58-4
Hexamethylenediamine, N,N'-dibutyl-	500					4835-11-4
Hexamethylphosphoramide			x			680-31-9
Hydrazine	1000	1	x	U133		302-01-2
Hydrazine sulfate			x			10034-93-2
Hydrochloric acid (Hydrogen chloride (gas only))***	500	5000	x			7647-01-0
Hydrocyanic acid	100	10	x	P063		74-90-8
Hydrogen fluoride	100	100	x	U134		7664-39-3
Hydrogen perioxide (conc > 52%)	1000					7722-84-1
Hydrogen selenide	10					7783-07-5
Hydrogen sulfide	500	100		U135		7783-06-4
Hydroquinone	500/10,000		x			123-31-9
Indeno(1,2,3-cd)pyrene		100		U137		193-39-5
Iron, pentacarbonyl-	100					13463-40-06
iso-Amyl acetate		5000				123-92-2
iso-Butyl acetate		5000				110-19-0
iso-Butylamine		1000				78-81-9
iso-Butyric acid		5000				79-31-2
Isobenzan	100/10,000					297-78-9
Isobutyl alcohol		5000		U140		78-83-1
Isobutyraldehyde			x			78-84-2
Isobutyronitrile	1000					78-82-0
Isocyanic acid,3,4-dichlorophenyl ester	500/10,000					102-36-3
Isodrin	100/10,000	1		P060		465-73-6
Isophorone		5000				78-59-1
Isophorone diisocyanate	100					4098-71-9
Isoprene		100				78-79-5
Isopropanolamine dodecyclbenzene sulfonate		1000				42504-46-1
Isopropyl alcohol (mfg-strong acid processes)			x			67-63-0
Isopropyl chloroformate	1000					108-23-6
Isopropylmethylpyrazolyl dimethylcarbamate	500					119-38-0
Kepone		1		U142		143-50-0
Lactonitrile	1000					78-97-7
Lasiocarpine		10		U143		303-34-4
Lead		10	x			7439-92-1
Lead arsenate		1				10102-48-4
Lead arsenate		1				7645-25-2
Lead arsenate		1				7784-40-9
Lead chloride		10				7758-95-4
Lead fluoborate		10				13814-96-5
Lead fluoride		10				7783-46-2
Lead iodide		10				10101-63-0

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Lead nitrate		10				10099-74-8
Lead phosphate		10		U145		7446-27-7
Lead stearate		10				1072-35-1
Lead stearate		10				52652-59-2
Lead stearate		10				7428-48-0
Lead stearate		10				56189-09-4
Lead subacetate		10		U146		1335-32-6
Lead sulfate		10				15739-80-7
Lead sulfate		10				7446-14-2
Lead sulfide		10				1314-87-0
Lead thiocyanate		10				592-87-0
Leptophos	500/10,000					21609-90-5
Lewisite	10					541-25-3
Lindane	1000/10,000	1	x	U129		58-89-9
Lithium chromate		10				14307-35-8
Lithium hydride	100					7580-67-8
m-Cresol		1000	x	U052		108-39-4
m-Nitrophenol		100				554-84-7
m-Nitrotoluene		1000				99-08-1
Malathion		100				121-75-5
Maleic acid		5000				110-16-7
Maleic, hydrazide		5000		U148		123-33-1
Malononitrile	500/10,000	1000		U149		109-77-3
Maneb			x			12427-38-2
Manganese			x			7439-96-5
Manganese, tricarbonyl methylcyclopentadienyl	100					12108-13-3
Mechlorethamine	10		x			51-75-2
Melphalan		1		U150		148-82-3
Mephosfolan	500					950-10-7
Mercuric acetate	500/10,000					1600-27-7
Mercuric chloride	500/10,000					7487-94-7
Mercuric cyanide		1				592-04-1
Mercuric nitrate		10				10045-94-0
Mercuric oxide	500/10,000					21908-53-2
Mercuric sulfate		10				7783-35-9
Mercuric thiocyanate		10				592-85-8
Mercurous nitrate		10				7782-86-7
Mercurous nitrate		10				10415-75-5
Mercury		1	x	U151		7439-97-6
Methacrolein diacetate	1000					10476-95-6
Methacrylic anhydride	500					760-93-0
Methacryloyl chloride	100					920-46-7
Methacryloyloxyethyl isocyanate	100					30674-80-7
Methacrylonitrile	500	1000		U152		126-98-7
Methamidophos	100/10,000					10265-92-6
Methane, chloro		100	x	U045		74-87-3
Methane, dibromo-		1000	x	U068		74-95-3
Methane, dichloro-		1000	x	U080		75-09-2
Methane, iodide-		100	x	U138		74-88-4
Methane, trichlorofluoro- (CFC-11)		5000		U121		75-69-4

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Methanesulfanyl chloride, trichloro	500	100		P118		594-42-3
Methanesulfonyl fluoride	1000					558-25-8
Methanol		5000	x	U154		67-56-1
Methapyrilene		5000		U155		91-80-5
Methidathion	500/10,000					950-37-8
Methiocarb	500/10,000	10				2032-65-7
Methomyl	500/10,000	100		P066		16752-77-5
Methoxychlor		1	x			72-43-5
Methoxyethylmercuric acetate	500/10,000					151-38-2
Methyl 2-chloroacrylate	500					80-63-7
Methyl acrylate			x			96-33-3
Methyl bromide	1000	1000	x	U029		74-83-9
Methyl chloroformate (Methylchlorocarbonate)	500	1000		U156		79-22-1
Methyl chloroform		1000	x	U226		71-55-6
Methyl hydrazine		10	x	P068		60-34-4
Methyl isobutyl ketone		5000	x	U161		108-10-1
Methyl isocyanate	500	10	x	P064		624-83-9
Methyl isothiocyanate	500					556-61-1
Methyl mercaptan	500	100		U153		74-93-1
Methyl methacrylate		1000	x	U162		80-62-6
Methyl phenkapton	500					3735-23-7
Methyl phosphonic dichloride	100					676-97-1
Methyl tert-butyl ether			x			1634-04-4
Methyl thiocyanate	10,000					556-64-9
Methyl vinyl ketone	10					78-94-4
Methylene-bis-(phenyliso-cyanate)(MBI)			x			101-68-8
Methylmercuric dicy-anamide	500/10,000					502-39-6
Methylthiouracil		10		U164		56-04-2
Methyltrichlorosilane	500					75-79-6
Metolcarb	100/10,000					1129-41-5
Mevinphos	500	10				7786-34-7
Mexacarbate	500/10,000	1000				315-18-4
Michler's ketone			x			90-94-8
Mitomycin C	500/10,000	10		U010		50-07-7
Molybdenum trioxide			x			1313-27-5
Moncrotophos	10/10,000					6923-22-4
(Mono)chloropenta-fluoroethane (CFC 115)			x			76-15-3
Monoethylamine		100				75-04-7
Monomethylamine		100				74-89-5
Muscimol	500/10,000	1000		P007		2763-96-4
Mustard gas	500		x			505-60-2
n-Butyl alcohol			x			71-36-3
N,N'-Dimethylaniline			x			121-69-7
N,N'-Diethylhydrazine		10		U086		1615-80-1
N-Nitroso-N-ethylurea		1	x			759-73-9
N-Nitroso-N-methylurea		1	x			684-93-5

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
N-Nitrosodiphenylamine		100	x			86-30-6
N-Nitrosomethylvinylamine		10	x			4549-40-0
N-Nitrosomorpholine			x			59-89-2
N-Nitrosonornicotine			x			16543-55-8
N-Nitrosopiperidine		10	x	U179		100-75-4
N-Nitrosopyrrolidine		1		U180		930-55-2
Naled		10				300-76-5
Naphthalene		100	x	U165		91-20-3
Naphthenic acid		100				1338-24-5
Nickel		100	x			7440-02-0
Nickel ammonium sulfate		100				15699-18-0
Nickel carbonyl	1	10		P073		13463-39-3
Nickel chloride		100				37211-05-5
Nickel chloride		100				7718-54-9
Nickel cyanide		10		P074		557-19-7
Nickel hydroxide		10				12054-48-7
Nickel nitrate		100				14216-75-2
Nickel sulfate		100				7786-81-4
Nicotine	100	100		P075		54-11-5
Nicotine sulfate	100/10,000					65-30-5
Nitric acid	1000	1000	x			7697-37-2
Nitric oxide	100	10		P076		10102-43-9
Nitrilotriacetic acid			x			139-13-9
Nitrobenzene	10,000	1000	x	U169		98-95-3
Nitrocyclohexane	500					1122-60-7
Nitrofen			x			1836-75-5
Nitrogen dioxide	100	10		P078		10102-44-0
Nitrogen dioxide		10		P078		10544-72-6
Nitroglycerine		10	x	P081		55-63-0
Nitrophenol (mixed)		100				25154-55-6
Nitrosodimethylamine	1000	10	x	P082		62-75-9
Nitrotoluene		1000				1321-12-6
Norbormide	100/10,000					991-42-4
O,O-Diethyl S-methyl dithiophosphate		5000		U087		3288-58-2
o-Anisidine hydrochloride			x			134-29-2
o-Anisidine			x			90-04-0
o-Dinitrobenzene		100	x			528-29-0
o-Nitrophenol		100	x			88-75-5
o-Nitrotoluene		1000				88-72-2
o-Toluidine		100	x	U328		95-53-4
Octachloronaphthalene			x			2234-13-1
Osmium tetroxide		1000	x	P087		20816-12-0
Ouabain	100/10,000					630-60-4
Oxamyl	100/10,000					23135-22-0
Oxetane,3,3-bis(chloromethyl)-	500					78-71-7
Oxydisulfoton	500					2497-07-6
Ozone	100					10028-15-6
p-Anisidine			x			104-94-9
p-Benzoquinone		10	x	U197		106-51-4
p-Cresidine			x			120-71-8
p-Cresol		1000	x	U052		106-44-5

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
p-Dinitrobenzene		100	x			100-25-4
p-Nitrophenol		100	x	U170		100-02-7
p-Nitrosodiphenylamine			x			156-10-5
p-Nitrotoluene		1000				99-99-0
p-Phenylenediamine			x			106-50-3
Paraformaldehyde		1000				30525-89-4
Paraldehyde		1000				123-63-7
Paraquat	10/10,000					1910-42-5
Paraquat methosulfate	10/10,000					2074-50-2
Parathion	100	10	x	P089		56-38-2
Parathion, methyl	100/10,000	100		P071		298-00-0
Paris green (Cuprie acetoarsenite)	500/10,000	1				12002-03-8
Pentaborane	500					19624-22-7
Pentachloroethane		10		U184		76-01-7
Pentachlorophenol		10	x	U242		87-86-5
Pentadecyclamine	100/10,000					2570-26-5
Peracetic acid	500		x			79-121-0
Phenanthrene		5000				85-01-8
Phenol	500/10,000	1000	x	U188		108-95-2
Phenol,2,2'-thiobis (4-chloro-6-methyl	100/10,000					4418-66-0
Phenol,2,3,4,6-tetrachloro		10		U212		58-90-2
Phenol,2,4,5-trichloro		10	x	U230		95-95-4
Phenol,2,4,6-trichloro		10	x	U231		88-06-2
Phenol,3-(1-methylethyl), methylcarbamate	500/10,000					64-00-6
Phenoxarsine,10,10'-oxydi-	500/10,000					58-36-6
Phenyl dichloroarsine	500	1		P036		696-28-6
Phenylhydrazine hydrochloride	1000/10,000					59-88-1
Phenylmercury acetate	500/10,000	100		P092		62-38-4
Phenylsilatrane	100/10,000					2097-19-0
Phenylthiourea	100/10,000	100		P093		103-85-5
Phorate	10	10		P094		298-02-2
Phosacetim	100/10,000					4104-14-7
Phosfolan	100/10,000					947-02-4
Phosgene	10	10	x	P095		75-44-5
Phosmet	10/10,000					732-11-6
Phosphamidon	100					13171-21-6
Phosphine	500	100		P096		7803-51-2
Phosphonothioic acid methyl-O-(4-nitrophenyl)O-phenyl ester	500					2665-30-7
Phosphonothioic acid, methyl-O-ethyl-O-(4-(methylthio)phenyk Ester	500					2703-13-1
Phosphonothioic acid, methyl-,s-(2-(bis(1-methylethyl)amino Ethyl o-Ethyl Ester	100					50782-69-9
Phosphoric acid		5000	x			7664-38-2
Phosphoric acid, dimethyl	500					3254-63-5

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
4-(methylthio)phenyl ester						
Phosphorothioc acid O,O-diethyl, O-pyrazinyl ester	500	100		P040		297-97-2
Phosphorothioic acid,O,O-dimethyl-S-(2-methylthio)ethyl est	500					2587-90-8
Phosphorus	100	1	x			7723-14-0
Phosphorus oxychloride	500	1000				10025-87-3
Phosphorus pentachloride	500					10026-13-8
Phosphorus pentasulfide		100		U189		1314-80-3
Phosphorus pentoxide	10					1314-56-3
Phosphorus trichloride	1000	1000				7719-12-2
Physostigmine	100/10,000					57-47-6
Physostigmine, salicylate (1:1)	100/10,000					57-64-7
Picric acid			x			88-89-1
Picrotoxin	500/10,000					124-87-8
Piperidine	1000					110-89-4
Pirimifos-ethyl	1000					23505-41-1
Polychlorinated biphenyls (PCBs)		1	x			1336-36-3
Potassium arsenate		1				7784-41-0
Potassium arsenite	500/10,000	1				10124-50-2
Potassium bichromate		10				7778-50-9
Potassium chromate		10				7789 00-6
Potassium cyanide	100	10		P098		151-50-8
Potassium hydroxide		1000				1310-58-3
Potassium permanganate		100				7722-64-7
Potassium silver cyanide	500	1		P099		506-61-6
Promecarb	500/10,000					2631-37-0
Propargite		10				2312-35-8
Propargyl alcohol		1000		P102		107-19-7
Propargyl bromide	10					106-96-7
Propiolactone,beta-	500		x			57-57-8
Propionaldehyde			x			123-38-6
Propionic acid		5000				79-09-4
Propionic acid,2-(2,4,5-trichlorophenoxy)-		100		U233		93-72-1
Propionic anhydride		5000				123-62-6
Propiophenone,4'-amino-	100/10,000					70-69-9
Propenenitrile	500	10		P101		107-12-0
Propenenitrile,3-chloro-	1000	1000		P027		542-76-7
Propoxur			x			114-26-1
Propyl chloroformate	500					109-61-5
Propylene (Propene)			x			115-07-1
Propylene oxide	10,000	100	x			75-56-9
Propyleneimine	10,000	1	x	P067		75-55-8
Prothoate	100/10,000					2275-18-5
Pyrene	1000/10,000	5000				129-00-0
Pyrethrins		1				121-21-1
Pyrethrins		1				121-29-9
Pyrethrins		1				8003-34-7

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Pyridine		1000	x	U196		110-86-1
Pyridine,2-methyl-5-vinyl-	500					140-76-1
Pyridine,4-amino-	500/10,000	1000		P008		504-24-5
Pyridine,4-nitro-1-oxide	500/10,000					1124-33-0
Pyriminil	100/10,000					53558-25-1
Quinoline		5000	x			91-22-5
Reserpine		5000		U200		50-55-5
Salcomine	500/10,000					14167-18-1
Sarin	10					107-44-8
sec-Amyl acetate		5000				626-38-0
sec-Butyl acetate		5000				105-46-4
sec-Butyl alcohol			x			78-92-2
sec-Butylamine		1000				13952-84-6
sec-Butylamine		1000				513-49-5
Selenium		100	x			7782-49-2
Selenium dioxide		10		U204		7446-08-4
Selenium disulfide		10		U205		7448-56-4
Selenium oxychloride	500					7791-23-3
Selenious acid	1000/10,000	10		U204		7783-00-8
Selenouree		1000		P103		630-10-4
Semicarbazide hydro-chloride	1000/10,000					563-41-7
Silane,(4-aminobutyl) diethoxymethyl-	1000					3037-72-7
Silver		1000	x			7440-22-4
Silver cyanide		1		P104		506-64-9
Silver nitrate		1				7761-88-8
Sodium		10				7440-23-5
Sodium arsenate	1000/10,000	1				7631-89-2
Sodium arsenite	500/10,000	1				7784-46-5
Sodium azide (Na(N3))	500	1000		P105		26628-22-8
Sodium bichromate		10				10588-01-9
Sodium bifluoride		100				1333-83-1
Sodium bisulfite		5000				7631-90-5
Sodium cacodylate	100/10,000					124-65-2
Sodium chromate		10				7775-11-3
Sodium cyanide (Na(CN))	100	10		P106		143-33-9
Sodium dodecylbenzene sulfonate		1000				25155-30-0
Sodium fluoride		1000				7681-49-4
Sodium fluoroacetate	10/10,000	10		P058		62-74-8
Sodium hydrosulfide		5000				16721-80-5
Sodium hydroxide		1000				1310-73-2
Sodium hypochlorite		100				10022-70-5
Sodium hypochlorite		100				7681-52-9
Sodium methylate		1000				124-41-4
Sodium nitrite		100				7632-00-0
Sodium phosphate,dibasic		5000				10039-32-4
Sodium phosphate,dibasic		5000				10140-65-5
Sodium phosphate,dibasic		5000				7558-79-4
Sodium phosphate,tribasic		5000				10101-89-0
Sodium phosphate,tribasic		5000				10124-56-8
Sodium phosphate,tribasic		5000				10361-89-4

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Sodium phosphate,tribasic		5000				7601-54-9
Sodium phosphate,tribasic		5000				7758-29-4
Sodium phosphate,tribasic		5000				7785-84-4
Sodium selenate	100/10,000					13410-01-0Sodium
Sodium selenite	100/10,000	100				10102-18-8
Sodium selenite		100				7782-82-3
Sodium tellurite	500/10,000					10102-20-2
Strannane,acetoxy-triphenyl-	500/10,000					900-95-8
Strontium chromate		10				7789-06-2
Strychnine	100/10,000	10		P108		57-24-9
Strychnine, sulfate	100/10,000					60-41-3
Styrene		1000	x			100-42-5
Styrene oxide			x			96-09-3
Sulfotep	500	100		P109		3689-24-5
Sulfoxide,3-chloropropyl octyl	500					3569-57-1
Sulfur dioxide	500					7446-09-5
Sulfur monochloride		1000				12771-08-3
Sulfur tetrafluoride	100					7783-60-0
Sulfur trioxide	100					7446-11-9
Sulfuric acid	1000	1000	x			7664-93-9
Sulfuric acid		1000				8014-95-7
Tabun	10					77-81-6
Tellurium	500/10,000					13494-80-9
Tellurium hexafluoride	100					7783-80-4
Tetraethyldithiopyr phosphate	100	10		P111		107-49-3
Terbufos	100					13071-79-9
tert-Amyl acetate		5000				625-16-1
tert-Butyl acetate		5000				540-88-5
tert-Butyl alcohol			x			75-65-0
tert-Butylamine		1000				75-64-9
Tetrachlorvinphos			x			961-11-5
Tetraethyllead	100	10		P110		78-00-2
Tetraethyltin	100					597-64-8
Tetramethyl Lead	100					75-74-1
Tetranitromethane	500	10		P112		509-14-8
Thallic oxide		100		P113		1314-32-5
Thallium		1000	x			7440-28-0
Thallium(1) carbonate	100/10,000	100		U215		6533-73-9
Thallium (I)sulfate	100/10,000	100		P115		10031-59-1
Thallium(I)nitrate		100		U217		10102-45-1
Thallium(I)selenide		1000		P114		12039-52-0
Thallous chloride	100/10,000	100		U216		7791-73-9
Thallous malonate	100/10,000					2757-18-8
Thallous sulfate	100/10,000	100		P115		7446-18-6
Thiocarbazide	1000/10,000					2231-57-4
Thiofanox	100/10,000	100		P045		39196-18-4
Thiram		10		U244		137-26-8
Thiophenol	500	100		P014		108-98-5
Thiosemicarbazide	100/10,000	100		P116		79-19-6
Thiourea		10	x			62-56-6

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Thiourea,(2-chlorophenyl)-	100/10,000	100		P026		5344-82-1
Thiourea,(2-methylphenyl)-	500/10,000					614-78-8
Thorium dioxide			x			1314-20-1
Titanium dioxide			x			13463-67-7
Titanium tetrachloride	100		x			7550-45-0
Toluene2,4-diisocyanate	500	100	x			584-84-9
Toluene2,6-diisocyanate	100	100	x			91-08-7
Toxaphene(Campheclor)		1	x	P123		8001-35-2
Trans 1,1-dichlorobutene	500					110-57-6
Triamiphos	500/10,000					1031-47-6
Triaziquone			x			68-76-8
Triazofos	500					24017-47-8
Trichloroacetyl chloride	500					76-02-8
Trichloro(chloromethyl) silane	100					1558-25-4
Trichloro(dichlorophenyl) silane	500					27137-85-5
Trichloroethylene		100	x	U228		79-01-6
Trichloroethylsilane	500					115-21-9
Trichlorofon		100	x			52-68-6
Trichloronate	500					327-98-0
Trichlorophenol		10				25167-82-2
Trichlorophenylsilane	500					98-13-5
Triethanolamine dodecylbenzene sulfonate		1000				27323-41-7
Triethoxysilane	500					998-30-1
Triethylamine		5000				121-44-8
Trifluralin			x			1582-09-8
Trimethylamine		100				75-50-3
Trimethylchlorosilane	1000					75-77-4
Trimethylolpropane phosphite	100/10,000					824-11-3
Trimethyltin chloride	500/10,000					1066-45-1
Triphenyltin chloride	500/10,000					639-58-7
Tris(2-chloroethyl)amine	100					555-77-1
Trypan blue		10		U236		72-57-1
Uracil,5-[bis(2-chloroethyl)amino]-		10		U237		66-75-1
Uranyl acetate		100				541-09-3
Uranyl nitrate		100				10102-06-4
Uranyl nitrate		100				36478-76-9
Valinomycin	1000/10,000					2001-95-8
Vanadium(fume or dust)			x			7440-62-2
Vanadium pentoxide	100/10,000	1000		P120		1314-62-1
Vanadyl sulfate		1000				27774-13-6
Vinyl acetater	1000	5000	x			108-05-4
Vinyl bromide			x			593-60-2
Warfarin	500/10,000	100		P001		81-81-2
Warfarin sodium	100/10,000					129-06-6
Xylenol		1000				1300-71-6
Xylylene dichloride	100/10,000					28347-13-9
Zinc		1000	x			7440-66-6

Appendix 7-1 (continued)

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Haz. Sub. RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Haz. Wastes which are Haz. Mat.	RCRA	CAS No.
Zinc acetate		1000				557-34-6
Zinc ammonium chloride		1000				52628-25-8
Zinc ammonium chloride		1000				14639-97-5
Zinc ammonium chloride		1000				14639-98-6
Zinc borate		1000				1332-07-6
Zinc bromide		1000				7699-45-8
Zinc carbonate		1000				3486-35-9
Zinc chloride		1000				7646-85-7
Zinc cyanide		10		P121		557-21-1
Zinc, dichloro(4,4-dimethyl-5(((methylamino)carbonyl)oxy)imino)Pentanenitrile)-,(T-4)	100/10,000					58270-08-9
Zinc fluoride		1000				7783-49-5
Zinc formate		1000				557-41-5
Zinc hydrosulfite		1000				7779-86-4
Zinc nitrate		1000				7779-88-6
Zinc phenolsulfonate		5000				127-82-2
Zinc phosphide	500	100		P122		1314-84-7
Zinc silicofluoride		5000				16871-71-9
Zinc sulfate		1000				7733-02-0
Zineb			x			12122-67-7
Zirconium nitrate		5000				13746-89-9
Zirconium potassium fluoride		1000				16923-95-8
Zirconium sulfate		5000				14644-61-2
Zirconium tetrachloride		5000				10026-11-6

INSTALLATION:	COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (5) Fire Department (13) Engineering, Plans, Training, Mobilization, and Security (DPTMSEC) (21) Public Affairs Office (PAO)

Section 8

TOXIC SUBSTANCES CONTROL ACT (TSCA)

SECTION 8

TOXIC SUBSTANCES CONTROL ACT (TSCA)

A. Applicability of this Protocol

This protocol applies to all Army installations. Currently, this section contains protocols for polychlorinated biphenyls (PCBs). PCBs are regulated on the Federal level by the U.S. Environmental Protection Agency (USEPA), though some states have also promulgated regulations. Specific state regulations are not included in this protocol.

The TSCA protocol is used to determine the compliance status of the management activities associated with PCBs and in-service and out-of-service PCB items.

B. Federal Legislation

- *The Toxic Substances Control Act (TSCA).* This Act, as last amended in 1986, 15 U.S. Code (USC) 2601-2671, is the Federal legislation which deals with the control of toxic substances. The Act consists of three subchapters, one of which regulates the control of toxic substances, another governs asbestos hazard emergency response, and another subchapter regulates indoor radon abatement. The policy of the United States developed in *TSCA* on chemical substances is as follows:
    1. Adequate data should be developed with respect to the effect of chemical substances and mixtures on health and the environment and that the development of such data should be the responsibility of those who manufacture and those who process such chemical substances and mixtures
    2. Adequate authority should exist to regulate chemical substances and mixtures which present an unreasonable risk of injury to health or the environment, and to take action regarding chemical substances and mixtures
    3. Authority over chemical substances and mixtures should be exercised in such a manner as not to impede unduly or create unnecessary economic barriers to technological innovation while fulfilling the primary purpose of this Act to assure that such innovation and commerce in such chemical substances and mixtures do not present an unreasonable risk of injury to health or the environment (15 USC 2601(b)).

Upon request by the USEPA, each Federal department and agency is authorized to:

1. make its services, personnel, and facilities available (with or without reimbursement) to the USEPA to assist the USEPA in the administration of this Act
2. furnish to the USEPA such information, data, estimates, and statistics, and allow the USEPA access to all information in its possession as the USEPA may reasonably determine to be necessary for the administration of this Act (15 USC 2625(a)).

- Executive Order (EO) 12088, *Federal Compliance with Pollution Standards*, of 13 October 1978 requires Federally owned and operated facilities to comply with applicable Federal, state, and local environmental requirements. It makes the head of each executive agency responsible for seeing to it that the agencies, facilities, programs, and activities it funds meet applicable Federal, state, and local environmental requirements or correct situations that are not in compliance with such requirements. Additionally, the EO requires each agency to ensure that sufficient funds for environmental compliance are included in the agency budget.

C. State/Local Requirements

Some states have agreements with the USEPA to administer the Federal regulations. According to the general structure of Federal regulatory programs, any state regulations must adopt the Federal regulations as a minimum set of requirements. In some cases, state regulations have been developed to regulate PCBs more stringently than the Federal program. State PCB regulations may provide additional regulatory requirements beyond the Federal program to address a specific concern or activity sensitive in that state. State regulations may supersede the Federal regulations in areas including the following:

- PCBs may be regulated as a hazardous waste
- PCBs may be regulated at a lower concentration. For example, regulated PCBs in one state are defined to be materials and fluids that contain PCBs at a concentration greater than 7 parts per million (ppm)
- Shipments of PCBs may require manifest documents
- Analyses may be required to quantify the PCB concentration in all PCB Items

- Additional inspections of select PCB Items and specific disposal requirements for PCBs and PCB Items may be required

- Generators of PCBs and PCB Items may be required to obtain disposal permits.

D. Department of Defense (DOD) Regulations

- None.

E. U.S. Army Regulations (ARs)

- AR 200-1, *Environmental Protection and Enhancement*, Chapter 5, para 6, *Polychlorinated Biphenyls (PCBs)*, mandates Army compliance with the TSCA and other applicable Federal statutes. It also outlines a recordkeeping system for PCBs and PCB-related Items.

F. Key Compliance Requirements

- The Federal PCB regulations allow PCB Equipment (Transformers and Capacitors) that is in service to remain in service. While in service, it must be labeled, and inspected, and any leaks detected must be corrected. Once taken out of service, PCB Equipment can be stored for disposal for 1 year (yr) in a specially designed storage area. PCB Fluids must be disposed of by incineration in a specially licensed incinerator, and PCB Equipment (without the fluid) must be disposed of in a specially licensed landfill.

G. Responsibility for Compliance

- The Directorate Engineering and Housing (DEH), through the Exterior Electrical Shop, or the Environmental Coordinator (EC) is responsible for identifying, inspecting, marking (labeling), and properly servicing PCB Electrical Equipment (Transformers and Capacitors).

- The EC is responsible for ensuring that out-of-service items are located in a licensed and 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 disposal contracts.

H. Key Compliance Definitions

These definitions were obtained from Army, DOD, and compliance regulations cited previously.

- *Capacitor* - a device that accumulates and holds a charge of electricity and consists of conducting surfaces separated by a dielectric. Types of capacitors are as follows (40 CFR 761.3):

  - Small Capacitor - a capacitor that contains less than 1.36 kilograms (kg) or 3 pounds (lb) of dielectric fluid.
  - Large, High-voltage Capacitor - a capacitor that contains 1.36 kg (3 lb) or more of dielectric fluid and operates at 2000 volts (V) alternating current (ac) or direct current (dc) or higher.
  - Large, Low-voltage Capacitor - a capacitor that contains 1.36 kg (3 lb) or more of dielectric fluid and operates below 2000 V (ac or dc).

- *Chemical Waste Landfill* - a landfill where protection against risk of injury to health or the environment from migration of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating, engineering, and operating the landfill as required (40 CFR 761.3).

- *Commercial Storer of PCB Waste* - the owner or operator of each facility subject to the PCB storage facility standards of 40 CFR 761.65, who engages in storage activities involving PCB Waste generated by others or PCB Waste that was removed while servicing the equipment owned by others and brokered for disposal. The receipt of a fee or any other form of compensation for services is not necessary to qualify as a commercial storer of PCB Waste. It is sufficient under this definition that the facility stores PCB Waste generated by others or the facility removed the PCB Waste while servicing equipment owned by others. If a facility's storage of PCB Waste at no time exceeds 500 gallons (gal) of PCBs, the owner or operator is not required to seek approval as a commercial storer of PCB Waste (40 CFR 761.3).

- *Disposal* - to intentionally or accidentally discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items (40 CFR 761.3).

- *Double Wash/Rinse* - a minimum requirement to cleanse solid surfaces (both impervious and nonimpervious) two times with an appropriate solvent or other material in which PCBs are at least 5 percent soluble (by weight) (40 CFR 761.123).

- *Emergency Situation* - a condition that exists, for continuing use of a PCB Transformer, when (40 CFR 761.3):
  - neither a non-PCB Transformer nor a non-PCB Contaminated Transformer is currently in storage for reuse or readily available within 24 hours (h) for installation
  - immediate replacement is necessary to continue service for power users.

- *EPA Identification Number* - the 12-digit number assigned to a facility by USEPA upon notification of PCB Waste activity (40 CFR 761.3).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *High Concentration PCBs* - PCBs that contain 500 ppm or greater PCBs, or those materials that the USEPA requires to be assumed to contain 500 ppm or greater PCBs in the absence of testing (40 CFR 761.123).

- *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 meters (m) of a nonindustrial, nonsubstation building (40 CFR 761.3).

- *Industrial Building* - a building directly used in manufacturing or technically productive enterprises (40 CFR 761.3).

- *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 (40 CFR 761.3).

- *Low Concentration PCBs* - PCBs that are tested and found to contain less than 500 ppm PCBs, or those PCB-containing materials that the USEPA requires to be assumed to be at concentrations below 500 ppm (i.e., untested mineral oil dielectric fluid) (40 CFR 761.123).

- *Mark* - the descriptive name, instructions, cautions, or other information applied to PCBs, PCB Items, or other objects subject to these regulations (40 CFR 761.3).

- *Marked* - the marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixating an adhesive label, or using any other method that meets the requirements of these regulations (40 CFR 761.3).

- *Mineral Oil PCB Transformers* - any transformer originally designed to contain mineral oil as the dielectric fluid and that has been tested and found to contain 500 ppm or greater PCBs (40 CFR 761.3).

- *Non-PCB Transformers* - any transformer that contains less than 50 ppm PCBs; however, any transformer that has been converted from a PCB Transformer or a PCB-Contaminated Transformer cannot be classified as a non-PCB Transformer until reclassification has occurred in accordance with the requirements of 40 CFR 761.30(a)(2)(v) (40 CFR 761.3).

- *PCB or PCBs* - any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances that contains such a substance (40 CFR 761.3).

- *PCB Article* - any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. This includes capacitors, transformers, electric motors, pumps, pipes, etc. (40 CFR 761.3).

- *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 (40 CFR 761.3).

- *PCB Container* - any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface has been in direct contact with PCBs (40 CFR 761.3).

- *PCB-Contaminated Electrical Equipment* - any electrical equipment, including, but not limited to, transformers, capacitors, circuit breakers, reclosers, voltage regulators, switches, electromagnets, and cable, that contains 50 ppm or greater PCBs, but less than 500 ppm PCBs (40 CFR 761.3).

- *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 (40 CFR 761.3).

- *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 PCBs (40 CFR 761.3).

- *PCB Transformer* - any transformer that contains 500 ppm PCBs or greater (40 CFR 761.3).

- *PCB Waste* - those PCBs and PCB Items that are subject to the disposal requirements of Subpart D of 40 CFR 761 (40 CFR 761.3).

- *Posing an Exposure Risk to Food or Feed* - being in any location where human food or animal feed products could be exposed to PCBs released from a PCB Item (40 CFR 761.3).

- *Retrofill* - to remove PCBs or PCB-contaminated dielectric fluid and replace it with either PCBs, PCB-contaminated, or non-PCB dielectric fluid (40 CFR 761.3).

- *Rupture of a PCB Transformer* - a violent or nonviolent break in the integrity of a PCB Transformer caused by an overtemperature and/or overpressure condition that results in the release of PCBs (40 CFR 761.3).

TOXIC SUBSTANCES CONTROL ACT (TSCA)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
PCBs:		
All installations with PCBs	8-1 through 8-7	(1)(2)(4)(23)(25)
PCB Transformers documentation	8-8 through 8-10	(1)(2)(9)(23)(25)
PCB Transformers	8-11 through 8-18	(1)(2)(5)(9)(23)(25)
PCB spills/leaks	8-19 through 8-21	(1)(2)(23)
PCB Items	8-22 through 8-25	(1)(2)(9)(23)(25)
PCBs in Research	8-26	(1)(2)
PCB Storage	8-27 through 8-31	(1)(2)(9)(23)(25)
Transporting PCBs	8-32 and 8-33	(1)(2)(9)(23)(25)
Disposing of PCBs	8-34 through 8-44	(1)(2)(9)(23)(25)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(4) Safety and Health Officer
(5) Fire Department
(9) Chief of Operations and Maintenance (O&M)
(23) Defense and Reutilization Marketing Office (DRMO)
(25) Utilities Division (Exterior Electric Shop)

TOXIC SUBSTANCES CONTROL ACT (TSCA)

Plans and Maps to Review

- Spill plan

Records to Review

- Inspection, storage, maintenance, and disposal records for PCBs/PCB Items
- PCB Equipment inventory and sampling results
- Correspondence with regulatory agencies concerning PCB noncompliance situations
- Annual reports

Physical Features to Examine

- PCB storage areas
- Equipment, fluids, and other items used or stored at the facility containing PCBs

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Safety and Health Officer
- Fire Department
- Chief of Operations and Maintenance (O&M)
- Defense and Reutilization Marketing Office (DRMO)
- Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
8-1. Determine actions or changes since previous review of PCB management (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)
...	...
8-2. The installation should maintain current and effective regulations on PCB management (GMP).	Determine if copies of the following, which are applicable, are maintained on the installations: (1)(2) - 40 CFR 761, *PCB Regulations.* - 40 CFR 268, *Land Disposal Restriction.* - 40 CFR 302, *Designation, Reportable Quantities, and Notification.* - 40 CFR 372, *Toxic Chemical Release Reporting.* - EO 12088, *Federal Compliance with Pollution Standards.* - AR 200-1, *Environmental Protection and Enhancement.* - Spill Prevention Control and Countermeasure (SPCC) Plan. - Installation Spill Cleanup Plan (ISCP). - Copies of any state regulations on PCB use and disposal if applicable.
...	...
8-3. Installations are required to comply with applicable state and local requirements (EO 12088, Section 1-1).	Verify that the installation is complying with state and local requirements. (1) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2) (NOTE: Issues which are typically regulated by state and local agencies include: - definitions of PCB-Contaminated - storage, labeling, and disposal requirements.)
...	...
8-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2) Verify that the existing system addresses the issues associated with *TSCA* by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-5. Installations are required to comply with regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning PCBs have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...
8-6. Certain equipment that contains PCBs must be marked with an M_L marking (40 CFR 761.40 and 761.45).	Inspect equipment containing PCBs and verify that they are marked with an M_L marking easily read by any person inspecting or servicing the equipment (See Appendix 8-1 for a sample of the marking): (1)(2)(25) - PCB Containers with PCBs in concentrations of 50 to 500 ppm - PCB Transformers (500 ppm or greater) - PCB Large High Voltage Capacitors - equipment containing a PCB Transformer (500 ppm or greater) or a PCB Large High Voltage Capacitor at the time of removal from service - PCB Large Low Voltage Capacitors at the time of removal from service - electric motors using PCB coolants with a concentration of 50 to 500 ppm - hydraulic systems using PCB hydraulic fluid with concentrations of 50 to 500 ppm - heat transfer systems (other than PCB Transformers) using PCB concentrations of 50 to 500 ppm - PCB Article Containers containing any of the above - each storage area used to store PCBs and PCB Items for disposal - transport vehicles loaded with PCB Containers that contain more than 45 kg (99.4 lb) of PCBs in the liquid phase with PCB concentrations of 50 to 500 ppm or one or more PCB Transformers with PCB concentrations of greater than 500 ppm are marked on each end and side - vault doors, machinery room doors, fences, hallways, or means of access, other than a manhole or grate cover, to a PCB Transformer (500 ppm or greater).

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-6. (continued)	Verify that if one or more PCB Large High Voltage Capacitors is installed in a protected location such as a pole, structure, or behind a fence, the pole, structure, or fence is marked and a record or procedure identifying the PCB Capacitor is maintained by the installation. (1)(2)(25) (NOTE: Marking Format Large PCB Mark (M_L) letters and striping, on a white or yellow background, sufficiently durable to equal or exceed the life of the PCB Article. The size shall be 15.25 cm (6 in.) on each side. If the article is too small to accommodate this size, a smaller label (M_S) may be used.) (NOTE: Marking of PCB Contaminated electrical equipment (50 to 500 ppm) is not required.) (NOTE: See Appendix 8-2 for dielectric fluid trend names and manufacturers.)
...	...
8-7. Generators, transporters, and disposers of PCB waste are required to have an USEPA ID No. (40 CFR 761.202 through 761.205).	Determine if the facility is a generator, transporter, or disposer of PCB waste. (1)(2)(4) Verify that facilities which generate PCB waste have an USEPA ID No. before processing, storing, dispensing, transporting, or offering for transport PCB waste. (1)(2)(23) Verify that facilities which transport or dispose of PCB waste have a USEPA ID No.. (1)(2) Verify that Form 7710-53, *Notification of PCB Waste Activity*, was filed with the USEPA by 4 April 1990 and a USEPA ID No. was obtained if an installation must file. (1)(2)(4) (NOTE: Some facilities are exempt from the notification requirement and do not have a specified PCB storage area as regulated by 40 CFR 761.65 and just temporarily store before they transport for disposal.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

RECORDS
 	
8-8. A written annual document log must be prepared by 1 July of each calendar year, covering the previous year for all installations that use or store at any time at least 45 kg (99.4 lb) of PCBs contained in PCB Containers, or one or more PCB Transformer (500 ppm or greater), or 50 or more PCB Large High, or Low Voltage Capacitors (40 CFR 761.180(a)).
	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 and PCB items in the listed quantities. (1)(2)
	
	Verify that the written annual document log contains the following: (1)(2)
	
	- 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 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 High-, and Low-Voltage Capacitors, 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.
	
	Verify that the annual document log contains the following for each manifest, for unmanifested waste, and for any PCBs or PCB Items received from or shipped from another facility owned or operated by the generator: (1)(2)(25)
	
	- 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
	  - in each Article - PCB Transformers or Capacitors
	  - total in each container - PCB Containers
	  - total weight of contents and of the PCB Article (in kg) in each PCB Article Container
	- serial number or other unique identification number (except for bulk wastes)
	- description of the contents for PCB Containers and Article Containers.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-8. (continued)	Verify that the annual record includes the following information: (1)(2)(23) - all signed manifests generated or received at the facility during the calendar year - all certificates of disposal that have been generated or received during the calendar year.
...	...
8-9. Owners and operators of PCB chemical waste landfills shall keep records on water analysis and operational records, including burial coordinates, for 20 yr after disposal has ceased (40 CFR 761.180(d)).	Verify that proper records are being kept for the required 20 yr. (1)(2)
...	...
8-10. Storage and disposal facilities for PCBs shall maintain specific records for 3 yr (40 CFR 761.180(f)).	Verify that installations which store or dispose of PCBs collect and maintain the following records for 3 yr: (1)(2)(9) - all documents and correspondence and data that have been provided by any state or local government - all documents, correspondence, and data provided to the state or local governments by the installation - any applications and related correspondence concerning wastewater discharge permits, solid waste permits, building permits, or other permits and authorizations.
...	...
TRANSFORMERS	
8-11. PCB Transformers with PCBs of 500 ppm or greater that are in use or in storage for reuse shall not pose an exposure risk to food and feed (40 CFR 761.30(a)(1)(i)).	Determine if there are any PCB Transformers on the installation, in use or in storage for reuse, that pose an exposure risk to food and feed by reviewing the PCB Inventory. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-12. PCB Transformers with PCBs at concentrations of 500 ppm or greater are subject to certain registration requirements (40 CFR 761.30 (a)(1)(vi)).	Verify that all PCB Transformers with PCB concentrations of 500 ppm or greater, including those in storage for reuse, are registered with post fire department, or the fire department with jurisdiction, with the following information: (1)(2)(5)(9) - 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).
...	...
8-13. Combustible materials, including but not limited to paints, solvents, plastics, paper, and sawn wood, must not be stored near a PCB Transformer with PCBs at concentrations of 500 ppm or greater (40 CFR 761.30(a)(1)(viii)).	Verify that all combustible materials have been removed from the area within a PCB Transformer enclosure (i.e., vault or partitioned area) and the area within 5 m (16 ft) of a PCB Transformer or PCB Transformer enclosure. (1)(2)(5)
...	...
8-14. PCB Transformers with PCBs at concentrations of 500 ppm or greater in use in or near commercial buildings are subject to certain requirements (40 CFR 761.30 (a)(1)(ii) through 761.30 (a)(1)(v) and 761.30 (a)(1)(vii)).	Determine if there are any transformers located in or near commercial buildings. (1)(2)(25) Verify procedure/policy exists prohibiting installation of PCB Transformers which have been placed into storage for reuse or which have been removed from another location. (1)(2)(9) Verify that there are no network PCB Transformers with higher secondary voltages (equal to or greater than 430 V, including 480/277 V systems) in or near commercial buildings. (1)(2) Determine where any of the following PCB Transformers are in use in or near commercial buildings or located in sidewalk vaults and if plan exists to equip such PCB Transformers with electrical protection to avoid transformer failure that would result in release of PCBs: (1)(2) - Radial PCB Transformers and lower secondary voltage network PCB Transformers (voltage is greater than 480 V) - Radial PCB Transformers with higher secondary voltages (greater than or equal to 480 V including 480/277 V system). Determine if lower secondary voltage network PCB Transformers which have not been electrically protected are registered with the USEPA regional administrator and plans are being made to remove them from service by 1 October 1993. (1)(2)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-14. (continued)	Verify that all higher secondary voltage radial PCB Transformers, in use in or near commercial buildings, and lower secondary voltage network PCB Transformers not located in sidewalk vaults in or near commercial buildings are equipped with: (1)(2) - electrical protection such as current-limiting fuses to avoid transformer ruptures - disconnect equipment to insure complete nonenergization of the transformer in case of a sensed abnormal condition. Verify that all lower secondary voltage radial PCB Transformers, in use in or near commercial buildings are equipped with electrical protection such as current limiting fuses or equivalent technology and provide for the complete deenergization of the transformer or complete deenergization of the faulted phase of the transformer within several hundredths of a second. (1)(2) Verify that if PCB Transformers are in use in or near commercial buildings, they have been registered with the DEH and the following information provided: (1)(9) - specific location of PCB Transformer(s) - principal constituent of dielectric fluid (i.e., PCBs, mineral oil, silicone oil, etc.) - type of transformer.
...	...
8-15. PCB Transformers are required to be properly serviced (40 CFR 761.30(a)(2)).	Interview persons performing transformer servicing and verify that servicing activities are properly conducted as follows: (1)(2)(9)(25) - transformers classified as PCB-contaminated electrical equipment (50 to 500 ppm) are only serviced with dielectric fluid containing less than 500 ppm PCB - the transformer coil is not removed during servicing of PCB Transformers with PCB concentrations of 500 ppm or greater - PCBs removed during servicing are captured and are either reused as dielectric fluid or disposed of properly - the PCBs from a PCB Transformer (500 ppm or greater) are not mixed with or added to dielectric fluid from PCB-contaminated electrical equipment (50 to 500 ppm) - dielectric fluids containing less than 500 ppm PCB that are mixed with fluids containing 500 ppm or greater are not used as dielectric fluid in any transformers classified as PCB-contaminated electrical equipment (50 to 500 ppm). (NOTE: PCB Transformers (500 ppm or greater) may be serviced with dielectric fluid at any concentration.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-16. Inspections must be performed once every 3 months (mo) for all in-service PCB Transformers (500 ppm or greater PCB) (40 CFR 761.30(a)(1)(ix), 761.20(a)(1)(xii), 761.30 (a)(1)(xiii), and 761.30 (a)(1)(xiv)).	Verify that applicable transformers are inspected at least once every 3 mo by reviewing the inspection records. (1)(2)(9) Determine whether any PCB Transformers have been leaking. (1)(2) Verify that when leaking PCB Transformers have been found, proper reporting procedures have been followed. (1)(2)(9)(25) Verify that the following information is recorded for each PCB Transformer inspection: (2)(23) - location of transformer - dates of each visual inspection - date when any leak was discovered - name of person conducting inspection - location and estimate of the dielectric fluid quantity for any leaks - data and description of any cleanup, containment, or repair performed - results of any daily inspections for transformers with uncorrected active leaks. (NOTE: Reduced visual inspection of at least once every 12 mo is allowed for PCB Transformers with impervious, undrained secondary containment capacity of 100 percent of dielectric fluid and for PCB Transformers tested and found to contain less than 60,000 ppm PCBs.) (NOTE: Increased visual inspection of once a week is required for any PCB Transformer in use or stored for reuse which poses an exposure risk to food or feed.) Verify that records of inspection and maintenance are kept for 3 yr after disposal. (1)(2)(23)
...	...
8-17. PCB Transformers with concentrations of PCBs at 500 ppm or greater found to be leaking during an inspection must be repaired or replaced to eliminate the source of the leak (40 CFR 761.30(a)(1)(x)).	Verify that cleanup and/or containment of released PCBs has been initiated within 48 h of its detection or as soon as possible. (1)(2)(9) Verify that leaking PCB Transformers are inspected daily. (9) Determine if plans exist to repair or replace transformers to eliminate the source of the leak. (2)(23) Verify that cleaned up material is disposed of according to appropriate requirements, see checklist items on DISPOSAL. (2)(23)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-18. When a PCB Transformer with concentrations of PCBs at 500 ppm or greater is involved in a fire, the installation is required to immediately report the incident to the National Response Center (NRC) (40 CFR 761.30(a)(1)(xi)).	Determine if any PCB Transformers have been involved in any incident where sufficient heat and/or pressure was generated to result in the violent or nonviolent rupture of a PCB Transformer and the release of PCBs. (1)(2)(9)(25) Verify that the NRC was notified and the following measures were taken: (1)(2) - floor drains were blocked - water runoff was contained.
...	...
PCB SPILLS	
8-19. Installations are required to report spills of more than 4.5 kg (10 lb) of PCBs of concentrations of 50 ppm or greater (40 CFR 761.120 (a)(1), 761.123(d)(2), and 761.125(a)).	Verify that when a spill of 4.5 kg (10 lb) or more directly contaminates surface water, sewers, or drinking water the installation notifies the regional USEPA office within 24 h after discovery of the spill and acts on the guidance given by the USEPA. (1)(2)(23) Verify that if a spill of 4.5 kg (10 lb) or more directly contaminates grazing land or a vegetable garden the installation notifies the USEPA regional office within 24 h after discovery and begins the cleanup of the spill. (1)(2)(23) Verify that when a spill of 4.5 kg (10 lb) or more occurs which does not directly contaminate surface waters, sewers, drinking water supplies, grazing land, or a vegetable garden the installation notifies the USEPA Regional office within 24 h after discovery of the spill and begins decontamination of the spill area. (1)(2)(23) (NOTE: Spills of greater than 0.5 kg (1 lb) are required to be reported to the NRC under 40 CFR 302.1 through 302.6, see appropriate checklist questions in *CERCLA/SARA*.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-20. Cleanup of low concentration spills of less than 0.5 kg (1 lb) of PCBs (less than 1023 L (270 gal) of untested mineral oil) must be done according to specific requirements (40 CFR 761.120(a)(2), 761.120(b), 761.120(c), and 761.125 (b)).	Verify that solid surfaces are double washed/rinsed and all indoor, residential surfaces other than vault areas are cleaned to 10 micrograms (µg) per 100 square centimeters (cm^2) by standard commercial wipe tests. (1)(2)(23) Verify that all soil within the spill area (visible traces of soil and buffer of 1 lateral foot around the visible traces) is excavated and the ground restored to its original status by backfilling with clean soil (soil with less than 1 ppm PCBs). (1)(2)(23) Verify that the above cleanup requirements are done within 48 h after identifying the spill unless an emergency or adverse weather delays the process. (1)(2)(23) Verify that the cleanup is documented with records and certification of decontamination and the records are maintained for 6 yr. (1)(2)(23) (NOTE: The final numerical cleanup standards do not apply to spills directly into surface waters, drinking water, sewers, grazing lands, and vegetable gardens.) (NOTE: The USEPA may impose more stringent or less stringent cleanup requirements on a case by case basis depending on conditions such as possibility of groundwater contamination.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-21. Cleanup of high-concentration spills and low concentration spills involving 0.5 kg (1 lb) or more of PCBs by weight (1023 L (270 gal)) or more of untested mineral oil must be done according to specific requirements (40 CFR 761.120 (a)(2), 761.120 (b), 761.120(c), and 761.125 (c)).	Verify that the following actions are taken within 24 h (or within 48 h for PCB Transformer with PCB concentrations of greater than 500 ppm) of discovery of the spill: (1)(2)(23) - notification of the USEPA regional office and the NRC - the area of the spill is cordoned off or otherwise identified to include the area with visible traces of the spill and a 2 foot buffer zone (If there are no visible traces, the area of the spill may be estimated.) - clearly visible signs are placed advising persons 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. Verify that if the spill occurs in an outdoor substation: (1)(2)(23) - contaminated solid surfaces are cleaned to a PCB concentration of 100 $\mu g/cm^2$ (as measured by standard wipe tests) - soil contaminated by the spill is cleaned to either 25 ppm PCBs by weight or 50 ppm PCBs by choice of the installation if a label to notice is placed in the area indicating the level of cleanup - post-cleanup sampling is done. Verify that if the spill occurs in a restricted access area other than an outdoor substation: (1)(2)(23) - high-contact solid surfaces are cleaned to 10 $\mu g/cm^2$ (as measured by standard wipe tests) - low-contact, indoor, impervious solid surfaces are decontaminated to 10 $\mu g/100\ cm^2$ - low contact, indoor, nonimpervious surfaces are cleaned to either 10 $\mu g/100\ cm^2$ or 100 $\mu g/100\ cm^2$ and encapsulated at the option of the installation - low-contact, outdoor surfaces (both impervious and nonimpervious are cleaned to 100 $\mu g/100\ cm^2$ - soil contaminated by the spill is cleaned to 25 ppm PCBs by weight - post-cleanup sampling is done.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-21. (continued)	Verify that spills in nonrestricted access locations are decontaminated as follows: (1)(2)(23) - furnishings, toys, and other easily replaceable household items are disposed of and replaced - indoor solid surfaces and high-contact outdoor solid surfaces are cleaned to 10 µg/100 cm^2 (as measured by standard wipe tests) - indoor vault areas and low-contact, outdoor, impervious solid surfaces are decontaminated to 10 µg/100 cm^2 - at the option of the installation, low-contact, outdoor, nonimpervious solid surfaces are cleaned to either 10 or 100 µg/100 cm^2 and encapsulated - soil is decontaminated to 10 ppm PCBs by weight provided that the soil is excavated to a minimum depth of 25.4 cm (10 in.) and replaced with clean soil - post-cleanup sampling is done. Verify that records documenting all cleanup and decontamination are maintained for 5 yr. (1)(2)(23) (NOTE: The occurrence/discovery of the spill on the weekend or overtime costs are not considered acceptable reasons to delay response.) (NOTE: The final numerical cleanup standards do not apply to spills directly into surface waters, drinking water, sewers, grazing lands, and vegetable gardens.) (NOTE: The USEPA may impose more stringent or less stringent cleanup requirements on a case by case basis depending on conditions such as possibility of groundwater contamination.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PCB ITEMS	
8-22. PCBs may be used in heat transfer and hydraulic systems in a manner other than a totally enclosed manner at concentrations less than 50 ppm if specific requirements are met (40 CFR 761.30(d-e)).	Determine if testing has been conducted to demonstrate that heat transfer or hydraulic systems, that formerly contained PCBs at a concentration greater than 50 ppm, now contain less than 50 ppm PCBs. (1)(2)(25) Verify that no fluid containing greater than 50 ppm PCB is added to heat transfer or hydraulic systems. (1)(2)(25) Verify that results from analyses, which are performed to demonstrate presence of less than 50 ppm PCB, are retained for confirmation for at least 5 yr. (1)(2)(25) Confirm that heat transfer or hydraulic systems are free from leaks of dielectric PCBs. (1)(2)(25)
...	...
8-23. Electromagnets, switches, and voltage regulators may contain PCBs at any concentrations if certain requirements are met (40 CFR 761.30(h)).	Verify that no electromagnets are used or stored on the installation that contain greater than 500 ppm PCB and pose an exposure risk to food or feed. (2)(25) Verify that electromagnets that contain greater than 500 ppm PCB which pose an exposure risk to food or feed are inspected at least weekly to determine if they are leaking. (2)(25) Verify that electromagnets, switches, and voltage regulators, that contain 500 ppm or greater PCB, are not rebuilt and no removal or reworking of internal components is done during servicing. (2)(25) Verify that electromagnets, switches, and voltage regulators which contain between 50 and 500 ppm PCB (PCB Contaminated Electrical Equipment) are only serviced with dielectric fluid with less than 500 ppm PCB. (2)(25) Verify that PCBs removed or captured are either reused as dielectric fluid or disposed of properly. (2)(25) Verify that dielectric fluid containing a mixture of fluids with less than 500 ppm PCBs is not used as dielectric fluid in any electrical equipment. (2)(25)
...	...
8-24. Capacitors may contain PCBs at any concentration subject to certain requirements (40 CFR 761.30(l)).	Verify that all PCB Large, High- and Low-Voltage Capacitors that pose an exposure risk to food and feed have been removed. (1)(2)(9) Verify that all PCB Large, High- and Low-Voltage Capacitors are in use only in restricted-access electrical substations, or in a contained and restricted-access indoor area. (1)(2)(25) Verify that Capacitors have been free from leaks of dielectrical PCBs. (1)(2)(25)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-25. Circuit breakers, reclosers, and cable may contain PCBs at any concentration for the remainder of their useful lives subject to certain conditions (40 CFR 761.30(m)).	Verify that any circuit breakers, reclosers, and cables used at the installation are serviced using only dielectric fluid which contains less than 50 ppm PCB and have been free from leaks. (1)(2)(23)
...	...
PCBs IN RESEARCH	
8-26. Use of pigments containing PCBs in research or microscopy or in miscellaneous items are subject to certain conditions (40 CFR 761.30 (g), 761.30(j), and 761.30(k)).	Verify that pigments used on installation contain PCBs in concentrations less than 50 ppm. (1)(2) Verify that pigments are handled in enclosed conditions. (1)(2)
...	...
PCB STORAGE	
8-27. 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 assure the containment of PCBs (40 CFR 761.65(a) through 761.65(b) and 761.65(c)(8)).	Inspect the PCB storage area and verify that the following provisions are present: (1)(2)(23) - the roof and walls of the building in which the PCBs are stored is constructed so as to exclude rainfall from contacting PCBs and PCB items - a 15.24 cm (6-in.) tall containment curb circumscribing the entire area in which any PCBs or PCB Items are stored. Such curbing shall effectively provide 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 - drains, valves, floor drains, expansion joints, sewer lines or other openings that would allow liquids to flow from the curbed area, are not be present - floors and curbing are constructed of continuous, smooth, and impervious material - location is not below a 100-yr flood water elevation. Verify that PCB Articles or PCB Containers are removed from storage and disposed of within 1 yr from the date they were placed in storage. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-28. PCB Items may also be stored in other areas that do not comply with the storage area requirements when such storage is for a period of less than 30 days and when any such PCB items are marked with the date of removal from service (40 CFR 761.65(c)(1)).	Verify that only the following items are stored in areas used as 30 day storage areas and they are properly marked: (2)(9)(23) - nonleaking PCB Articles and PCB Equipment - leaking PCB Articles and PCB Equipment placed in a nonleaking PCB Container which contains sufficient sorbent material to absorb liquid contained on the PCB Article or equipment - PCB Containers in which nonliquid PCBs have been placed - PCB Containers in which liquid PCBs at a concentration between 50 to 500 ppm have been placed when Containers are marked to indicate less than 500 ppm PCB. Verify that the area has been included in the installation SPCC Plan, and ISCP. (1)(2)(9)
...	...
8-29. Nonleaking and structurally undamaged PCB Large, High-Voltage Capacitors and PCB Contaminated Electric Equipment (50 to 500 ppm) that have not been drained of freeflowing dielectric fluid may be stored on pallets next to a storage area that complies with the storage area requirements (40 CFR 761.65(c)(2)).	Verify that the available unfilled storage space in the storage area is equal to at least 10 percent of the volume of capacitors and electrical equipment stored outside. (2)(9)(23)(25) Verify that capacitors and equipment stored outside the storage facility are on pallets and inspected at least weekly. (2)(9)(23)
...	...
8-30. Specific operational procedures are required at PCB storage areas (40 CFR 761.65(c)(4), 761.65(c)(5), and 761.65(c)(8)).	Verify that the following practices are conducted at any areas where PCBs or PCB Items are stored: (2)(9)(23) - movable equipment used for handling PCBs and PCB Items that directly contact PCBs are not removed from storage areas unless decontaminated - inspections for leaks of all PCB Articles and PCB Containers in storage are done at least once every 30 days - any leaked PCBs are immediately cleaned up and any spill absorbent material is properly disposed of - PCB Articles and Containers are marked with the date when placed into storage - PCB Articles and PCB Containers are positioned so that they can be located by the date they were placed into storage - containers in which PCBs are accumulated have a record that includes quantity and date of each batch.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-31. Containers used for the storage of PCBs are required to comply with the shipping container specification of the Department Of Transportation (DOT) (40 CFR 761.65(c)(6) and 761.65 (c)(7)).	Inspect PCB storage area for containers. (2)(9) Verify that DOT specifications are on drums/containers. Typical specifications are 5, 5B, and 17C. (2)(9)(23) (NOTE: Containers larger than those specified in DOT Specs 5, 5B, or 17C may be used for nonliquid PCBs when such containers will provide as much protection against leaking and exposure to the environment as the DOT specified containers.) Verify that containers used for storage of liquid PCBs are containers without removable heads. (2)(9)(25) Verify that if the installation uses containers larger than DOT approved containers, it has prepared a SPCC Plan covering the containers storing PCBs.
...	...
TRANSPORTATION	
8-32. A generator who offers a PCB waste for transport for commercial offsite storage or offsite disposal must prepare a manifest (40 CFR 761.207 through 761.210).	Verify that a manifest (USEPA Form 8700-22) has been prepared when needed and that it contains: (1)(2)(9) - the identity of PCB Waste, the earliest date of removal from service for disposal and the weight in kg of the waste for bulk load of PCBs, and - the unique identifying number of each PCB Article Container, the date of removal from service, type of waste, and the weight of PCB waste contained - the serial number if available or other identification for each PCB Article not in a PCB Container or PCB Article Container, the date of removal from service for disposal, and weight in kg of the PCB waste in each PCB Article. Verify that sufficient copies are prepared to supply the generator, the initial transporter, each subsequent transporter, and the owner or operator of the disposal facility with one legible copy each for their records, and one additional copy to be signed and returned to the generator by the owner or operator of the disposal facility. (2)(23)(25) Verify that the generator maintains a copy of the signed manifest for at least 3 yr after receipt of waste by the initial transporter. (2)(25) (NOTE: This applies to PCB wastes as defined in 40 CFR 761.3, and that contain greater than 50 ppm PCB unless the concentration was reduced below 50 ppm by dilution.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-33. If the generator does not receive a signed copy of the manifest within 35 days of the date the waste was accepted by the initial transporter, the generator should immediately contact the transporter and/or owner or operator of the designated facility to determine the status of the PCB waste (40 CFR 761.215(a) and 761.215 (b)).	Verify that a procedure is in place so that if the generator does not receive a copy within 45 days of the date the waste was accepted by the initial transporter, an Exception Report was filed with the USEPA containing the following information: (1)(2)(9)(25) - a legible copy of the manifest for which the generator does not have confirmation of delivery - a cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the PCB Waste and the results of those efforts.
...	...
DISPOSAL	
8-34. For each shipment of manifested PCB waste that a disposal facility accepts, the owner or operator of the disposal facility must prepare a Certificate of Disposal (40 CFR 761.218).	Verify that a Certificate of Disposal has been prepared containing the following information: (1)(2)(9) - the identity of the disposal facility: by name, address, and USEPA ID No. - the identity of the PCB Waste affected by the Certificate including reference to the manifest number for the shipment - a certification as defined in 40 CFR 761.3. Verify that a copy of the Certificate was: (2)(23)(25) - sent to the generator identified on the manifest within 30 days of the date that disposal of the PCB Waste was completed - retained at the facility with the annual report.
...	...
8-35. PCB liquids greater than 50 ppm must be disposed of in an incinerator which is approved by USEPA to incinerate PCBs (40 CFR 761.60(a)(1)).	Verify that all shipments were made to USEPA licensed PCB incinerators by checking DRMO manifests for all PCB shipments over the past 3 yr. (2)(23) (NOTE: Other disposal provisions apply to: - mineral oil dielectric fluid from PCB-Contaminated Electrical Equipment with a concentration greater than 50 ppm but less than 500 ppm - liquids, other than mineral oil dielectric fluids, with PCB concentrations between 50 and 500 ppm - rags, solids, and other debris contaminated with PCBs at concentrations greater than 50 ppm - PCB Articles.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

8-36. Mineral oil dielectric fluid from PCB-Contaminated Electrical Equipment containing a PCB concentration greater than 50 ppm but less than 500 ppm is required to be disposed of according to specific methods (40 CFR 761.60(a)(2)).
 	
...
	Verify that mineral oil dielectric fluid as described is disposed of in one of the following methods: (2)(23)
	
	- an USEPA approved incinerator
	- an approved chemical waste landfill if written information proves that the fluid is not contaminated at greater than 500 ppm and is not an ignitable waste
	- an approved high efficiency boiler.
	
	Verify that if the fluid is burned in an high efficiency boiler: (2)(23)
	
	- the boiler is rated at a minimum of 50 million British thermal units (MBtu)/h
	- the CO concentration in the stack is 10 ppm or less and the excess oxygen is at least 3 percent when PCBs are being burned and the boiler uses natural gas or oil as the primary fuel
	- the CO concentration in the stack is 100 ppm or less and the oxygen content is at least 3 percent when PCBs are being burned and the boiler uses coal as the primary fuel
	- the mineral oil dielectric fluid does not compromise more than 10 percent (on a volume basis) of the total fuel feed rate.
	- the mineral oil dielectric fluid is not fed into the boiler unless the boiler is operating at its normal operating temperature
	- the operator of the boiler does one of the following:
	  - continuously monitors and records the CO concentrations and excess oxygen percentages in the stack gas while burning mineral oil dielectric fluid
	  - measure and records the CO concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 min if the boiler will burn less than 113,700 L (30,000 gal) of mineral oil dielectric fluid per year
	- the primary fuel feed rates, the mineral oil dielectric fluid feed rates, and total quantities of both primary fuel and mineral oil dielectric fluid fed to the boiler are measured and recorded at regular intervals of no longer than 15 min
	- the CO concentration and the excess oxygen percentage are checked at least once every hour and if either measurement falls below the specified levels, the flow of the mineral oil dielectric fluid to the boiler stops immediately.
	
	Verify that 30-days before burning mineral oil dielectric fluid, a written notice of the burning is given the to USEPA Regional Administrator. (23)(25)
	
	Verify that the following information is obtained by persons burning mineral oil dielectric fluid in a boiler and kept at the boiler location for 5 yr: (23)(25)
	
	- emissions data
	- the quantity of mineral oil dielectric fluid burned in the boiler each month.
	
	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

8-37. PCB contaminated fluids other than mineral oil dielectric fluid of concentrations greater than 50 ppm but less than 500 ppm are required to be disposed of according to specific requirements (40 CFR 761.60(a)(3)).	Determine whether any PCB fluids meeting these criteria were processed for disposal in the last year. (23)(25)
	
	Verify that disposal was done at: (23)(25)
	
	- a USEPA-approved incinerator
	- a USEPA-approved chemical waste landfill
	- a high efficiency boiler.
	
	Verify that if the fluid is burned in an high efficiency boiler: (23)(25)
	
	- the boiler is rated at a minimum of 50 MBtu/h
	- the CO concentration in the stack is 50 ppm or less and the excess oxygen is at least 3 percent when PCBs are being burned and the boiler uses natural gas or oil as the primary fuel
	- the CO concentration in the stack is 100 ppm or less and the oxygen content is at least 3 percent when PCBs are being burned and the boiler uses coal as the primary fuel
	- the waste does not compromise more than ten percent (on a ume basis), of the total fuel feed rate.
	- the waste is not fed into the boiler unless the boiler is operating at its normal operating temperature
	- the operator of the boiler does one of the following:
	  - continuously monitors and records the CO concentrations and excess oxygen percentages in the stack gas while burning the waste fluid
	  - measure and records the CO concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 min if the boiler will burn less than 113,700 L (30,000 gal) of waste fluid per year
	- the primary fuel feed rates, the waste fluid feed rates, and total quantities of both primary fuel and waste fluid fed to the boiler are measured and recorded at regular intervals of no longer than 15 min
	- the CO concentration and the excess oxygen percentage are checked at least once every hour and if either measurement falls below the specified levels, the flow of the waste fluid to the boiler stops immediately.
	
	Verify that before burning waste fluid, approval has been obtained from the USEPA Regional Administrator. (23)(25)
	
	Verify that the following information is obtained by persons burning waste fluid in a boiler and kept at the boiler location for 5 yr: (23)(25)
	
	- emissions data
	- the quantity of waste fluid burned in the boiler each month
	- a waste analysis.
	
	Verify that such PCB fluids were disposed of by an approved method at a properly licensed facility. (23)

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-38. Rags, soils, and other debris contaminated with PCBs at concentrations greater than 50 ppm must be disposed of in a PCB incinerator or in a chemical waste landfill (40 CFR 761.60(a)(4)).	Determine if any contaminated soil or debris has been disposed of by the installation. (23)(25) Verify that disposal of contaminated soil or debris was conducted at a licensed facility. (23)(25)
...	...
8-39. PCB Transformers with concentrations of PCBs at 500 ppm or greater shall be disposed of in either a USEPA approved incinerator or a chemical waste landfill (40 CFR 761.60(b)(1)).	Determine if the PCB Transformers are being disposed of at a USEPA-approved incinerator or a chemical waste landfill. (1)(2)(9) Verify that if disposal is being done at a chemical waste landfill the transformer is drained of all free-flowing liquids, filled with solvent, allowed to stand for at least 18 h, and than drained thoroughly. (1)(2)(9)
...	...
8-40. PCB Capacitors must be disposed of in accordance with certain facility regulations (40 CFR 761.60(b)(2)).	Verify that disposal of PCB Capacitors was done accordingly: (1)(2)(23) - PCB Small Capacitors (less than 1.4 kg (3 lb) of PCBs) disposed of in a solid waste landfill - PCB Large, High- or Low-Voltage Capacitors (greater than 1.4 kg (3 lb) of PCBs) containing more than 500 ppm are incinerated in a USEPA approved incinerator. (NOTE: The large, high, or low-voltage capacitors may be disposed of in a chemical waste landfill upon approval of the USEPA.) Verify that capacitors in storage are placed in DOT containers with absorbent material. (2)(23)(25)
...	...
8-41. PCB hydraulic machines containing PCBs at concentrations greater than 50 ppm may be disposed of as municipal solid waste if specific conditions are met (40 CFR 761.60(b)(3)).	Verify that the machines are drained of all free-flowing liquid. (1)(2)(9) Verify that if the machine contained PCB liquid of 1000 ppm PCB or greater, it is flushed prior to disposal with a solvent containing less than 50 ppm PCB. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-42. PCB contaminated electrical equipment, except capacitors, shall be disposed of by draining off the free-flowing liquid (40 CFR 761.60(b)(4)).	Verify that the free-flowing liquid is drained from electrical equipment prior to disposal. (1)(2)(9)
...	...
8-43. PCB Articles shall be disposed of properly (40 CFR 761.60(b)(5)).	Verify that PCB Articles with concentrations at 500 ppm or greater are disposed of in either: (1)(2)(9) - a USEPA-approved incinerator - a chemical waste landfill if all free-flowing liquids have been removed. Verify that PCB Articles with PCB concentration between 50 and 500 ppm are drained of all free-flowing liquid. (1)(2)(9)
...	...
8-44. PCB Containers shall be disposed of properly (40 CFR 761.60(c)).	Verify that PCB Containers with concentrations of 500 ppm or greater is disposed of in one of the following ways: (1)(2)(9) - in a USEPA-approved incinerator - in a chemical waste landfill if first the container is drained of any liquid PCBs. Verify that PCB Containers used to contain only PCBs at concentrations less than 500 ppm are drained of PCB liquid prior to disposal as municipal solid waste. (1)(2)(9)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

Appendix 8-1

PCB Label Format

CAUTION

CONTAINS

PCBs

(POLYCHLORINATED BIPHENYLS)

A toxic environmental contaminant requiring special handling and disposal in accordance with U.S. Environmental Protection Agency Regulations 40 CFR 761. For Disposal Information contact the _____ or nearest U.S. EPA office.

In case of accident or spill, call the or the U.S. Coast Guard National Response Center: 800: 424-8802

Appendix 8 - 2

DIELECTRIC FLUID TREND NAMES AND MANUFACTURERS

1. U.S. Manufactured Dielectrics:

Name	Manufacturer
Aroclor	Monsanto
Aroclor B	Mallory
Sbestol	American Corporation
Askarel Hevi-Duty	Hevi-Duty Corporation
Askarel *	Ferranti-Packard,Ltd.
Askarel	Universal Mfg. Co.
Chlorextol	Allis-Chalmers
Chlorinol	Sparagoe Electric
Chlorphen	Jard Company
Diaclor	Sangamo Electric
Dykanol	Cornell Dubilier
Elemex	McGraw Edison
Eucarel	Electric Utilities Co.
Hyvol	Aerovox
Inerteen	Westinghouse Electric
No-Flamol	Wagner Electric
Pyranol	General Electric
Saf-T-Kuhl	Kuhlman Electric

* Generic name used for insulating liquids in capacitors and transformers.

2. Foreign Manufactured Dielectrics:

Name	Manufacturer
Clophen	Bayer (Germany)
Fenclo	Caffaro (Italy)
Kennechlor	Mitsubishi (Japan)
Phenoclor	Prodelec (France)
DK	Caffaro (Italy)
Pyralene	Prodelec (France)
Solvol	USSR
Santotherm	Mitsubishi (Japan)

3. Transformers that list other dielectrics or do not bear a manufacturer's identification or service plate on the transformer: if the transformer contains any of the dielectrics (commonly referred to as askarels), it is to be certified as a PCB transformer containing in excess of 500 ppm PCB and no laboratory testing is necessary.

INSTALLATION:	COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer (5) Fire Department (9) Chief of Operations and Maintenance (O&M) (23) Defense and Reutilization Marketing Office (DRMO) (25) Utilities Division (Exterior Electric Shop)

Section 9

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)

SECTION 9

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)

A. Applicability of this Protocol

This protocol applies to any Army facility that uses, stores, or handles pesticides. Pesticides are regulated on the Federal level, on the state level, and by specific Department of Defense (DOD) and U.S. Army regulations (ARs). This protocol integrates the requirements of these regulations into a single document that normally will apply to any facility that handles pesticides.

Much of the guidance for pest management involves Operation and Maintenance (O&M) procedures. This protocol 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 protocol addresses the adequacy of facilities, operating procedures, personnel qualifications, and reporting of pesticide use.

B. Federal Legislation

- The *FIFRA, as last amended in* December 1991, by 7 U.S. Code (USC) 136-136y, deals with the sale, distribution, transportation, storage, and use of pesticides. The U.S. Environmental Protection Agency (USEPA) may, by regulation or as part of an order issued under Section 136d of this Act or an amendment to such an order:
  - issue requirements and procedures to be followed by any person who stores or transports any container of a pesticide, the registration of which has been suspended or cancelled, any rinsate containing the pesticide, or any other material used to contain or collect excess or spilled quantities of the pesticide
  - issue requirements and procedures to be followed by any person who disposes of stocks of any container of a pesticide, the registration of which has been suspended, any rinsate containing the pesticide, or any other material used to contain or collect excess or spilled quantities of the pesticide
  - issue requirements and procedures for the disposal of any container of a pesticide, the registration of which has been cancelled, any rinsate containing the pesticide, or any other material used to contain or collect excess or spilled quantities of the pesticide (7 USC 136q(a)(3)).

C. State/Local Requirements

State pesticide regulatory programs should be at least as stringent as the FIFRA. State and local pesticide regulations in many cases provide more stringent standards or specifically identify a requirement that may be qualitatively regulated under the Federal program.

State and local pesticide programs generally include regulations addressing the following topics:

- restrictions or requirements for the sale, distribution, or use of selected pesticides
- disposal requirements for excess pesticides and pesticide wastes such as pesticide containers
- restrictions on the control of specific animal or insect species
- specifications for bulk pesticide storage tanks and storage facilities
- operational requirements for selected application methods
- recordkeeping and applicator certification requirements.

D. DOD Regulations

- DOD Directive 4150.7, *Pest Management Program*, sets forth the policies, responsibilities, and procedures for pest management programs. This directive establishes the DOD policy of maintaining safe, efficient, environmentally sound, and integrated pest management programs to prevent or control pests that may adversely affect health or damage structures, material, or property. The DOD Plan for the Certification of Pesticide Applicators establishes the policies, criteria, and curriculum for granting certification of personnel.

- DOD 4160.21-M, *Defense Utilization and Disposal Manual*, in Chapter 9, *Hazardous Property Management*, sets out guidance for the handling, processing, and disposing of hazardous property in accordance with applicable environmental, safety, and other laws and regulations.

E. U.S. ARs

- AR 200-1, *Environmental Protection and Enhancement*, prescribes responsibilities, policies, and procedures to preserve, protect, and restore the quality of the environment.

- AR 420-76, *Pest Management*, provides policies, standards, and procedures for pest control activities at U.S. Army-controlled facilities. It sets minimum levels of pest management operations in real property maintenance activities (RPMA) and states that these operations are to be compatible with national environmental protection mandates.

F. Key Compliance Requirements

- Certification - A specific number of certified pesticide applicators must be present at each facility according to the productive work-years stipulated by the pest control needs of the facility (DOD Directive 4150.7, Appendix 9-1). Certification must be obtained for specific facility pest management activities (40 Code of Federal Regulations (CFR) 171.3).

- Storage, Mixing, and Personnel Facilities - Facilities are required to provide some separation for select components of the pest management shop. Pesticides shall be stored separately from other operations and where food is located, stored, prepared, or served. Facilities shall provide areas for mixing, equipment storage, decontamination, and personnel amenities as well as systems for spill containment, ventilation, personnel safety, entry control, and runoff retention (40 CFR 165).

G. Responsibility for Compliance

- The Directorate of Engineering and Housing (DEH) will prepare a pest management plan, supervise and direct pest management operations, conduct preventive maintenance and surveillance inspections, ensure that operating personnel are adequately trained, maintain supplies of pesticides and related equipment, and assure that all pest management operations are done safely. In addition, the Facilities Engineer will decide which activities should be contracted out, perform all recordkeeping and reporting requirements of AR 420-76, notify heads of nonappropriated funds activities that restricted and controlled pesticides must be applied by under supervision of certified personnel, and cooperate with medical authorities.

- Preventive Medicine Office will: survey the pest population involved in health of the command and report the results to the facilities engineer; conduct the installation pesticide monitoring program; obtain timely identification and susceptibility of pests to pesticides as necessary and report to the facilities engineer; establish health and personnel safety criteria for pesticide operation; provide certification training; and assist the Major Army Command (MACOM) pest management consultant in conducting an onsite installation pest management program review.

- The Installation Pest Management Coordinator will be a pest management supervisor or professional pest management personnel member, will develop and monitor the installation pest management annual work plan, and will coordinate with activities conducting pest surveillance or applying pesticides to ensure that all applicable information is reported per AR 420-76.

H. Key Compliance Definitions

These definitions were obtained from Federal, DOD, and U.S. ARs previously cited in this protocol.

- *Acute LD_{50}* - a statistically derived estimate of the concentration of a substance that would cause 50 percent mortality to the test population under specified conditions (40 CFR 152.3).

- *Caution* - the human hazard signal word required on the front panel of a pesticide container, determined by the Toxicity Category of the pesticide. All pesticide products meeting the criteria of Toxicity Category III or IV must bear the signal word "Caution" on the front panel (see definition of Toxicity Category) (40 CFR 156.10(h)).

- *Commercial Applicator* - a certified applicator, other than a private applicator, who uses or supervises the use of any pesticide, for any purpose, on any property, or performs other pest control related activities (40 CFR 171.2).

- *Crisis Exemption* - an application used in an emergency condition when the time from discovery of the emergency to the time when the pesticide use is needed is insufficient to allow for the authorization of a specific quarantine or public health exemption (40 CFR 166.2).

- *Danger* - the human hazard signal word required on the front panel of a pesticide container, determined by the Toxicity Category of the pesticide. All pesticide products meeting the criteria of Toxicity Category I must bear the signal word "Danger" on the front panel (see definition of Toxicity Category) (40 CFR 156.10(h)).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *Imminent Hazard* - a situation that exists when the continued use of a pesticide during the time required for cancellation proceedings would be likely to result in unreasonable, adverse effects on the environment or would involve unreasonable hazard to the survival of a species declared endangered by the Secretary of the Interior under Public Law (PL) 91-135 (40 CFR 165.1).

- *Pesticide* - any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest or for use as a plant regulator, defoliant, or disinfectant. Pesticides are further categorized into the following:
  - "Excess pesticides" means all pesticides that cannot be legally sold pursuant to the Act or that are to be discarded
  - "Organic pesticides" means carbon-containing substances used as pesticides, excluding metallo-organic compounds
  - "Inorganic pesticides" means noncarbon-containing substances used as pesticides
  - "Metallo-organic pesticides" means a class of organic pesticides containing one or more metal or metalloid atoms in the structure (40 CFR 165.1).

- *Pesticide Product* - a pesticide in the particular form (including composition, packaging, and labeling) in which the pesticide is, or is intended to be, distributed or sold. This includes any physical apparatus used to deliver or apply the pesticide if distributed or sold with the pesticide (40 CFR 152.3).

- *Public Health Exemption* - an application that may be authorized in an emergency condition to control a pest that will cause a significant risk to human health (40 CFR 166.2).

- *Quarantine Exemption* - an application that may be authorized in an emergency condition to control the introduction or spread of any pest new to or not therefore known to be widely prevalent or distributed within and throughout the United States and its territories (40 CFR 166.2).

- *Restricted Use Pesticides* - pesticides designated for restricted use under the provisions of Section 3(d)(1)(c) of FIFRA (40 CFR 171.2).

- *Specific Exemption* -this exemption may be authorized in an emergency condition to avert (40 CFR 116.2):
  - a significant economic loss
  - a significant risk to endangered species, threatened species, beneficial organisms, or the environment.

- *Toxicity Category* - the ranking of pesticides on which required warnings and precautionary statements are based. The category is assigned on the basis of the highest hazard shown in the table listed in 40 CFR 156.10 (40 CFR 156.10(h)).

- *Warning* - the human hazard signal word required on the front panel of a pesticide container, determined by the Toxicity Category of the pesticide. All pesticide products meeting the criteria of Toxicity Category II shall bear the signal word "Warning" on the front panel (see 40 CFR 156.10 for listing of indicators necessary to meet specific criteria of toxicity categories) (40 CFR 156.10(h)).

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All facilities	9-1 through 9-14	(2)(3)(16)(17)(22)(33)
Pesticide Application	9-15 through 9-22	(2)(3)(16)(17)(33)
Storing, mixing, or preparing pesticides	9-23 through 9-42	(2)(5)(17)(33)
Disposal	9-43 through 9-46	(2)(16)(17)(33)

(a) CONTACT/LOCATION CODE:

(2) Environmental Coordinator (EC)
(3) Preventive Medicine Officer
(5) Fire Department
(16) Building and Grounds Division (DEH)
(17) Entomology Shop (DEH)
(22) Staff Judge Advocate (SLA)
(33) Golf Course Pesticide Shop

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)

Plans and Maps to Review

- Installation pest management plan

Records to Review

- Records of pesticides purchased by the facility (purchase orders, inventory)
- Pesticide application records
- Description of the facility's pest control program
- Certification status of pesticide applicators
- Pesticide disposal manifests
- Any emergency exemption granted to the Federal agency by the USEPA
- Contracts for pest management
- Recent ventilation rating for pesticide fume hood and pesticide mixing/storage rooms
- Staffing requirements for pest management program

Physical Features to Examine

- Personnel protection equipment
- Pesticide application equipment
- Pesticide storage areas, including storage containers
- Military unit storage/supply areas
- DEH/Department of Logistics (DOL) supply and storage areas
- Field sanitation training sites

People to Interview

- Environmental Coordinator (EC)
- Preventive Medicine Officer
- Fire Department
- Building and Grounds Division (DEH)
- Entomology Shop (DEH)
- Staff Judge Advocate (SJA)
- Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
9-1. Determine actions or changes since previous review of the pest management program (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1) (NOTE: The term "PESTICIDE" refers to insecticides, rodenticides, herbicides, and other pest control chemicals.)
...	...
9-2. Current copies of all relevant Federal, DOD, U.S. Army and state/local regulations and guidance should be maintained (GMP).	Verify whether copies of the following regulations, which are applicable, are kept at the installation: (2)(16)(17)(22) - 40 CFR 152, *Pesticide Registration and Classification Procedures.* - 40 CFR 165, *Regulations for the Acceptance of Certain Pesticides and Recommend Procedures for the Disposal and Storage of Pesticides and Pesticide Containers.* - 40 CFR 166, *Exemption of Federal and State Agencies for use of pesticides Under Emergency Conditions.* - 40 CFR 171, *Certification of Pesticide Applicators.* - Executive Order (EO) 12088, *Federal Compliance with Pollution Standards.* - DODR 4145.19-1, *Storage and Materials Handling.* - DOD Directive 4150.7, *Pest Management Program.* - DOD 4160.21-M, *Hazardous Property Management.* - AR 11-34, *The Army Respiratory Protection Program.* - AR 40-5, *Preventive Medicine.* - AR 200-1, *Environmental Protection and Enhancement.* - AR 385-32, *Protective Clothing and Equipment.* - AR 420-76, *Pest Management.* - TIM No.14, *Protective Equipment for Pest Control Personnel.* - TIM No.15, *Pesticide Spill Prevention and Management.* - TIM No.16, *Pesticide Fires: Prevention, Control and Clean-up.* - TIM No.17, *Pest Control Facilities.* - TIM No.21, *Pesticide Disposal Guide for Pest Control Shops.* - Applicable state and local regulations.
...	...
9-3. Installations are required to comply with applicable state and local requirements (EO 12088, Section 1-1).	Verify that the installation is complying with state and local requirements. (1)(17) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2) (NOTE: Issues that are typically regulated by state and local agencies include: - certification of applicators - restricted use pesticides - application procedures - disposal methods.)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2) Verify that the existing system addresses the issues associated with FIFRA by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)
...	...
9-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning pesticides have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...
9-6. All pesticides present on the installation must be registered or ruled exempt from the registration requirements (40 CFR 152.15 through 152.30).	Verify that pesticide products at the installation are registered unless the product is considered exempt, such as the following: (2)(3)(17)(33) - certain biological control agents - certain human drugs - treated articles or substances such as paint treated with a pesticide - pheromones and pheromone traps - preservatives for biological specimens - vitamin hormone products - pesticide transferred between registered establishments operated by the same producer - a pesticide distributed or sold under an experimental use permit - a pesticide transferred solely for export - a pesticide distributed or sold under an emergency exemption.
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-7. The installation must have a Pest Management Coordinator (AR 420-76, para 2-4e and para 2-8).	Determine whether a person has been designated to coordinate all installation pest management activities. (2) Verify that this person is responsible for preparation of the pest management plan and the collection of the information necessary to prepare the DD Form 1532. (2) Verify that this person oversees performance of pest control contracts. (2)
...	...
9-8. Each Army installation must have a comprehensive Installation Pest Management Plan (IPMP) (AR 420-76, para 2-31, 2-5a, and 3-2a).	Determine whether an IPMP has been prepared. (2)(17) Verify whether all installation activities and satellite sites that perform pest control have been included in the IPMP. Examples include: (2) - Land Management Section - Forestry Section - Fish and Wildlife Section - Golf Course Grounds Maintenance - Grounds Section - Contract Pest Control - Greenhouses - Airfield Management - Clubs. Verify whether the IPMP has been reviewed and approved by the appropriate MACOM Pest Management Consultant (PMC). (2) Verify whether the IPMP has been updated during the past year (yr). (2) (NOTE: A plan is required whether the pest management operations are in-house or contractual.)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-9. The IPMP must address specific issues (DOD Directive 4150.7, para F5 and AR 420-76, para 3-2b, and Appendix C).	Determine whether the IPMP contains a pest control worksheet for each pest control function. (2) Verify whether each pest control worksheet contains: (2) - objectives of control - surveillance on which control is based - control operations to be performed - precautions to be taken in sensitive areas - special health and safety measures required - manpower requirements. Determine whether the IPMP emphasizes integrated pest management procedures rather than spray schedules. (2)
...	...
9-10. DD Form 1532, Pest Management Report, must be submitted monthly or according to MACOM requirements (AR 420-76, para 4-4c(1), 4-4c(3) through 4-4c(5)).	Determine whether the DD Form 1532, which reports pest control operations and pesticide use, is prepared monthly and distributed within 15 days of the reporting period. (2)(17) Verify whether the DD Form 1532 includes all installation pest control operations. (2)(17) Verify whether the DD Form 1532 records surveillance time (engineer, veterinarian, and preventative medicine (PVNTMED)). (2)(17) Verify that a copy of DD Form 1532 is sent to: (2)(17) - MACOM PMC - Installation PVNTMED Officer - USAEHA.
...	...
9-11. Contracts for installation pest control services must be reviewed and approved prior to advertisement for bid (AR 420-76, para 3-12c and d, 4-3a and c, and 4-3k).	Determine whether contracts for pest control services have been approved (preferably in writing) by the MACOM PMC. (2)(17) Verify whether contract pest control services are monitored by a DOD trained and certified Quality Assurance Evaluator (QAE). (2)(17) Verify whether contractor employees are certified (DOD certification is not required) to apply pesticides. (2)(17)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-12. A self-help pest control program must be available for use by housing occupants to control minor infestations of household pests (AR 420-76, para 2-3m and 3-13, and Appendix G).	Determine whether a self-help pest control program has been established. (2)(17) Determine whether housing occupants are required to make a self-help pest control effort before services from the installation pest control services are scheduled. (2)(17) Verify that housing occupants are being trained on the safe and proper use of self-help pesticides. (2)(17) Verify that the pesticides being distributed by self-help have been approved by the MACOM PMC. (2)(17) Verify that records are being maintained of pest control supplies issued and the records are provided to the pest management coordinator once a month (mo) to be included on the DD Form 1532-1. (2)(17)
...	...
9-13. The impact of the installation pest management program must be addressed in the installation Environmental Assessment (EA) or Environmental Impact Statement (EIS) (AR 200-2, para 5-3c and AR 420-76, para 3-8b and 3-10).	Determine whether the current installation EA or EIS addresses pest management operations. (2) Verify whether EAs are on file for pest management operations that: (2) - use a restricted use pesticide - may have the potential to contaminate surface or groundwater - have more than 259 contiguous hectares (640 acres) treated - may affect endangered, threatened, or protected species or their habitat. Verify whether an EA and validation statement have been prepared in accordance with AR 40-574 before the aerial dispersal of pesticides. (2) Verify that if the installation does not have a current EA or EIS, the environmental impacts of pest management operations are being addressed as part of IPMP. (2)
...	...
9-14. Facilities are required to store any pesticide, pesticide container, or pesticide residue according to specific restrictions (AR 420-76, para 4-2a(2) and 4-2a(3)).	Verify that pesticides, pesticide container, and/or pesticide residues are stored so that: (2)(17)(33) - it is not inconsistent with labeling - food or feed contamination does not occur Verify that pesticides or pesticide-related waste generated by the civilian community are not stored or turned in at the installation. (2)(17)(33) (NOTE: These requirements are based on recommendations found in 40 CFR 165.7.)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PESTICIDE APPLICATION	
9-15. Individuals who apply or supervise the application of pesticides are required to be certified under the DOD plan for certification of pesticide applicators(AR 200-1, para 3-1).	Verify that applicators are trained and certified if they: (2)(3)(16)(17)(33) - are full time employees who perform pest management activities at least 25 percent of their on-duty time - apply restricted-use, state licensed, or controlled pesticides. Verify that part-time pesticide applicators (less than 25 percent on-duty time) who do not use restricted use or controlled pesticides are trained in: (2)(3)(16)(17)(33) - the safe efficient, and environmentally sound use of pesticides. - other integrated pest management techniques. Verify that the installation has an appropriate number of certified pesticide applicators required to perform pest management operations at the installation (see Appendix 9-1). (2)(3)(16)(17)(33)
...	...
9-16. Persons applying restricted use pesticides must be certified to apply restricted use pesticides (40 CFR 171.9).	Verify that applicators are trained and/or certified. (2)(3)(16)(17)(33) Verify that training recertification is scheduled and performed as required to maintain certification and that certification is relevant to the pest management activities undertaken. (2)(3)(16)(17)(33) Verify that if contractors are utilized for pest management, they are certified as needed. (2)(3)(16)(17)(33) (NOTE: Appendix 9-2 contains a list of Federal restricted use pesticides.)
...	...
9-17. All government pest control personnel must be participating in a medical surveillance program (AR 40-5, para 10-15).	Determine whether all government pesticide applicators are participating in a medical surveillance program. (2)(3)(17) (NOTE: Contract pesticide applicators should be in a medical surveillance program provided by their employer.) Verify whether the medical surveillance consists of, at a minimum: (2)(3)(17) - annual physical examination - periodic blood cholinesterase tests. (NOTE: This requirement is based on recommendations found in 40 CFR 165.10(e)(2)(vi).)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-18. Personal protective equipment and clothing must be provided, at employer (Army or contractor) expense (DODR 4145.19-1, para 3-415a(1) and 3-415(a)(6) through 3-415(a)(8), AR 11-34, para 3-5b(2), AR 385-32, para 4a, and AR 420-76, para 4-1c).	Determine if a ventilation system is specifically provided for all indoor pesticide mixing/preparation areas. (2)(3)(17) Verify that an emergency deluge shower and eyewash station are located to provide immediate access to all personnel performing mixing. (2)(3)(17) Verify that personal protective clothing and equipment is provided and used by pest management personnel. The following equipment to be used, depends upon magnitude and type of operations: (2)(3)(17) - respirators - masks - gloves - safety shoes - coveralls - specialized personal protective equipment for fumigation. Verify that operations include health and safety procedures emphasizing good work habits, reduction or elimination of hazards, and use of personal protective equipment. (2)(17) Verify that laundering of protective clothing is provided by the installation or employer. (2)(17) Verify that protective clothing and equipment is stored separately from chemical areas. (2)(17) Verify that appropriate/approved respirators are being used when handling and applying pesticides. (2)(17) Verify that respirator cartridge/canisters are changed at appropriate intervals. (2)(17) Verify that a log of respirator cartridge/canister use is maintained. (2)(17) Verify that periodic fit testing of respirators is conducted. (2)(17) Verify that severely contaminated clothing is disposed of as pesticide waste. (2)(17)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-19. Vehicles used for pesticide applications must be dedicated to pest control operations and meet specific design requirements (DODR 4145.19-1, para 3-415a(3) and AR 420-76, para 4-1d and 4-1e(1)).	Determine which vehicles are used for pesticide applications. (17)(33) Verify that vehicles used during pest control operations are single purpose. (17)(33) Verify that pest control vehicles have separate cab and cargo compartments. (17)(33) Verify that lockable storage is provided on the vehicles. (17)(33) Verify that spill cleanup kits are placed on vehicles. (17)(33) Verify that a portable eye wash is available for use on vehicles at remote application sites. (17)(33)
...	...
9-20. Daily pesticide application and surveillance records are required (AR 420-76, para 4-4b).	Verify that DD Form 1532-1 is used to account for daily applications of pesticides. (17)(33)
...	...
9-21. Public safety should be ensured when applying or using pesticides (GMP).	Confirm elimination of hazardous exposure to the general public by checking for the following: (16)(17) - appropriate signs for treatment area are posted - scheduling for low use periods or restricted usage for a number of days - water use restrictions and reentry times are followed according to the pesticide labels.
...	...
9-22. Pesticides for sale in post exchanges and commissaries must meet specific restrictions (AR 40-5, para 10-4h).	Verify that pesticides for sale in post exchanges and commissaries are registered as "General Use" pesticides. (2) Verify that no "Restricted Use" pesticides or pesticides with labels indicating that only professional pest management personnel may use the product are sold in the post exchange or commissary (see Appendix 9-2). (2) Verify that the pesticides are arranged separately on sales display shelves and in storage according to type. (2) Verify that they are segregated from all food products. (2)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
STORE, MIX, OR PREPARE PESTICIDES	
9-23. When pesticides are present in quantities that would be harmful to human health or the environment if a spill were to occur, the pesticide storage and mixing facility must be included in the Spill Prevention Control and Countermeasure Plan (SPCC) (AR 200-1, para 8-4a(2)(d)).	Verify that the SPCC Plan identifies the pesticide storage facility and addresses measures to prevent or minimize impact of a pesticide spill at the facility. (2)(17) Verify that the SPCC Plan includes an inventory of pesticides stored in the pesticide storage facility. (2)(17)
...	...
9-24. Stored pesticides must be addressed in the Installation Spill Contingency Plan (ISCP) (AR 200-1, para 8-5).	Verify that the ISCP addresses procedures and techniques used to contain and clean up a pesticide spill at the pesticide storage facility. (2)(17)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-25. Sites where pesticides are mixed and/or stored must meet specific requirements (AR 420-76, para 4-1b(1)).	Verify that pesticides are mixed and/or stored only in facilities where due regard has been given to the hazardous nature of pesticide, site selection, protective enclosures and operating procedures. (17)(33)
...	...
9-26. Storage facilities for pesticides must meet specific structural and operating requirements (AR 420-76, para 4-1b(2)).	Verify that storage is in a dry, well-ventilated, separate room, building, or covered area where fire protection is provided. (17)(33) Verify that the storage area is protected from freezing temperatures and direct sunlight. (17)(33) Verify that rigid containers are stored in an upright position. (17)(33) Verify that all containers are stored off the ground with labels plainly visible to permit ready access and inspections. (17)(33) Verify that herbicides and insecticides are stored separately with sufficiently safe segregation, with the use of 4 foot aisles, in order to avoid cross-contamination or adverse reactions. (17)(33) Verify that stored pesticides are inspected monthly to determine the condition of the containers. (17)(33)
...	...
9-27. Movable equipment used for handling pesticides must be labeled and handled according to specific requirements (AR 420-76, para 4-1b(3)).	Verify that mobile equipment used for pesticide applications that might be used for other purposes is labeled CONTAMINATED WITH PESTICIDES. (17)(33) Verify that mobile equipment is not removed unless thoroughly decontaminated. (17)(33)
...	...
9-28. Pre-fire plans for pesticide storage areas are required to be updated annually (AR 420-76, para 4-1f).	Verify that the pesticide management coordinator has a pre-fire plan and that it is updated annually. (17)
...	...
9-29. Pesticides in deteriorated or leaking containers will be recontainerized or overpacked in approved containers (AR 240-76, para 4-2c).	Verify that leaking pesticide containers are recontainerized or overpacked to prevent further leakage. (17)(33)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-30. A pesticide spill cleanup kit must be strategically located where pesticides are stored and mixed (AR 420-76, para 4-1e(1)).	Verify that a pesticide spill cleanup kit is available to clean up and detoxify spills in the pesticide storage facility, transportation equipment, mixing areas. (17)(33)
...	...
9-31. Sites where pesticides are stored or mixed must meet specific requirements (AR 420-76, para 4-1b(1)).	Verify that the site location, where possible, is in an area where flooding is unlikely and where hydrogeologic conditions prevents contamination of any water system by runoff or percolation by: (17)(33) - inspecting area surrounding facilities and determine proximity to surface water - noting location relative to floodplains, depth of groundwater, and general soil types and typical permeabilities. Verify that, when needed, drainage from the site is contained by natural or artificial barriers or dikes. (17)(33) (NOTE: These requirements only apply to pesticides or excess pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol.) (NOTE: These requirements are based on recommendations found in 40 CFR 165.10(b).)
...	...
9-32. Storage or mixing facilities for pesticides must meet specific structural requirements (AR 420-76, para 4-1b(1)).	Verify that storage is in a dry, well-ventilated, separate room, building, or covered area where fire protection is provided. (17)(33) Verify that the entire storage facility is secured by a climb-proof fence and doors and gates are kept locked to prevent unauthorized entry. (17)(33) (NOTE: These requirements are based on recommendation found in 40 CFR 165.10(c)(1).) (NOTE: These requirements only apply to pesticides or excess pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol.)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-33. The storage of pesticides must meet specific operational requirements (AR 420-76, para 4-1b(1)).	(NOTE: These requirements only apply to pesticides or excess pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol.) Verify that: (17)(33) - pesticide containers are stored with the label plainly visible - all containers are in good condition - the lids and bungs on metal or rigid plastic containers are tight - the pesticides are segregated and stored under a sign containing the name of the formulation - rigid containers are stored upright and all containers are stored off the ground. Verify that a complete inventory is kept indicating the number and identity of containers in a storage unit. (17)(33) Verify that containers are inspected regularly for corrosion and leaks and that absorbent material is available for spill cleanup. (17)(33) Verify that excess pesticides and their containers are segregated according to the method of disposal. (17)(33) (NOTE: These requirements are based on recommendations found in 40 CFR 165.10(d).)
...	...
9-34. Decontamination facilities are required for personnel at installations which use pesticides (AR 420-76, para 4-1b(1)).	Verify that facilities such as safety shower and eye lavage are available for personnel decontamination. (17)(33) (NOTE: These requirements are based on recommendations found in 40 CFR 165.10(c)(4).) (NOTE: These requirements only apply to pesticides or excess pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol.)
...	...
9-35. Specific decontamination facilities should be available for personnel (GMP).	Verify that a hot shower is available for personnel to use at the end of the day. (17)(33) Verify that change room/locker space is provided for changing to/from protective clothing. (17)(33)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-36. Decontamination facilities are required for equipment at sites where pesticides are used (AR 420-76, para 4-1b(1)).	Verify that facilities are available for the decontamination of equipment, including vehicles which have been used for pesticide applications. (17)(33) Verify that berms, curbing, impervious surfaces and catchment drains which are used to impound washwater resulting from decontamination prevent spillage of washwater. (17)(33) Verify that drains impound washwater and do not connect to sanitary sewer or stormwater systems unless permitted to do so under a National Pollutant Discharge Elimination System (NPDES) permit. (17)(33) Verify that the procedure for disposal of washwater resulting from decontamination activities is the same as for excess pesticides. (17)(33) (NOTE: These requirements are based on recommendations found in 40 CFR 165.10(c)(4).) (NOTE: These requirements only apply to pesticides or excess pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol.)
...	...
9-37. Outdoor sites/facilities used to mix pesticides are required to meet specific parameters (AR 420-76, para 4-1b(1)).	(NOTE: These requirements only apply to pesticides or excess pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol.) Verify that berms, curbing, impervious surfaces are present to contain liquids resulting from accidental spills during mixing operations. (17)(33) Verify that drains do not connect to sanitary sewer or stormwater systems unless permitted to do so under a NPDES permit. (17)(33) Verify that personnel decontamination facilities are available at or near the site. (17)(33)
...	...
9-38. Outdoor mixing sites should meet specific requirements (GMP).	Verify that the outdoor mixing site has a wind screen. (17)(33) Verify that the outdoor mixing site has a frost free elevated water fill pipe. (17)(33)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-39. Facilities where pesticides are stored, used, or mixed are required to follow specific practices and procedures to ensure safety (AR 420-76, para 4-1b(1)).	Verify that no food consumption, drinking, smoking, or tobacco use is undertaken in any area where pesticides are present. (17)(33) Verify the following practices are performed in pest management operations: (17)(33) - persons handling pesticides keep hands away from mouths and eyes and wear rubber gloves during all pesticide handling - persons handling pesticides wash hands immediately upon completion of working with pesticides and always prior to eating, smoking or using toilet facilities - persons handling concentrated pesticides wear protective clothing which is removed if found to be contaminated - persons working regularly with organophosphates and N-alkyl carbamate pesticides have periodic physical examinations, including cholinesterase tests - a stock of protective clothing is available - self-contained breathing apparatus and impermeable suits are available when handling pesticides which can potentially be absorbed through the skin - inspect all containers for leakage prior to handling - do not store next to food or feed or other articles intended for consumption by humans or articles - do not permit unauthorized persons in the storage area. (NOTE: These requirements only apply to pesticides or excess pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol.) (NOTE: These requirements are based on recommendations found in 40 CFR 165.10(e) and 165.10(f).)
...	...
9-40. Pesticide storage or mixing facilities and equipment which contain or use pesticides are required to have signs and safety procedures posted (AR 420-76, para 4-1b(1)).	Verify that signs which read DANGER, POISON, PESTICIDE STORAGE are posted on or near entries to storage facilities. (17)(33) Verify that safety precautions and accident prevention measures are posted. (17)(33) Verify that an inventory of pesticides is displayed outside of the storage facility identifying all chemicals in storage. (17)(33) Verify that mobile equipment used for pesticide applications is labeled CONTAMINATED WITH PESTICIDES. (17)(33) (NOTE: These requirements are based on recommendations found in 40 CFR 165.10(c)(2) through 165.10(c)(3), 165.10(e), and 165.10(g)(2).) (NOTE: These requirements only apply to pesticides or excess pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol.)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-41. Where large quantities of pesticides are being stored, or other conditions warrant, the local fire department, hospitals, public health officials, and police department must be notified in writing that pesticides are being stored in the event of a fire (AR 420-76, para 4-1b(1)).	Verify that notification has been submitted and includes a statement of the hazards that pesticides may present during a fire. (2)(5) Verify that a floor plan of the storage facility indicating the location of the different pesticide classifications has been submitted to the fire department. (5) Verify that the fire chief has the home telephone numbers of the person(s) responsible for the pesticide storage facility. (5) (NOTE: These requirements are based on recommendations found in 40 CFR 165.10(g)(1).) (NOTE: These requirements only apply to pesticides or excess pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol.)
...	...
9-42. Certain precautions are to be taken in the event of a fire at a pesticide storage or mixing areas (AR 420-76, para 4-1b(1)).	Verify that the following procedures are practiced by interviewing the Fire Chief: (5) - fire fighting personnel wear supplied air suits and rubberized clothing - personnel avoids breathing or otherwise contacting toxic smoke and fumes - personnel washes completely as soon as possible after encountering smoke and fumes - the 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 cholinestrase tests after fighting fires involving organophosphate or N-alkyl carbamate pesticides. (NOTE: These requirements are based on recommendations found in 40 CFR 165.10(g)(3).) (NOTE: These requirements only apply to pesticides or excess pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or with the skull and crossbones symbol.)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DISPOSAL	
9-43. Disposal must be initiated for all excess pesticides and strict turn-in procedures followed (DOD Directive 4160.21 M, para VI(B)(77) and AR 420-76, para 4-2b).	Verify that reports have been made to: (16)(17)(33) - MACOM PMC - USAEHA Pesticide Hotline. (NOTE: The best method for disposal of excess pesticides, if not restricted by a suspension or cancellation notice by USEPA, is to use them in accordance with label directions.) Verify that paperwork to turn in excess serviceable pesticides that cannot be used and unserviceable pesticides has been submitted to the installation DRMO and that it is ensured that DRMO has proper storage facilities with adequate space. (2)(16)(17)(33) (NOTE: Pesticides awaiting disposal must be stored in accordance with 40 CFR 165.10. Therefore, DRMO may or may not take physical custody of the pesticides.)
...	...
9-44. Facilities are required to dispose of any pesticide, pesticide container, or pesticide residue according to specific restrictions (AR 420-76, para 4-2a(2) and 4-2a(3)).	Verify that pesticides, pesticide container, and/or pesticide residues are disposed of so that: (2)(17)(33) - it is not inconsistent with labeling - open dumping of pesticides or pesticide containers is not done - open burning is not done except when allowed by state and local regulation - food or feed contamination does not occur - water dumping or ocean dumping does not occur. Verify that pesticides or pesticide-related waste generated by the civilian community are not turned in at the installation. (2)(17)(33) (NOTE: These requirements are based on recommendations found in 40 CFR 165.7.)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-45. Excess spray and rinsewater must be disposed in a manner that does not constitute open dumping (AR 420-76, para 4-2d(1) and AR 40-5, para 10-5c).	Verify that the following procedures are in effect to limit excess finished spray: (17)(33) - proper calculation - mixing only the amount of chemical required for each job. Verify that excess finished spray is not disposed of in the sanitary sewer but is disposed of using one of the following methods: (17)(33) - used in accordance with label directions - disposed of as a pesticide related waste. Verify that container and equipment rinsewater is handled in one of the following ways: (17)(33) - saved for use as diluent in a subsequent spray operation - disposed of as a pesticide related waste. (NOTE: These requirements are based in recommendations found in 40 CFR 165.8 and 165.9.)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-46. Empty pesticide containers must be disposed in a manner that does not constitute open dumping (AR 420-76, para 4-2d).	Verify through interviewing personnel managing pesticides, that empty pesticide containers are: (17)(33) - drained for 1 minute (min) into the spray or mix tank - triple rinsed - rendered unusable (crushed and punctured) - disposed of in an approved landfill - recycled in accordance with label instructions or approved recycling plan. Determine which of the following types of containers the installation has onsite: (17)(33) - Group I Containers: combustible containers which formally contained organic or metallo-organic pesticides - Group II Containers: noncombustible containers which formally held organic or metallo-organic pesticides - Group III Containers: containers (both combustible and noncombustible) which formerly held organic mercury, lead, cadmium, or arsenic or inorganic pesticides. Verify that Group I Containers are disposed of in a pesticide incinerator or buried in a specially designated landfill. (17)(33) Verify that Group II Containers are triple-rinsed and containers not in good condition punctured prior to transport to a recycling facility or disposal. (17)(33) Verify that Group III Containers are triple rinsed and punctured prior to disposal in a sanitary landfill. (17)(33) (NOTE: These requirements are based on recommendations found in 40 CFR 165.8 and 165.9.)
...	...

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

Appendix 9 - 1

Requirements for Installation Pest Management Program

Pest Control Recognized Requirements Man-Hours*	Minimum No. of Certified Full-time Pesticide Applicators Required	Installation Pest Management Plan	Onsite Program Review
Less than 0.25	None unless restricted use pesticides are used or unusally sensitive environmental conditions exist, including endangered species	Individual plan not required; included in supporting installation plan	Requirements established by MACOM PMC
0.25 to 0.49	One	Same as above	Same as above
0.50 to 1.49	One	Individual pest management plans required	Annual or biennial
1.50 to 3.99	Two	Same as above	Same as above
4.00 or More	50 percent of the pest management workforce	Same as above	Same as above

* Multiply the total productive man-years required for the pest management program by a factor of 1.19 to determine the recognized requirement. This factor includes essential time allowance for annual and sick leave, on-the-job training, formal training, mandatory attendance at lectures on safety, security, and fire prevention, and required medical examination.

Appendix 9-2

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.
Acrylonitrile	In combination with carbon tetrachloride. No registrations as the sole active ingredient.	*do	do	Other hazards-accident history of acrylonitrile and carbon tetrachloride products.
Aldicarb	As sole active ingredient.	Ornamental uses (indoor and outdoor).	do	Other hazards-accident history.
	No mixtures registered.	Agricultural crop uses.	Under further evaluation.	
Allyl alcohol	All formulations.	All uses.	Restricted	Acute dermal toxicity.
Aluminum phosphide	As sole active ingredient. No mixtures registered.	do	do	Inhalation hazard to humans.
Azinphos methyl	All liquids with a concentration greater than 13.5%	do	do	do

*_do_ means same as above.

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
	All other formulations.	do	Under further evaluation.	
Calcium cyanide	As sole active ingredient. No mixture registered.	do	Restricted	do
Carbofuran	All concrete suspensions and wettable powders 40% and greater.	do	do	Acute inhalation toxicity.
	All granular formulations.	Rice	Under evaluation.	
	All granular and fertilizer formulations.	All uses except rice.	do	
Chlorfenvinphos	All concentrate solutions or emulsifiable concentrates 21% and greater.	All uses (domestic and non-domestic).	Restricted	Acute dermal toxicity.
Chloropicrin	All formulations greater than 2%.	All uses	Restricted	Acute inhalation toxicity
	All formulations.	Rodent control	Restricted	Hazard to non-target organisms.
	All formulations 2% and less.	Outdoor uses (other than rodent control).	Unclassified	
Clonitralid	All wettable powders 70% and greater.	All uses	do	Acute inhalation toxicity.
	All granulars and wettable powders.	Molluscide uses.	do	Effects on aquatic organisms.
	Pressurized sprays 0.55% and less.	Hospital antiseptics.	Unclassified	

*do means same as above.

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
Cyclo-heximide	All formulations greater than 4%.	All uses.	Restricted	Acute dermal toxicity.
	All formulations 0.027% to 4%	All uses.	Under evaluation.	
	All formulations 0.027% and less.	Domestic uses.	Unclassified	
Demeton	1% fertilizer formulation, 1.985% granular.	All uses, including domestic uses.	Restricted	Domestic uses: Acute oral toxicity Acute dermal toxicity. Nondomestic outdoor uses. Residue effects on avian and mammalian species.
	All granular formulations, emulsifiable concentrates and concentrated solutions.	All uses.	do	Acute dermal toxicity. Residue effects on mammalian and avian species.
Dicrotophos	All liquid formulations 8% and greater.	All uses.	Restricted	Acute dermal toxicity; residue effects on avian species (except for tree injections).
Dioxathion	All concentrate solutions or emulsifiable concentrates[2] greater than 30%.	All uses	Restricted	Acute dermal toxicity.
	Concentrate solutions or emulsi-concentrates[2] 30% and less and wettable powders 25% and less.	Livestock and agricultural uses (nondomestic uses only).	Unclassified	
	All solutions[2] 3% and greater	Domestic	Restricted	do

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
Dioxathion (Continued)	2.5% solutions[2] with toxaphene and malathion.	All uses.	Under evaluation.	
Disulfoton	All emulsifiable concentrates 65% and greater, all emulsifiable concentrates and concentrate solutions 21% and greater with fensulfothion 43% and greater, all emulsifiable concentrates 32% and greater in combination with 32% fensulfothion and greater.	do	Restricted	do Acute inhalation toxicity.
	Nonaqueous solution 95% and greater.	Commercial seed treatment.	Restricted	Acute dermal toxicity.
	Granular formulations 10% and greater.	Indoor uses (greenhouse).	do	Acute inhalation toxicity.
Endrin	All emulsions, dusts, wettable powders, pastes, and granular formulations 2% and above.	All uses.	Restricted.	Acute dermal toxicity. Hazard to nontarget organisms.
	All concentrations less than 2%.	do	do	Hazard to nontarget organisms.

*do means same as above.

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
EPN	All liquid and dry formulations greater than 4%.	All uses.	Restricted	Acute dermal toxicity; acute inhalation toxicity; residue effects on avian species.
		Aquatic uses.	Restricted	Effects on aquatic organisms.
Ethoprop	Emulsifiable concentrates 40% and greater.	do	do	Acute dermal toxicity.
	All granular and fertilizer formulations.	do	Under evaluation.	
Ethyl parathion	All granular and dust formulations greater than 2%, fertilizer formulations, wettable powders, emulsifiable concentrates, concentrated suspensions, concentrated solutions.	do	Restricted	Inhalation hazard to humans. Acute dermal toxicity. Residue effects or mammalian, aquatic, avian species.
	Smoke fumigants.	do	do	Inhalation hazard to humans.
	Dust and granular formulations 2% and below.	do	do	Other hazards-accident history.
Fenamiphos	Emulsifiable concentrates 35% and greater.	do	do	Acute dermal toxicity.

*do means same as above.

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
Fensulfothion	Concentrate solutions 63% and greater, all emulsifiable concentrates and concentrate solutions 43% and greater with disulfoton 21% and greater, all emulsifiable concentrates 32% and greater in combination with disulfoton 32% and greater.	do	Restricted	do Acute inhalation toxicity.
	Granular formulations 10% and greater.	Indoor uses (greenhouse).	do	do
Fluoroacetamide/1081	As sole active ingredient in baits. No mixtures registered.	All uses.	Restricted	Acute oral toxicity.
Fonofos	Emulsifiable concentrates 44% and greater.	All uses.	do	Acute dermal toxicity.
	Emulsifiable concentrates 12.6% and less with pebulate 50.3% and less.	Tobacco	Unclassified	

*do means same as above.

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
Hydrocyanic acid	As sole active ingredient. No mixtures registered.	do	do	Inhalation hazard to humans.
Methamidophos	Liquid formulations 40% and greater.	All uses	Restricted	Acute dermal toxicity; residue effects on avian species.
	Dust formulations 2.5% and greater.	All uses	Restricted	Residue 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	
Methomyl	As sole active ingredient in 1% to 2.5 baits (except 1% fly bait).	Nondomestic outdoor agricultural crops, ornamental and turf. All other registered uses.	Restricted.	Residue effects on mammalian species.
	All concentrated solution formulations.	do	do	Other hazards-accident history.
	90% wettable powder formulations (not in water soluble bags).	do	do	do
	90% wettable powder formulation in water soluble bags.	do	Unclassified	

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
Methomyl (continued)	All granular formulations.	do	do	
	25% wettable powder formulations.	do	do	
	In 1.24% to 2.5% dusts as sole active ingredient and in mixtures with fungicides and chlorinated hydrocarbon, inorganic phosphate and biological insecticides.	do	do	
Methyl bromide	All formulations in containers 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% to chloropicrin as an indicator.	Single applications (nondomestic use) for soil treatment in closed systems.	Unclassified	
	Containers with not more than 1.5 pound (lb) having no indicator.	All uses.	Restricted	do
Methyl parathion	All dust and granular	do	do	Other hazards-accident history.

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
Methyl parathion (continued)	formulations less than 5			All foliar applications restricted based on residue effects on mammalian and avian species.
	Microencapsulated. All dust and granular formulations 5% 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.
Mevinphos	All emulsifiable concentrates and liquid concentrates.	do	do	do
	Psycodid filter fly liquid formulations.	do	do	Acute dermal toxicity.
	2% dusts.	do	do	Residue effects on mammalian and avian species.
Monocrotophos	Liquid formulations 19% and greater.	do	do	Residue effects on avian species. Residue effects on mammalian species.
	Liquid formulations 55% and greater.	do	do	Acute dermal toxicity. Residue effects on avian species. Residue effects on mammalian species.

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
Nicotine (alkaloid)	Liquid and dry formulations 14% and above.	Indoor (greenhouse)	Restricted	Acute inhalation toxicity.
	All formulations.	Applications to cranberries	Restricted	Effects on aquatic organisms.
Nicotine (alkaloid) (Continued)	Liquid and dry formulations 1.5% and less.	All uses (domestic and non-domestic).	Unclassified	
Paraquat (dichloride) and paraquat bis(methyl sulfate)	All formulations and concentrations except those listed below.	All uses.	Restricted	Other hazards. Use and accident history, human toxicological data.
	Pressurized spray formulations containing 0.44% Paraquat bis(methyl sulfate) and 15% petroleum distillates as active ingredients:	Spot weed and grass control.	do	
	Liquid fertilizers containing concentrations of 0.025% paraquat dichloride and 0.03 percent atrazine; 0.03% paraquat dichloride and 0.37% atrazine, 0.04 % paraquat dichloride and 0.49% atrazine.	All uses.	Unclassified	

*_do_ means same as above.

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
Phorate	Liquid formulations 65% 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 application only).
	All granular formulations.	Rice	Restricted	Effects on aquatic organisms.
Phosacetim	Baits 0.1% and greater.	All uses.	Restricted	Hazard to non-target species. Residues effects on mammalian species. Residue effects on avian species.
Phosphamidon	Liquid formulations 75% and greater.	do	do	Acute dermal toxicity. Residue effects on mammalian species. Residue effects on avian species.
	Dust formulations 1.5% and greater.	do	do	Residue effects on mammalian species.

**do* means same as above.

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
Picloram	All formulations and concentrations except tordon 101R.	do	do	Hazard to nontarget organisms (specifically nontarget plants both crop and noncrop).
	Tordon 101 R forestry herbicide containing 5.4% picloram and 20.9 % 2,4-D.	Control of unwanted trees by cut surface treatment.	Unclassified	
Sodium cyanide[3]	All capsules and ball formulations.	All uses.	Restricted	Inhalation hazard to humans.
Sodium fluoroacetate	All solutions and dry baits.	do	do	Acute oral toxicity. Hazard to nontarget organisms. Use and accident history.
Strychnine	All dry baits, pellets and powder formulations greater than 0.5%	do	do	Acute oral toxicity. Hazard to nontarget avain species. Use and accident history.
	All dry baits, pellets and powder formulations.	All uses calling for burrow builders.	do	Hazard to nontarget organisms.
	All dry baits, and pellets and powder formulations 0.5% and below.	All uses except subsoil.	do	do
	do	All subsoil uses.	Unclassified	do

*do means same as above.

Active Ingredient	Formulation	Use Pattern	Classification[1]	Criteria Influencing Restriction
Sulfotepp	Sprays and smoke generators.	All uses.	Restricted	Inhalation hazard to humans.
Tepp	Emulsifiable concentrate formulations.	do	do	Inhalation hazard to humans. Dermal hazard to humans. Residue effects on mammalian and avian species.
Zinc Phosphide	All formulations 2% and less.	All domestic uses and nondomestic uses in and around buildings.	Unclassified	
	All dry formulations 60% and greater.	All uses.	Restricted	Acute inhalation toxicity.
	All bait formulations	Nondomestic outdoor uses (other than around buildings).	Restricted	Hazard to nontarget organisms.
	All dry formulations 10% and greater.	Domestic uses.	Restricted	Acute oral toxicity.

*do means same as above.

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.

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

INSTALLATION:	COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (5) Fire Department (16) Building and Grounds Division (DEH) (17) Entomology Shop (DEH) (22) Staff Judge Advocate (33) Golf Course Pesticide Shop

Section 10

NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES

SECTION 10

NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES

A. Applicability of this Protocol

This protocol integrates the requirements of Federal laws and regulations dealing with historic properties, including historic and prehistoric districts, sites, buildings, structures, and objects, into a single document that applies to all installations.

B. Federal Legislation

- *Antiquities Act of 1906.* Within this Act, 16 U.S. Code (USC) 431-433, the President of the United States is authorized to declare historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated on land owned or controlled by the Federal government to be national monuments (16 USC 431). Permits for examining ruins, excavating archaeological sites, and gathering objects of antiquity may be granted by the Secretaries of the Interior, Agriculture, and Army for land under their respective jurisdictions, to institutions that they may deem properly qualified to conduct such examining, excavating, or gathering, subject to such rules and regulations as they may prescribe (16 USC 432).

- *The Historic Sites Act of 1935* (Public Law (PL) 74-292; 16 USC 470-470w-6) authorizes the designation of national historic sites and landmarks, authorizes interagency efforts to preserve historic resources.

- *The National Historic Preservation Act of 1966*, 16 USC 470-470w-6, last amended in October 1992, addresses the issue of preserving our national history. The Congress declared that the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development and that the preservation of this irreplaceable heritage is in the public interest so that its vital legacy of cultural, educational, aesthetic, inspirational, economic, and energy producing benefits will be maintained and enriched for future generations of Americans (16 USC 470(b)(2)(4)).

The policy of the Federal government is to (16 USC 470-1):

- use measures, including financial and technical assistance, to foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations
- provide leadership in the preservation of the prehistoric and historic resources of the United States and the international community of nations
- administer Federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations
- contribute to the preservation of non-Federally owned prehistoric and historic resources and give maximum encouragement to organizations and individuals undertaking preservation by private means
- encourage the public and private preservation and utilization of all usable elements of the Nation's historic built environment
- assist state and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

- *The National Environmental Policy Act (NEPA) of 1970.* The purpose of this Act, 42 USC 4321-4370c, as last amended in November 1990, was to declare a national policy that would encourage productive and enjoyable harmony between humans and their environment. Additionally, it provides for the promotion of efforts that prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humans (42 USC 4321).

  Under the NEPA, the continuing policy of the Federal government is to use all practicable means and measures in a manner calculated to foster and promote the general welfare, and to create and maintain conditions under which humans and nature can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations of Americans (42 USC 4331(a)). It is the continuing responsibility of the Federal government to use practicable means and resources to preserve important historical, cultural, and natural aspects of our national heritage (42 USC 4331(b)(4)).

- Executive Order (EO) 11593, *Protection and Enhancement of the Cultural Environment*, 13 May 1971 (reprinted as a note at 16 USC 470), directs Federal agencies to: provide leadership in preserving, restoring, and maintaining the historic and cultural environment of the Nation; ensure the preservation of cultural resources; locate, inventory, and nominate to the National Register all properties under their control that meet the criteria for nomination; and ensure that cultural resources are not inadvertently damaged, destroyed, or transferred before the completion of inventories and evaluation for the National Register.

- *The Historical and Archeological Data-Preservation Act* (PL 93-291; 16 USC 469-469c) directs Federal agencies to notify the Secretary of the Interior when they find that any Federal construction project or Federally licensed activity or program may cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archaeological data. It also provides for funding historical and archaeological protection for such projects.

- *The Public Buildings Cooperative Use Act of 1976*, 40 USC 490, 601 note, et seq., was last amended in November 1988. Under this Act, the Administrator of General Services must, among other duties, acquire and use space in suitable buildings of historical, architectural, or cultural significance, unless use of such space would not prove feasible and prudent compared with available alternatives (40 USC 601a(a)(1)).

  Whenever the Administrator of General Services takes a survey of the public buildings needs of the Federal government within a geographical area, he or she must request that, within 60 days, the Advisory Council on Historic Preservation identify any existing buildings within such geographical area that

  1. are of historical, architectural, or cultural significance
  2. would be suitable, whether or not in need of repair, alteration, or addition, for acquisition or purchase to meet the public buildings needs of the Federal government (40 USC 611(c)).

- *The American Indian Religious Freedom Act of 1978* (PL 95-341; 42 USC 1996) states the policy of the United States to protect and preserve, for American Indians, their inherent rights of freedom to believe, express, and exercise the traditional religions of American Indians, Eskimos, Aleuts, and native Hawaiians. These rights include, but are not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremony and traditional rites.

- *The Archaeological Resources Protection Act (ARPA) of 1979*. 16 USC 470aa-470mm, was last amended in October 1988. The purpose of this Act is to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites that are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained before 19 October 1979 (16 USC 470aa(b)).

- *The Native American Graves Protection and Repatriation Act of October 1990*, 25 USC 3001-3013, permits the intentional removal from or excavation of Native American cultural items from Federal or tribal lands for purposes of discovery, study, or removal of such items only if (25 USC 3002 (c)):

  - such items are excavated or removed pursuant to a permit issued that is consistent with this Act
  - such items are excavated or removed after consultation with or, in the case of tribal lands, consent of the appropriate (if any) Indian tribe or Native Hawaiian organization
  - the ownership and right of control of the disposition of such items is as provided in subsections A. and B. of this section
  - proof of consultation or consent under paragraph 2. is shown.

  Each Federal agency and museum that has possession or control over holdings or collections of Native American human remains and associated funerary objects must compile an inventory of such items and, to the extent possible based on information processed by such museum or federal agency, identify the geographical and cultural affiliation of such items (25 USC 3003(a)).

  Each Federal agency or museum that has possession or control over holdings or objects of Native American unassociated funerary objects, sacred objects, or objects of cultural patrimony must provide a written summary of such objects based on available information held by such agency or museum. The summary must describe the scope of the collection, kinds of objects included, reference to geographical location, means and period of acquisition, and cultural affiliation, where readily ascertainable.

  The Federal agency or museum, upon the request of a designated Native American party, must expeditiously return the remains and associated funerary objects and other objects if:

  - the cultural affiliation of Native American human remains and associated funerary objects with a particular Indian tribe or Native Hawaiian organization is established under this Act, or
  - the cultural affiliation with a particular Indian tribe or Native Hawaiian organization is shown with respect to unassociated funerary objects, sacred objects, or objects of cultural patrimony under this Act.

C. State/Local Requirements

Army policy is to cooperate with the states to the maximum extent possible.

- The State Historic Preservation Officer (SHPO) is an important participant in Federal agency compliance with the NHPA, and an important source of technical advice. The SHPO must be consulted during review of installation undertakings under Section 106 of the Act.

D. Department of Defense (DOD) Regulations

- DOD Directive 4710.1, *Archaeological and Historic Resources Management*, 21 June 1984, provides policy, prescribes procedures, and assigns responsibilities for the management of archaeological and historic resources located in and on water and land under DOD control. It establishes the policy that DOD components will integrate the archaeological and historical preservation requirements of applicable laws with the planning and management of activities under DOD control.

E. U.S. Army Regulations (ARs)

- AR 420-40, *Historic Preservation*, provides policy and regulatory guidance on historic preservation. It establishes the Army's goals to protect buildings, structures, sites, and objects of historical, architectural, archaeological, or cultural value located on Army-controlled property, as required by the NHPA, ARPA, and other laws. It contains definitions of pertinent terms and descriptions of compliance procedures.

F. Key Compliance Requirements

- Historic Preservation - Army installations are required to protect, rehabilitate, and maintain culturally significant properties and to locate, inventory, and nominate to the Secretary of the Interior all properties under their ownership or control that appear to qualify for listing on the National Register of Historic Places. They must consider effects of their actions on eligible properties and consult with the SHPO and Advisory Council. Installations with such properties must also develop a historic preservation plan that ensures compliance with these responsibilities.

- Archaeological Resources - Army installations must protect all archaeological resources. No archaeological resource on Federal land, including pottery, dwellings, and other artifacts, can be removed, excavated, damaged, or disturbed without an archaeological permit.

- Native American Rights - Army installations must recognize the rights of Native Americans to have access to sites and objects of religious significance and to practice traditional religious ceremonies and rites. Native American groups have the right to the return of cultural items found on Federal property or maintained by Federal agencies. The groups also must be notified in the event of any discoveries of such cultural items.

G. Responsibility for Compliance

- The Installation Commander (IC) is responsible for funding historic preservation programs through the Command Operating Budget (COB).

- The Directorate Engineering and Housing (DEH) is responsible for supervising, controlling, and managing installation historic preservation programs.

- The Installation Historic Preservation Officer (IHPO) is responsible for implementing the historic preservation program, training installation personnel, and locating, inventorying, and evaluating installation cultural resources. Along with the State Historic Preservation Officer (SHPO), the IHPO negotiates the Memoranda of Agreement (MOA) with the SHPO, which contain detailed descriptions ("programmatics") of specific preservation actions, and ensures that all provisions of the agreement are met.

H. Key Compliance Definitions

These definitions were obtained from regulations cited previously in this protocol.

- *Advisory Council on Historic Preservation (ACHP)* - the Council established by Title II of the NHPA to advise the President and Congress, to encourage private and public interest in historic preservation, and to comment on Federal agency action under Section 106 of the NHPA (36 Code of Federal Regulations (CFR) 65.3 and Section 201(a) of PL 94-422, Title II).

- *Archaeological Resource* - any material remains of past life or activities that are of archaeological interest. 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 or piece of any kind of the foregoing items (16 USC 470bb).

- *Area of Potential Effects (APE)* - the geographical area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist (36 CFR 800.2(c)).

- *Associated Funerary Objects* - objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later, and both the human remains and associated funerary objects are presently in the possession or control of a Federal agency or museum, except for other items exclusively made for burial purposes or to contain human remains shall be considered as associated funerary objects (PL 101-601, Section 2).

- *Associated Records* - original records (or copies thereof) that are prepared, and assembled and document efforts to locate, evaluate, record, study, preserve, or recover a prehistoric or historic resource (36 CFR 79.4).

- *Building* - a structure created to shelter any form of human activity, such as a house, barn, church, hotel, or similar structure. Building may refer to a historically related complex such as a courthouse and jail, or a house and barn (36 CFR 60.3).

- *Burial Site* - any natural or prepared physical location, whether originally below, on, or above the surface of the earth, into which as a part of the death rite or ceremony of a culture, individual human remains are deposited (PL 101-601, Section 2).

- *Collection* - material remains that are excavated or removed during a survey, excavation, or other study of a prehistoric or historic resource and associated records that are prepared or assembled in connection with the survey, excavation, or other study (36 CFR 79.4).

- *Cultural Affiliation* - a relationship of shared group beliefs that can be reasonably traced historically or prehistorically between a present day Indian tribe or Native Hawaiian organization and an identifiable earlier group (PL 101-601, Section 2).

- *Cultural Items* - associated and unassociated funerary objects, sacred objects, and cultural patrimony (PL 101-106, Section 2(3)(a-d)).

- *Cultural Patrimony* - an object having ongoing historical, traditional, or cultural importance central to the Native American group or culture itself, rather than

property owned by an individual Native American, and that, therefore, cannot be alienated, appropriated, or conveyed by any individual regardless of whether or not the individual is a member of the Indian tribe or Native Hawaiian organization (PL 101-601, Section 2).

- *Curatorial Service* - managing and preserving a collection according to professional museum and archival practices (36 CFR 79.4).

- *Determination of Eligibility* - a decision by the Department of the Interior that a district, site, building, structure, or object meets the National Register criteria for evaluation, even though the property is not formally listed in the National Register (36 CFR 60.3).

- *District* - a geographically definable area, urban or rural, that possesses a significant concentration, linkage, or continuity of sites, structures, buildings, or objects united by past events or aesthetically by plan or physical development. A district may also compromise individual elements separated geographically but linked by association or history (36 CFR 60.3).

- *Endangered Property* - a historic property that is or is about to be subjected to a major impact that will destroy or seriously damage the qualities of significance that make it eligible for National Historic Landmark or National Register of Historic Places designation (36 CFR 65.3).

- *Federal Agency Official* - any officer, employee, or agent officially representing the secretary of the department or the head of any other agency or instrumentality of the United States and having primary management authority over a collection that is subject to 36 CFR 79 (36 CFR 79.4).

- *Federal Lands* - any land, other than tribal land, that is controlled or owned by the United States, including land selected by, but not yet conveyed to, Alaska Native Corporations and groups pursuant to the Alaska Native Claims Settlement Act of 1971 (PL 101-601, Section 2).

- *Federal Preservation Officer* - the person responsible for coordinating the agency's activities under the National Historic Preservation Act and EO 11593, including nominating properties under the agency's ownership or control to the National Register (36 CFR 60.3).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures and stewardship.

- *Historic Preservation* - identification, evaluation, documentation, curation, acquisition, protection, rehabilitation, restoration, management, stabilization, maintenance, recording, and reconstruction of cultural resources, and any combination of the foregoing (16 USC 470w(8)).

- *Historic Property* - any prehistoric or historic district, site, building, structure, or object included in, or eligible for, inclusion on the National Register. The term includes artifacts, records, and material remains related to such a property (16 USC 470w(5)).

- *Indian Lands* - all lands under the jurisdiction or control of an Indian tribe (36 CFR 800.2).

- *Indian Tribe or Tribe* - an Indian Tribe, band, nation, or other organized group or community including a Native village, Regional corporation or Village Corporation as those terms are defined in section 3 of the Alaska Native Claims Settlement Act (42 USC 1602), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians (NHPA, Section 301(4)).

- *Inventory* - an itemized list of human remains and funerary objects along with their geographical and cultural affiliations (PL 101-601, Section 5(a) and (e)).

- *Landmark* - a National Historic Landmark is a district, site, building, structure, or object, in public or private ownership, judged by the Secretary to possess national significance in American history, archaeology, architecture, engineering, and culture, and so designated by the Secretary (36 CFR 65.3).

- *Material Remains* - artifacts, objects, specimens, and other physical evidence that are excavated or removed in connection with efforts to locate, evaluate, document, study, preserve or recover a prehistoric or historic resource. Classes of material remains that may be in a collection include, but are not limited to: (36 CFR 79.4)
  - components of structures and features (such as houses, mills, piers, fortifications, earthworks, and mounds)
  - intact or fragmentary artifacts of human manufacture
  - intact or fragmentary natural objects used by humans (such as rock crystals, feathers, and pigments)
  - byproducts, waste products, or debris resulting from manufacture or use of manmade or natural materials
  - organic waste (such as vegetable and animal remains)
  - human remains
  - components of petroglyphs, pictographs, intaglios, or other works of artistic or symbolic representation
  - environmental and chronometric specimens remains

- components of shipwrecks
- paleontological specimens found in direct physical relationship with a prehistoric or historic resource.

• *Museum* - any institution or state or local government agency (including any institution of higher learning) that received Federal funds and has possession of, or control over, Native American cultural items. Such term does not include the Smithsonian Institution or any other Federal agency (PL 101-601, Section 2).

• *National Historic Landmarks Program* - the program that identifies, designates, recognizes, lists, and monitors National Historic Landmarks and is conducted by the Secretary through the National Park Service (36 CFR 65.3).

• *National Park Service* - the bureau of the Department of the Interior to which the Secretary of the Interior has delegated the authority and responsibility for administering the National Register program (36 CFR 60.3(h)).

• *National Register of Historic Places* - the listing of districts, sites, buildings, structures, and objects of national, state, or local significance in American history, architecture, archaeology, or culture that is maintained by the Secretary of the Interior (Keeper of the Register) (36 CFR 65.3).

• *Native American* - of, or relating to, a tribe, people, or culture that is indigenous to the United States (PL 101-601, Section 2).

• *Native Hawaiian* - any individual who is a descendent of the aboriginal people who, before 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawaii (PL 101-601, Section 2).

• *Nominate* - to complete and submit National Park Service forms proposing that a resource be included in the National Register. Nominations can be made for individual resources, multiple resources, or thematic groups (36 CFR 60.4).

• *Preservation* - identification, evaluation, recordation, documentation, curation, acquisition, protection management, rehabilitation, restoration, stabilization, maintenance, and reconstruction of any constituents of the foregoing activities (16 USC 470W).

• *Property* - a site, building, object, structure, or collection of such items that forms a district (36 CFR 65.3).

• *Public Lands* - lands owned and administered by the United States, including the national park system, national wildlife refuge system, and national forest sys-

tem. Additional public lands are those whose fee title is held by the United States, the Outer Continental Shelf, and lands under the jurisdiction of the Smithsonian Institute (PL 96-95, Section 3(3)).

- *Qualified Museum Professional* - a person who possesses knowledge, experience, and demonstrable competence in museum methods and techniques appropriate to the nature and content of the collection under the person's management and care commensurate with the person's duties and responsibilities (36 CFR 79.4).

- *Religious Remains* - material remains that the Federal Agency Official has determined are of traditional, religious, or sacred importance to an Indian tribe or other group because of customary use in religious rituals or spiritual activities. This determination is made in consultation with appropriate Indian tribes or other groups (36 CFR 79.4).

- *Repository* - a facility such as a museum, archaeological center, laboratory or storage facility managed by a university, college, museum, other educational or scientific institution, a Federal, state, or local government agency, or an Indian tribe that can provide professional, systematic, and accountable curatorial services on a long-term basis (36 CFR 79.4).

- *Restoration* - the act or process of accurately recovering the form and details of property and its setting as it appeared at a particular period of time by means of the removal of later work or by the replacement of missing earlier work (36 CFR 68.2).

- *Sacred Object* - specific ceremonial objects that are needed by traditional Native American religious leaders for the practice of their traditional Native American religions by their present adherents (PL 101-601, Section 2).

- *Section 106 Consultation* - a compliance procedure in which an agency requests the comments of the SHPO and/or the Advisory Council on Historic Preservation when an undertaking may affect a property on, or eligible for, the National Register (36 CFR 800.3 through 800.9).

- *Significant* - having a characteristic that makes a property eligible for listing on the National Register (DOD Directive 4710.0).

- *State Historic Preservation Officer (SHPO)* - the official, appointed pursuant to USC 470a(b)(1), who is responsible for administering the NHPA within a state or jurisdiction (36 CFR 60.3).

- *Tribal Official* - the chief executive officer or any officer employee or agent officially representing the Indian tribe (36 CFR 79.4).

- *Unassociated Funerary Objects* - objects that, as a part of the death rites or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later, where the remains are not in the possession or control of the Federal agency or museum and the objects can be identified by a preponderance of the evidence, as related to specific individuals or families or to known human remains, or by a preponderance of the evidence, as having been removed from a specific burial site of an individual culturally affiliated with a particular Indian tribe (PL 101-601, Section 2).

- *Undertaking* - a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal Agency, including:
  - those carried out by or on behalf of the agency
  - those carried out with Federal financial assistance
  - those requiring a Federal permit, license or approval, and
  - those subject to state or local regulation administered pursuant to a delegation of approval by a Federal agency (NHPA, Section 301(7)).

NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All Installations	10-1 through 10-5	(1)(2)
NHPA Section 110	10-6	(1)(2)
NHPA Section 106	10-7 through 10-10	(1)(2)
Archaeological Resources Protection Act (ARPA)	10-11	(1)(2)
Native American Protection and Repatriation Act	10-12 and 10-13	(1)(2)
Curation of Federally Owned and Administrated Archaeological Collections	10-14	(1)(2)
American Indian Religious Freedom Act	10-15	(1)(2)
Records Management and Administration	10-16	(1)(2)
NHPA/NHPA	10-17	(1)(2)
AR 420-40	10-18	(1)(2)

(a) CONTACT/LOCATION CODE:

(1) Directorate Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)

NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES

Plans and Maps to Review

- Installation Master Plan
- Historic Preservation Plan
- Archaeological site forms and maps
- NEPA mitigation plans

Records to Review

- For construction (including maintenance, demolition, rehabilitation, etc.) activities: documentation of finding of no adverse effect, finding of adverse effect, Memorandum of Agreement (MOA) with the SHPO, or requests for comment when there is no agreement on historic properties.
- Nominations to National Register
- Correspondence with SHPO for consensus determinations of eligibility; determinations of no effect, effect, no adverse effect, and adverse effect
- Standard Operating Procedures (SOPs) for ensuring compliance
- MOA and Programmatic Memoranda
- ARPA permits
- Curation inventories and bailment agreements
- Inventory of historic properties
- Cultural resources reports, contracts, and scopes of work

Physical Features to Examine

- Sites of historic, archaeological, or Native American interest (designation, protection, and interpretation)
- Repositories of archaeological records and collections
- Buildings and structures of potential historical significance (national, state, or local)

People to Interview

- Installation Historic Preservation Officer (IHPO)
- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Director of Plans, Training, Mobilization, and Security (DPTMSEC)
- Public Affairs Office (PAO)
- Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
10-1. Determine actions or changes since previous review (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. Check accuracy of previous review report. (1)(2)
...	...
10-2. Installations should maintain a current file of applicable Federal, DOD, U.S. Army, ARNG, and state and local regulations for cultural resources management (GMP).	Verify that the following documents, which are applicable, are maintained and kept current at the installation: (1)(2) - 32 CFR 229, *Protection of Archaeological Resources: Uniform Regulations.* - 36 CFR 79, *Curation of Federally-owned and Administered Archeological Collections.* - 36 CFR 800, *Protection of Historic and Cultural Properties.* - 36 CFR 1222-1238, *Records Management.* - AR 420-40, *Historic Preservation.* - PL 101-601 - 16 USC 470ii - 25 USC 3001 - *National Environmental Policy Act (NEPA).* - *National Historic Preservation Act (NHPA).* - Applicable state and local regulations.
...	...
10-3. Installations should comply with applicable state and local requirements (GMP).	Verify that the installation is complying with state and local requirements. (1)(2) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2) (NOTE: Issues which are typically regulated by state and local agencies include: - designation of state historic sites - protection of state historic sites.)
...	...

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2) Verify that the existing system addresses the issues associated with historic and cultural resources by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)
...	...
10-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning historic and cultural resources have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

NHPA Section 110
 	
10-6. Unless exempted, facility must have a program for the identification, evaluation, nomination to the National Register of Historic Places, and protection of historic properties (NHPA 110(a)(2)).
 	
...
	Verify that the facility has either: (1)(2)
	
	- written notification from DA Headquarters (through ENVR (Con)) that it has been exempted from this requirement by the Advisory Council on Historic Preservation (ACHP) pursuant to Section 214 of the *NHPA*
	- a Historic Preservation or Cultural Resource Management Officer or Coordinator (HPO) officially designated in writing by the commander (may be an additional duty assignment, but HPO should be assigned to devote at least 10 percent of his or her work time to HPO duties)
	  - a written position description for the HPO
	  - a written performance elements and standards for the HPO
	  - written evidence that within the last 3 years (yr) the HPO and/or personnel reporting to the HPO have successfully completed at least one training class in Cultural Resource Management
	  - a written description of its *NHPA* 110(a)(2) program, with written justification for each work element and allocation of personnel and other assets
	  - personnel and other assets assigned to the program in accordance with the written description.
	
	...

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

NHPA Section 106
 	
10-7. The facility must identify historic properties potentially affected by its undertakings (36 CFR 800.4).
	Verify that the facility has either: (1)(2)
	
	- written notification from DA Headquarters (through ENVR (Con)) that it has been exempted from Section 106 requirements by the ACHP pursuant to Section 214 of the *NHPA*
	- planned, initiated, conducted, continued, permitted, or participated in no actions that could result in the modification of land or buildings, or have visual, auditory, or atmospheric effects on any land or buildings, regardless of their ownership or historical significance
	- in place a Historic Preservation or Cultural Resource Management Plan (CRMP) approved by the SHPO and ACHP that excuses it from the below requirement in any or all cases (in which case see 10-17).
	
	Verify that the facility has the following: (1)(2)
	
	- for each of the actions included in the sample of action files inspected:
	  - a written determination by the HPO that the action is not an undertaking subject to review under Section 106 of the *NHPA* because it either is not under the direct or indirect jurisdiction of a Federal Agency or because it has no potential to affect historic properties
	  - a written or graphically depicted area of potential effects (APE), including all alternative sites of the undertaking and all areas where the undertaking, at each alternative site, could have physical, visual, audible or atmospheric effects on historic properties if any such properties exist in such areas and either
	  - written certification by the HPO that the APE has been determined, in accordance with the Secretary of the Interior's *Standards and Guidelines for Identification*, to contain no historic properties, and written evidence that this certification and any supporting documents have been provided to the SHPO and the SHPO has not objected to the certification
	  - a written description of the effort undertaken, in accordance with 36 CFR 800.4(a) through (c) to identify historic properties in the APE, together with a description of each such property, with written evidence that this documentation has been provided to the SHPO, and that:

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-7. (continued)	- no properties included in, or that might be eligible for, the National Register of Historic Places (Register) were identified, that the SHPO was so notified, and did not object within 30 days of notification - properties included in the Register were identified, and that the SHPO was so notified - properties that might be eligible for the Register were identified, and were evaluated in consultation with the SHPO in accordance with 36 CFR 800.4(c).
...	...
10-8. The facility must determine what effects (if any) each of its undertakings may have on historic properties, and commit to resolve any effects that are adverse (36 CFR 800.5).	If the sample of actions reviewed includes undertakings in whose APEs historic properties were identified (See 10-7), verify that the facility in each case: (1)(2) - applied the Criteria of Effect (36 CFR 800.9(a)) and made a determination of effect in accordance with 36 CFR 800.5(a), as evidenced by correspondence with the SHPO documenting the facility's determination that the Criteria either are or are not met - if the undertaking would have an effect, supplied the Criteria of Adverse Effect (36 CFR 800.9(b)-(c)) in accordance with 36 CFR 800.5(c) and made a determination of adverse effect or no adverse effect, as evidenced by a letter transmitting a determination of no adverse effect to the ACHP in accordance with 36 CFR 800.5(d) or by a letter notifying the ACHP of adverse effect in accordance with 36 CFR 800.5(e).
...	...

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-9. The facility must consult with the SHPO and others to resolve adverse effects of undertakings on historic properties, execute an MOA if agreement is reached (36 CFR 800.5(e)(4)), and seek the comments of the ACHP if agreement is not reached (36 CFR 800.5(e)(6)).	Verify that either: (1)(2) - no undertaking with which the facility has been involved has been determined to have an adverse effect on an historic property, either by the Facility or as the result of objection by the SHPO or ACHP - for each undertaking that was determined to have an adverse effect on a historic property, the Facility carried out (or is carrying out) consultation with the SHPO and other interested persons, as evidenced by correspondence, public notices, and other documents generated during consultation, and: - executed (or is in the process of executing) an MOA with the SHPO, ACHP and other interested persons in accordance with 36 CFR 800.5(d)(4), as evidenced by draft and/or final MOAs - upon termination of consultation pursuant to 36 CFR 800.5(e)(6) by the SHPO or ACHP, referred the matter to Headquarter, Department of the Army (HQDA) (ENVR (Con)) for resolution, as evidenced by a referral memorandum - upon concluding that further consultation would not be productive, referred the matter to HQDA (ENVR (Con)) through the Major Command (MACOM) for a determination as to whether the Army should terminate consultation pursuant to 36 CFR 800.5(e)(6), as evidenced by a referral memorandum.
...	...
10-10. The facility must implement MOAs it has executed (36 CFR 800.6(c)(1)).	If the facility has executed any MOAs, verify that they have been implemented, as evidenced by contracts, plans and specifications, or other documentation or by visual inspection. (1)(2)
...	...

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

ARCHAEOLOGICAL RESOURCES PROTECTION ACT (ARPA)
 	
10-11. The facility must regulate the excavation of archeological sites on Federal lands under its jurisdiction (16 USC 470ii and 32 CFR 229).
 	
...
	Verify that the facility has either: (1)(2)
	
	- jurisdiction over no land that might contain archeological sites, as evidenced by certification to this effect by DA Headquarters (ENVR (Con)), concurred in by the SHPO
	- a program to identify and inventory archeological sites, as evidenced by survey reports, inventory files, and related documents, such as:
	  - a copy of 32 CFR 229 on file
	  - written evidence that the commander has charged military police, game wardens, and/or other law enforcement personnel with enforcement of 16 USC 470ii
	  - written evidence that within the last 5 yr the HPO and/or personnel reporting to the HPO, and/or military police, game wardens, and/or other law enforcement personnel have successfully completed at least one training class pertaining to cultural resource protection.
	
	Verify that the facility has either: (1)(2)
	
	- received no applications during the last year for permits to excavate archeological sites
	- processed any such applications, and administered any such permits, in accordance with 32 CFR 229 as evidenced by files containing completed permit applications meeting the requirements of 32 CFR 229.6, copies of notifications to Indian tribes where applicable pursuant to 32 CFR 229.7, permits containing terms and conditions consistent with 32 CFR 229.9, and where a permit has been in effect for 1 yr or more, the written results of an annual or more frequent performance review by the facility pursuant to 32 CFR 229.9(g).
	
	...

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT	
10-12. The facility must prepare an inventory and summary of any collections of Native American artifacts that it manages or that are managed by others (except the Smithsonian Institution) on its behalf, and give related Native American groups the opportunity to claim and have repatriated Native American cultural items related to such groups (*Native American Graves Protection and Repatriation Act of 1990* (PL 101-601), Sections 5 and 6).	Verify that the facility has either: (1)(2) - a written statement signed by the commander that it maintains no collections of Native American artifacts, and has no contracts, cooperative agreements, or other arrangements, formal or informal, under which other parties (i.e., museums) maintain such collections - completed a summary of any unassociated funerary objects, sacred objects, and cultural patrimony as defined at 25 USC 3001 in each collection - initiated an inventory of any such collection, and scheduled it to be complete by October 1995, to identify Native American human remains and associated funerary objects as defined at 25 USC 3001, as evidenced by relevant directions, memoranda, or other action documents - has initiated consultation with potentially affected Native American groups about ownership and repatriation of such Native American cultural items, as evidenced by notices, memoranda, minutes of meetings, and correspondence.
...	...
10-13. The facility must consult with appropriate Native American groups in the issuance of permits for archeological excavations, and must halt work and engage in other activities in the event a Native American cultural item is discovered during construction, land use, or other activities (Native American Graves Protection and Repatriation Act (PL 101-601) Section 3).	Verify that the facility has either: (1)(2) - permitted the excavation or removal of no archeological sites thought to contain Native American cultural items during the last year - permitted such excavation or removal in accordance with its program to implement the *ARPA*, and has consulted with appropriate Indian or Native Hawaiian groups in the issuance of any permit, as evidenced by memoranda, minutes of meetings, and correspondence in the permit files - included in any permit issued for the excavation or removal of Native American cultural items the provision that the ownership and right of control of the disposition of such items shall be as provided in subsections 3(a) and (b) of the Native American Graves Protection and Repatriation Act, as evidenced by appropriate language in permit documents - not experienced the inadvertent discovery of Native American cultural items during any of its activities or the activities of any tenant, contractor, permit holder, easement holder, dependent, or visitor - assured that activities in the vicinity of any such discovery that might harm such items have been halted - notified DA Headquarters (ODEP (Consv)) and handled the discovery as directed by DA Headquarters, as evidenced by relevant coordination documents.

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
CURATION OF FEDERALLY OWNED AND ADMINISTRATED ARCHAEOLOGICAL COLLECTIONS	
10-14. The facility must manage archeological collections according to standards established by regulation (36 CFR 79.5(b)).	Verify that the facility has either: (1)(2) - a written statement signed by the commander that it maintains no collections of archeological material and/or data, either derived from Native American sites or from sites created by other ethnic groups such as settler communities, and has no contracts, cooperative agreements, or other arrangements, formal or informal, under which other parties (i.e., museums) maintain such collections - a written statement signed by the Federal, state, local, museum, or academic official legally responsible for the repository in which such collection(s) are housed, guaranteeing that such collections are being and will be maintained in accordance with 36 CFR 79, except for any Native American cultural items repatriated in accordance with the Native American Graves Protection and Repatriation Act.
...	...
AMERICAN INDIAN RELIGIOUS FREEDOM ACT	
10-15. The facility must consult with Native American groups regarding actions that might affect sites of traditional religious or cultural importance to them, or impede their access to such sites for religious purposes, or otherwise impede the practice of traditional religions (NHPA 101(d)(6)(B) and American Indian Religious Freedom Act).	Verify that the facility has either: (1)(2) - jurisdiction over no activities that are likely to have effects on sites of traditional cultural and religious importance to Native American groups, or on access to such sites, or otherwise on the practice of traditional Native American religions, as evidenced by certification to this effect by DA Headquarters (ENVR (Con)) - initiated efforts to contact Native American groups that might have traditional religious or cultural interests in areas under the facility's jurisdiction, or be subject to effect by actions over which the facility has jurisdiction, or that may carry out traditional religious or cultural activities that could be affected by such actions, as evidenced by correspondence, memoranda, and minutes of meetings.
...	...

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RECORDS MANAGEMENT AND ADMINISTRATION	
10-16. The facility must manage its records, including both documents and nondocument records such as videotape, audiotape, and electronic records, in accordance with the regulations of the Archivist of the United States in order to preserve their historical value and make them available to scholarship (36 CFR 1222, 1228, 1230, 1232, 1234, 1236, and 1238).	Verify that the facility has disposal schedules for all records that have been approved by the National Archives and Records Administration (NARA), as evidenced by documents certifying NARA approval. (1)(2)
...	...
NEPA/NHPA	
10-17. The facility must consider the effects of its actions and ongoing management activities on social institutions and lifeways regarded by communities as contributing to the maintenance of culturally pleasing surroundings (NEPA Section 101(b)(2)).	Verify that the facility has either: (1)(2) - been involved in no actions requiring an Environmental Assessment (EA) or Environmental Impact Statement (EIS) under NEPA during the last year - identified and analyzed effects (if any) of any action requiring such review on the social and cultural institutions, lifeways, and aesthetic qualities of any community, neighborhood, or social or ethnic group potentially affected by such action, as evidenced by the presence of such discussion in the applicable EA or EIS.
...	...

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

AR 420-40
 	
10-18. Installations with historic properties should prepare and implement a Historic Preservation Plan (HPP) to guide their management. This may be integrated into a CRMP that addresses a broader subset of, or all, cultural resources (AR 420-40).
	Verify that the facility has either: (1)(2)
	
	- elected not to prepare an HPP or CRMP, as evidenced by a decision memorandum signed by the commander
	- negotiated a Programmatic Agreement (PA) with the SHPO, ACHP, and other interested parties stipulating the content and nature of the HPP or CRMP, as evidenced by correspondence on the subject
	- completed a PA and is preparing an HPP or CRMP as evidenced by a copy of the PA and documents associated with HPP/CRMP preparation
	- an HPP or CRMP in place that:
	  - has been reviewed by the SHPO and ACHP in accordance with the applicable PA, as evidenced by documents signed by SHPO and ACHP representatives
	  - is being implemented, as evidenced by implementation schedules, plans, budget documents, and other written material
	  - is coordinated with Master Planning, Range Control, Integrated Training Area Management (ITAM), and other planning activities, as evidenced by references to the HPP or CRMP in documents guiding implementation of such activities, or by computer-based or other demonstrable systems of coordination
	  - has a definite schedule for review and updating, as evidenced by documents or other provisions contained in the HPP or CRMP, in the PA, or elsewhere providing for such review and updating.

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

INSTALLATION:	COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC)

Section 11

NATURAL RESOURCES MANAGEMENT

SECTION 11

NATURAL RESOURCES MANAGEMENT

A. Applicability of this Protocol

This protocol applies to all Army installations with improved, semi-improved and unimproved grounds. Plans and programs for protection, enhancement, and management of natural resources such as vegetation, wildlife, and their habitats are included in this protocol.

B. Federal Legislation

- *The Endangered Species Act (ESA) of 1973 as amended*, Public Law (PL) 100-478, requires the Army to carry out programs to protect, conserve and assist in recovery of Federally listed endangered and threatened plants and wildlife. Such programs must be developed and carried out with consultation and assistance from the Departments of the Interior (DOI) and Commerce and the proper state agencies. All Army actions authorized, funded, or carried out must not jeopardize the continued existence of Federal endangered or threatened plants and wildlife, nor result in the destruction or adverse modification of critical habitat. Any Army action that may affect Federal listed species or their critical habitats requires consultation with the U.S. Fish and Wildlife Service (U.S. FWS). Federal regulations codified in 50 Code of Federal Regulations (CFR) 402 and 50 CFR 17 interpret and implement the *ESA*. The Army is also required to recognize and consider all state listed species when undertaking any action which may conflict with the protection and conservation of the state species.

- *The Sikes Act* (16 U.S. Code (USC) 670a-670f) requires fish and wildlife conservation and mandates installations to execute cooperative plans with the U.S. FWS and state for managing fish and wildlife. It allows installations to charge fees for hunting and fishing permits, and requires that the receipts from the sale be properly accounted for and used for fish and wildlife conservation on the installation where collected.

- *The Fish and Wildlife Conservation Act (FWCA) of 1980* (PL 96-366; 16 USC 2901 et seq) promotes state programs for the purpose of conserving, restoring, or otherwise benefiting nongame fish and wildlife, their habitats, and their uses.

- PL 86-337 (10 USC 2671) requires that all hunting, fishing, and trapping on military installations be in accordance with the fish and game laws of the state in which the installation is located, and that the hunters, fishers and trappers possess appropriate state licenses.

- 10 USC 2665 provides for sales of forest products on Army installations. Funds generated by these sales are used to reimburse the forest management expenses, pay state entitlement (40 percent of installation net proceeds go to state for county roads and schools). The Army-wide net reserve at the end of the fiscal year, after states' entitlement are paid, goes to the Department of Defense (DOD) Natural Resources Reserve Account which is dispersed, DOD-wide, first to cover otherwise unfunded forestry expenses and then other natural resource projects.

- *The Wild and Scenic Rivers Act of 1960* (30 CFR 297) prohibits the use of Federal funds for activities that would have an adverse affect on those characteristics that caused a river to be classified as wild, scenic, or recreational.

- *The Farmland Protection Policy Act of 1981* (7 CFR 658) minimizes the extent to which Federal programs contribute to the unnecessary conversion of farmland to nonagricultural use. Installation lands, when suitable and available, may be leased for cropland or grazing. 10 USC 2667 provides for the use of the funds generated by those leases for the administrative costs of the leases as well as the financing of multiple-use land management programs at the installation.

- Executive Order (EO) 11987, *Exotic Organisms*, requires executive agencies to restrict the introduction of exotic species into natural ecosystems which they own or lease and encourage the states to prevent such introductions.

- Section 404 of the *Clean Water Act (CWA)* (32 USC 1344) requires the identification, delineation and protection of wetlands and requires permits for actions which affect wetlands.

- EO 11988, *Floodplain Management*, and 11990, *Protection of Wetlands*, address the actions Federal agencies must take to
    1. identify and protect wetlands and floodplains
    2. minimize the risk of flood loss and destruction of wetlands
    3. preserve and enhance the natural and beneficial values of both floodplains and wetlands.

- EO 11989, *Use of Off-Road Vehicles (ORVs) on The Public Lands*, specifies that ORVs may not be used on Federal lands without special use permits and only within specified locations.

- *The Migratory Bird Treaty Act* (PL 65-186; 50 CFR 20) protects migratory birds, their nests, and eggs. Construction, repairs, and other such actions that can harm nests, eggs, or individuals are covered under the act. A depredation permit is required before any person may take, possess, or transport migratory birds, or disturb the nests, eggs, or young.

- *National Environmental Policy Act (NEPA) of 1969* (PL 91-190; 42 USC 4321-4347) states the policy of the Federal government to preserve important historic, cultural, and natural aspects of our national heritage and requires consideration of environmental concerns during project planning and execution. This act requires Federal agencies to prepare an Environmental Impact Statement (EIS) for every Federal action that affects the quality of the human environment, including both natural and cultural resources. It is implemented by regulations issued by the Council on Environmental Quality (CEQ) (40 CFR 1500-1508) which are incorporated into AR 200-2, *Environmental Effects of Army Actions*. (See *National Environmental Policy Act*, Section 12 of this manual, for regulations pertaining to the EIS process.)

C. State/Local Requirements

Army policy is to cooperate with the states to the maximum extent possible.

States develop regulations and good management practices (GMPs) for the protection of surface waters and prevention of nonpoint source pollution. These GMPs primarily apply to agricultural and silvicultural (forestry) activities, but are also to be followed whenever any activity may affect surface waters or contribute to nonpoint source pollution. Army management plans address these GMPs.

States establish regulations governing hunting and fishing activities. These regulations must be followed on Army installations. Special regulations for these activities on installations may be developed in cooperation with the state wildlife management agency.

State and local governments may establish laws and regulations on wetland protection; rare, threatened, or endangered species; water quality certification; state wild and scenic rivers; floodplain protection; and erosion and sediment control.

The FWCA gives implementation authority for the regulation and protection of nonmigratory resident fish and wildlife in the state.

D. DOD Regulations

- DOD Directive 4700.4, *Natural Resources--Conservation and Management*, 29 January 89, prescribes DOD policies and establishes an integrated program for multiple-use management of the renewable natural resources on DOD lands. It directs installations to protect, conserve, and manage the watersheds and natural landscapes, the soil, the forest and timber growth, the fish and wildlife, and endangered species as vital elements of the Army mission. It further stipulates that the natural resources will be used and cared for in the combination best serving the present and future needs of the United States and its people.

- DOD Instruction 7310.5, *Accounting for Production and Sale of Forest Products*, 25 January 1988, provides policy on DOD forestry accounting procedures.

E. U.S. Army Regulations (ARs)

- AR 420-74, *Natural Resources--Land, Forest, and Wildlife Management*, provides Army policy for managing natural resources and attaining the goal of ensuring that Army actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species.

F. Key Compliance Requirements

- Integrated Natural Resources Management Plan (INRMP) - Army installations occupying land and water are to generate a program for developing, restoring, improving, conserving, and managing those resources. Where the land and water areas are large enough to support natural woodlands, native wildlife species, or outdoor recreation, the installation will develop an INRMP to protect and preserve biodiversity. The plan will be integrated for the concurrent management of all resources. The plan will cover, as appropriate for the installation, land (soil and water), grazing and cropland, forests, game and nongame fish and wildlife, and outdoor recreation. The plan will recognize the interrelated effects, impacts, and the influences of climate soil parent material, slope, aspect, and ground as well as surface water.

- Cooperative Agreements - Installations will maintain liaison with agencies through cooperative agreements. These agreements assist in developing and implementing well-coordinated, multiple-use natural resources programs.

- Cooperative Plans - Fish and Wildlife Management plans developed with and receiving the agreement of the state and the USFWS makes these cooperative plans as defined by the *Sikes Act.*

- Endangered and Threatened Species - Army installations must carry out programs to conserve and record endangered and threatened species and, their critical habitat and must consult with the USFWS to ensure that their actions do not jeopardize the continued existence of such species or destroy or adversely modify critical habitat.

- Proper and Legal Use of Funds - Funds collected from the outleasing of lands for agricultural and grazing purposes may only be used to support the agricultural outleasing program or to support other multiple use natural resources programs. Hunting and fishing fees may only be used to support fish and wildlife management on the installation on which it was collected. Receipts from the sale of forest products may only be used to offset costs directly related to the production of commercial forest products within the DOD (10 USC 2665, 2667, and 2671).

- Natural Resources Conservation and Beautification Committee - Installation commanders (ICs) having natural resource programs should appoint this subcommittee of the Environmental Quality Control Committee (EQCC). The subcommittee objectives are to ensure continuous planning and application of the integrated natural resource program, promoting and fostering natural beauty; and natural resource enhancement, protection, and compliance both on the installation and in cooperation with local communities (AR 420-70).

- Natural Resources Coordinator - ICs are required to appoint a natural resources coordinator, as applicable. The coordinator should be an active member of the EQCC.

- Natural Resources Law Enforcement - Natural resources law is required to be enforced by individuals specifically trained and qualified in the area of natural resources law enforcement. This is a specific requirement of the cooperative agreement specified in the *Sikes Act* (16 USC 670 et seq and DODI 4700.4).

- Wetlands - Wetlands are of critical importance to the protection and maintenance of living resources. EO 11990 requires that Federal agencies minimize any significant action that contributes to the loss or degradation of wetlands and that action be initiated to enhance their natural value. It is the Department of the Army (DA) policy to avoid adverse impacts to existing aquatic resources and offset those adverse impacts which are unavoidable. To meet this requirement,

installations will identify and maintain a current inventory of wetlands. Installations should contribute to and reference the *National Wetlands Inventory*. Loss of wetland acreage shall be mitigated to the extent justified and in coordination with other resources.

G. Responsibility for Compliance

- ICs are ultimately responsible for all compliance on their installation.

- Department of Engineering and Housing (DEH), or the designated Environmental Directorate is responsible for funding, supervising, controlling, and managing installation natural resources, including plant and animal species.

- Natural Resources Manager is responsible for preparing management plans and cooperative agreements, budgets, and the annual natural resources report. The natural resources manager also implements and controls all activities in furtherance of natural resources management. On installations without a full-time Natural Resources Manager, these duties could be assigned to the environmental coordinator (EC) or community planner.

H. Key Compliance Definitions

These definitions were obtained from regulations cited previously in this protocol.

- *Action* - means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include, but are not limited to:
    1. actions intended to conserve listed species or their habitat
    2. the promulgation of regulations
    3. the granting of licenses, contracts, leases, easements, rights-of-way, permits
    4. actions directly or indirectly causing modifications to the land, water, or air (50 CFR 402.02).

- *Action Area* - means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02).

- *Candidate Species* - any species being considered by the Secretary of the Interior for listing as an endangered or threatened species (50 CFR 424.02).

- *Category I* - installations having land and water areas suitable for the conservation and management of fish and wildlife, and other natural resources (AR 420-74, para 10-4a(1)).

- *Category II* - installations for which a decision is pending as to program suitability within the meaning of Category I (AR 420-74, para 10-3a(2)).

- *Coastal Zone* - the coastal waters (including lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder) strongly influenced by each other and in proximity to the shoreline of the several coastal states (AR 420-74, para 1-19).

- *Conservation* - the protection, improvement and use of natural resources according to principles that will provide optimum public benefit and support the military missions (AR 420-74, para 1-7).

- *Cooperative Plan Agreements* - a plan for the management of fish and wildlife on an installation which has been mutually agreed upon by the IC, Regional Director, USFWS, and the State Fish and Wildlife Agency (AR 420-74, para 1-25).

- *Critical Habitat* - specific areas within the geographic area commonly occupied by a species which contain features essential to the conservation of the species and which may require special management consideration or protection. Specific areas outside of the currently occupied range of a threatened or endangered species may be determined by the Secretary of the Interior as areas essential for the conservation of the species (50 CFR 424.02).

- *Destruction or Adverse Modification* - means a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical (50 CFR 402.02).

- *Endangered Species* - any species which is in danger of extinction throughout all or significant portion of its range (other than a species of the Class Insect determined to constitute a pest). Federally listed endangered species are officially designated by the DOI (50 CFR 81.1).

- *Forest Management* - the science, the art, and the practice of managing and using for human benefit the natural resources that occur on or in association with forest lands (AR 420-74, para 1-10).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures. In some states these are called Best Management Practices (BMP).

- *Grounds* - all land and water acreage for which an IC has responsibility (including satellite areas). Grounds are grouped into the following three categories: improved grounds; semi-improved grounds; and unimproved grounds (AR 420-74, para 1-13).

- *Improved Grounds* - acreage on which intensive maintenance activities must be planned and performed annually as fixed requirements. Activities include mowing, irrigation, fertilization, cultivation, aerification, seeding, sodding, spraying, pruning, trimming, weed, dust, and erosion control, drainage, planting for landscape effect, wind and sound abatement, and other intensive practices (AR 420-74, para 1-13).

- *Jeopardize the Continued Existence of* - means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the genetic diversity, reproduction, numbers, or distribution of that species (50 CFR 402.02).

- *Land Management* - the planning and execution of programs to improve, utilize and maintain all land and water areas for the greatest net public benefit while supporting the military mission. Included are subordinate land uses that are mutually compatible and consistent with maintaining environmental qualities (AR 420-74, para 1-9).

- *Migratory Bird* - any bird, whatever its origin and whether or not raised in captivity, which belongs to a species listed in 50 CFR 10.13, or which is a mutation or a hybrid of any such species, including any part, nest, or egg of such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part of any such bird or any part, nest, or egg thereof (50 CFR 10.12).

- *Multiple-Use* - the integrated management of all natural resources, each with the other, to achieve the optimum use and enjoyment while maintaining the environmental qualities, ecological relationships and esthetic values in proper balance (AR 420-74, para 1-6).

- *Natural Resources* - the viable and/or renewable products of nature and their environments of soil, air, and water. Included are plants and animals occurring on grasslands, rangelands, croplands, forests, lakes, and streams (AR 420.74, para 1-6).

- *Semi-improved Grounds* - includes areas on which periodic recurring maintenance is performed but to a lesser degree than on improved grounds. Practices normally include such cyclic variables as soil sterilization, weed and brush control, drainage maintenance, and mowing for fire protection. Semi-improved grounds acreage may be combined with improved grounds acreage for reporting purposes when only two categories of grounds are used (AR 420-74, para 1-13).

- *Sustained Yield* - production of renewable natural resources a land or water area can maintain at a given intensity of management (AR 420-74, para 1-16).

- *Threatened Species* - any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Federally listed threatened species are officially designated by the DOI (50 CFR 81.21).

- *Unimproved Grounds* - acreage not classified as improved or semi-improved (AR 420-74, para 1-13).

NATURAL RESOURCES MANAGEMENT

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All Installations	11-1 through 11-5	(1)(2)(9)(15)
Natural Resources	11-6 through 11-12	(1)(2)(9)(12)(15)(31)
Outdoor Recreation Resources	11-13	(1)(2)(15)
Forest Management	11-14	(1)(2)(15)
Wildlife Management	11-15 through 11-17	(1)(2)(15)
Land Management	11-18 through 11-20	(1)(2)(15)
Irrigation	11-21	(1)(2)(15)
Receipts and Expenditures	11-22 and 11-23	(1)(2)(9)(15)(31)
Off-Road Vehicles (ORVs)	11-24	(2)
Natural Resources Law Enforcement	11-25	(2)(12)(15)
RC 1383 Natural Resources	11-26	(1)(2)

(a) CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(9) Chief of Operations and Maintenance (O&M)
(12) Director of Plans, Training, Mobilization, and Security (DPTMSEC)
(15) Natural Resources Specialist
(31) Directorate of Personnel and Community Activities (DPCA)

NATURAL RESOURCES MANAGEMENT

Plans and Maps to Review

- Installation Master Plan
- Natural Resources Management Plan (Parts 1 through 5, as appropriate)
- Fish and Wildlife Cooperative Plan, and consultations
- Agricultural and Grazing Lease Contracts, and Land Use Plans
- Natural Resources Annual Work Plans and Approvals
- government-owned contractor-operated (GOCO) Maintenance Plan

Records to Review

- Environmental Review Documents
- Fish and Wildlife Cooperative Agreement
- Outdoor Recreation Plan
- Outdoor Recreation Cooperative Agreement
- Grounds Maintenance Contracts
- Budget Documents (DD 1383 report, Facilities Engineers Annual Work Plan)
- Natural Resources Report, or equivalent
- GOCO Contract
- ESA documentation prepared by the installation

Physical Features to Examine

- Construction sites (erosion control, runoff, sedimentation, and landscaping)
- Facilities constructed in the past 2 years (yr) (erosion and landscaping)
- Wildlife containment areas (condition and management)
- Wildlife habitat and land and water resources (condition and management)
- Equipment that could damage wildlife, its habitat, or land and water resources (use and control)
- Military Training areas (condition)
- Ordnance storage and disposal areas (condition)
- Forest management areas (condition and management)
- Agricultural and grazing lease areas (condition and management)
- Stormwater drainage areas and improvements (condition)
- Erosion sites (condition and erosion)

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Chief of Operations and Maintenance (O&M)
- Director of Plans, Training, Mobilization, and Security (DPTMSEC)
- Natural Resources Specialist
- Directorate of Personnel and Community Activities (DPCA)

CHECKLIST FOR ECAS'S NATURAL RESOURCE AUDITORS

1. If the natural resource base is adequate to require natural resource management (AR 420-74), does an integrated natural resource management plan exist which: (Reviewer check 11-6)

    a. Addresses all renewable and nonrenewable (consumable) resources and areas of critical concern from both policy and technical aspects? (Reviewer check 11-4)

    b. Places mission support as top priority?

    c. Has: (reviewer check 11-4)
        1. current (less than 10 yr old) inventories to support the plans?
        2. goals current and realistic in support of mission and natural resources?
        3. management methods sufficient to meet goals, and adequate to meet budget requirements?
        4. activity and annual work schedules directed to meeting goals?
        5. priorities reasonable and proper and aimed at meeting military mission goals?
        6. responsibilities of installation planners and decision makers well defined?
        7. monitoring systems in place which provide usable information?
        8. systems in place which protect resources and mission and enforce laws, regulations, and orders?
        9. land use restrictions, limitations, potentials, and capabilities addressed and reasonable?

    d. Professional and technical manpower and financial support adequate to meet planning, management, monitoring and enforcement requirements? (11-6)

    e. Does each plan segment (i.e., land management, forest, fish and wildlife, and outdoor recreation) recognize the needs of, and the impacts on the other segments and exhibit compatible methodologies and goals? (11-6)

    f. Is the integrated plan and each component compatible with the installation master plan, integrated pest management plan and the Master Training Schedule? (11-6)

2. Is the tripartite fish and wildlife cooperative plan agreement required by 16 USC 670 in place and does it recognize and address the influence and impacts of forestry, land use and management, outdoor recreation, and mission in its goals? Is it reviewed annually by the cooperators and has it been revised in the past 5 yr? (11-7)

3. If the installation has any endangered or threatened plants or animals, or critical habitats for these species, a) has their presence and requirements been thoroughly surveyed, recognized, and addressed in the various components of the integrated plan?; b) in addition, do they have a specific plan which protects and manages the endangered species located on the installation?; c) are protection management and recovery plans available for review and do they adequately address the issues? (11-15)

4. Is an adequate landscape planting plan available which:

    a. stresses the use of native plants species in landscaping?
    b. includes specific planting and maintenance specifications, standards and plans? (11-10)

5. In preparing all plans, were the guidelines in TM 5-630, 631, 633, 635 available, used, and followed?

6. Are adequately trained professionals available on-board or at MACOM to prepare, revise, monitor, and execute the plans? (11-9)

7. Are individuals enforcing natural resources law trained in natural resources law enforcement? Can they identify illegally taken species of animals or plants? Have they attended the available U.S. Fish and Wildlife Service training courses and do they hold a commission from this training? (AR 420-74.3.3d, 3.20, & 6.1d(4)) (11-25)

8. Have the installation's jurisdictional wetlands been delineated? If not, are provisions made for their delineation? Do the installation's regulations cover current wetland regulations?

9. Do EAs and EISs for construction and mission activities adequately address natural resources including endangered species?

10. Are design, construction and performance or mission carried out so that none of the following resources will be lost, downgraded, or destroyed? (11-10, 11-13, 11-14, & 11-18)

    - soil and vegetation
    - surface and subsurface waters
    - wetlands
    - floodplains
    - archaeological and historic sites
    - wildlife resources
    - forests and woodland resources

11. Have surveys been made and measures taken to control nonpoint pollution sources, erosion and sedimentation, and other pollutants harmful to the land, air, or water or any associated resources?

12. Does the installation have documents addressing endangered species, wildlife, riparian zones, floodplains, wetlands, archaeological and historical sites, off-road vehicles, sedimentation, erosion, timber and nonpoint source pollution? (11-4)

13. Are natural resources adequately addressed in the RCS-1383 process? (AR 420-74.2-3) (11-26)

14. Are land management programs consistent with the latest professional standards, and do they adequately support mission? (11-18)

    - Does the installation keep current on land management practices and standards?
    - Are the decision makers kept abreast of the condition of the natural resources? How? Is LCTA utilized to assess these conditions? (AR 420-74.3.23)

15. Is staffing adequate for the installation resource base and mission complexity? (11-9)

16. Are professional natural resource personnel given adequate opportunities to maintain and improve their competence, through either onsite or offsite training opportunities? (11-9)

17. Are appropriated funds adequate to meet natural resource goals? (AR 420-74.1-5d(1)) (11-22 and 11-23)

18. Are reimbursable funds being properly used for natural resource management? Are nonreimbursable fenced funds properly used? (AR 420-74.3-2b) (11-22 and 11-23)

19. Are Federal, state and local agencies given priority when awarding service contracts for wildlife management and law enforcement? (AR 420-74.3-4c) (11-25)

20. Does planned land utilization avoid or minimize adverse environmental effects of proposed action? (11-18 and 11-19)

    - Are actions carried out in accordance with AR 200-1, 220-2, and 210-21?
    - Is the natural resource professional an active participant in land use planning and decision making?

21. Are all Memoranda of Understanding (MOU) related to natural resources current within the past 10 yr? (11-3 and 11-4)

22. Does the public have access to military lands and waters? (AR 420-74.2-8a) (11-13)

    - To the degree and for the purposes specified in AR 420-74.2?
    - If access is limited, is the priority in accordance with 420-74(3)(a)(1)?

23. Are environmental and natural limitations to land use identified? (11-18)

24. Are suitable and available lands used for agricultural and grazing outleases?

25. If available, has the installation instituted the Integrated Training Area Management System as a coordinated program to assure mission support while maintaining the highest quality resource base in accordance with AR 420-74.3-23?

26. If forest resources warrant a forest management program: (11-14)

    - Is the forest management plan up-to-date (newer than 20 yr) and does it have an interim revision done within the last 5 yr? Is there an up-to-date annual work plan designed to meet the long range plan's goals?
    - Does the installation have a current forest resource inventory (within the past 10 yr)?
    - Are any forest products given away or abandoned?
    - Are forest product sales receipts properly handled and accounted for in BCA 21F3875.3960 20-C s99999?
    - Are commercial forestry activities funded through activities account #AR 37-100-XX-Account Code 728012.26000?

27. If the installation is a Category I (land and water suitable for fish and wildlife program), does it: (11-7)

    - program for adequate operation and maintenance funds to support a fish and wildlife program?
    - control fish and wildlife related activities in accordance with state and Federal laws, ARs and the cooperative plan?
    - have a cooperative plan and agreement in accordance with 16 USC 670 and AR 420-74.6-4?
    - have an established natural resources law enforcement program with specially trained officers?
    - require valid state license to hunt or fish?

- require a special base permit to hunt or fish?

    - collect and deposit special base permit fees into account 21X5095 for use in fish and wildlife management?

- have a cooperative plan that addresses threatened and endangered species?

- does the fish and wildlife plan address population and habitat management?

- does the plan interface with forestry, outdoor recreation and the other components of the integrated management plan?

28. *Outdoor Recreation*

Outdoor recreation in this context covers camping, nature trails, hiking trails, compass or orienteering courses, canoeing, mountain climbing, bird watching, watchable wildlife, and similar recreation utilizing the natural resources. It does not include tennis, baseball, softball, soccer, golf, or similar organized outdoor activities. It also excludes hunting, fishing and trapping. (11-12 and 11-13)

- Has the outdoor recreation plan been revised during the past 5 yr?
- Is it part of the integrated natural resources management plan?
- Is the coordination between the DEH and DPCA Directorates spelled out?
- Are user fees collected and deposited into the reimbursable accounts to fund natural resources work?

29. *Off-Road Vehicle (ORV) Use*:

- Are areas designated for ORV use on the installation? (11-24)

- Is regulation or control of ORV use in accordance with AR 420-74.8-2a?

- Is there a written plan in accordance with AR 420-74.9?

- Are endangered species addressed in accordance with AR 420-74.11?

30. *Crop and Grazing Leases*:

If lands are suitable and available,

- Does the installation have an outlease program for crop production or grazing?

- If so, is there a long range plan and land use regulations covering the outlease?

- Are the receipts properly reported and utilized in accordance with AR 420-74.3-13? (11-22)

31. *General*

Is the natural resource program geared to accomplish the following AR 420-74 goals?

1. Support the military mission?
2. Protect environmentally sensitive areas?

3. Protect the real estate investment?
4. Protect plants and animals, especially threatened and endangered species?
5. Comply with environmental protection policies and procedures?
6. Prevent damage from fire, insects, and disease?
7. Protect and enhance natural beauty?
8. Respond to social needs for food, fibre and recreation?
9. Improve installation appearance?
10. Conserve soil, water, forests, rangelands, fish and wildlife?

32. *Environmental Quality Control Committee and the Natural Resource, Outdoor Recreation and Beautification Subcommittees*

Does the installation have an active Environmental Quality Control Committee (EQCC) that: (1)(2)

- assures continuous planning, execution, and monitoring of the environmental and natural resources program

- identifies issues, makes recommendations, and advises the installation commander (IC) on priorities, policies, and strategies for the compliance, management, and enhancement of the integrated environmental and natural resource program

- promotes and fosters natural beauty, and, natural resource enhancement, protection, and compliance both on the installation and in cooperation with local communities

- if appropriate, has natural resource, outdoor recreation, and beautification subcommittees.

Does the EQCC include: (1)(2)

- Commander

- Facilities Engineer

- Environmental Coordinator

- Natural Resource Manager

- and personnel representing the operations, planning, housing, recreation, legal, safety, public affairs, veterinary, and medical interests of the installation?

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS **11-1.** Determine actions or changes since previous review (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)(2)
...	...
11-2. Installations should maintain a current file of applicable Federal, DOD, U.S. Army, and state/ local regulations for natural resources management (GMP).	Verify that the following documents are maintained and kept current at the installations. (1)(2)(15) - 7 CFR 360, *Noxious Weed Regulations.* - 50 CFR 21, *Migrato. . Bird Permits* - 50 CFR 40. *eragency Cooperation--Endangered Species Act of 1973, as an ed.* - EO 12088, *Fed. al Compliance with Pollution Standards.* - AR 200-2, *Environmental Effects of Army Actions.* - AR 215-2, *Management and Operations of Army Morale, Welfare, and Recreation Programs and Nonappropriated Funds Instrumentalities.* - AR 420-74, *Natural Resources – Land, Forest, and Wildlife Management.* - Applicable state and local regulations.
...	...
11-3. Installations are required to comply with applicable state and local requirements (EO 12088, Section 1-1 and 16 USC 1531(c)).	Verify that the installation is complying with state and local requirements. (1)(2)(9)(15) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2)(9) (NOTE: Issues which are typically regulated by state and local agencies include: - endangered and threatened species lists - hunting and trapping restrictions - erosion control - wetlands - floodplains - coastal zone - wild and scenic rivers.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (15) Land Management Officer (DEH) (31) Directorate of Personnel and Community Activities (DPCA)

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
11-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2)(9) Verify that the existing system addresses the issues associated with endangered species and natural resources by: (1)(2)(9) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)(9)
...	...
11-5. Installations are required to comply with regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning endangered species and natural resources have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (15) Land Management Officer (DEH) (31) Directorate of Personnel and Community Activities (DPCA)

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
NATURAL RESOURCES	
11-6. Installations meeting size and natural resource base requirements are required to have a INRMP that meets specific criteria (AR 420-74, paras 8-1a, 8-2a, 8-3b, and 8-4).	Verify that the INRMP includes the following chapters according to the indicated parameters: (1)(2) - Part I: General (include if the installation has 500 or more acres of improved, semi-improved and unimproved grounds combined, or 50 or more acres of improved grounds - Part II: Land Management and Ground Maintenance (include if the installation has 500 or more acres of improved, semi-improved and unimproved grounds combined, or 50 or more acres of improved grounds - Part III: Forest Management (include if the installation has 100 or more acres of commercial forest land - Part IV: Fish and Wildlife Management (include if the installation has land and water areas suitable for the management of fish and wildlife resources - Part V: Outdoor Recreation (include if the installation has an outdoor recreation program that depends on the maintenance and management of natural resources. Verify that the plan is reviewed annually and revised as necessary. (1)(2) Verify that the plan was prepared or updated within the previous 5 yr. (1)(2) Verify that all major initiatives in plan have environmental documentation consistent with NEPA and CEQ requirements. (1)(2) Verify that the plan was prepared and is kept current by qualified personnel. (1)(2)
...	...
11-7. All Category I installations are required to prepare and implement Cooperative Plan Agreements for Conservation and Development of Fish and Wildlife Resources (AR 420-74, para 8-1b, 8-3c, and 5-4).	Verify that the Cooperative Plan Agreement for Conservation and Development of Fish and Wildlife Resources is prepared and amended as appropriate in coordination with State and Federal fish and wildlife conservation agencies. (1)(2)(15) (NOTE: Category I installations are those having land and water areas suitable for the conservation and management of fish, wildlife, and other natural resources as determined by consultation with appropriate Federal and State fish and wildlife agencies.) Verify that the agreement is in agreement with the INRMP. (1)(2)(15)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (15) Land Management Officer (DEH) (31) Directorate of Personnel and Community Activities (DPCA)

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
11-8. Installations with active natural resources programs or the potential for natural resources programs under the concept of AR 420-74 are required to have a Natural Resources Conservation and Beautification Committee (AR 420-74, para 2-7).	Determine if the installation has an active natural resources program or the potential for a program as described in 420-74. (1)(2) Verify that the installation has a Natural Resources and Beautification Committee that: (1)(2) - assures continuous planning and balanced application of the Natural Resources Program - plans, promotes, and fosters natural beauty and environmental protection and enhancement programs both on base and in cooperation with local communities. Verify that the Committee includes: (1)(2) - the facilities engineer - the natural resource management personnel - the EC - the entomologist - the provost marshal/security officer - operations, safety, legal, medical, recreation services, and veterinarian personnel - a representative of the installations' rod and gun club.
...	...
11-9. Personnel are required to be designated and trained for environmental responsibilities (DOD Directive 4700.4, para E3(a), and AR 420-74, para 2-2, 2-3c).	Verify that staffing optimizes professionally trained personnel necessary for technical guidance in planning and executing the Natural Resources Program such as: (1)(2)(12) - an agronomist - a forester - a wildlife manager - a landscape architect - a soil conservationist - an agricultural engineer - an ecologist - an horticulturist - an arborist. Determine if periodic and comprehensive technical instruction concerning land preparation, soil management, fertilization, pruning, spraying, and other horticulture skills is provided for personnel engaged in the care and maintenance of lawns, trees, shrubs, and other landscape plants. (1)
...	...
11-10. Grounds are required to be maintained to meet designated uses and assure harmony with natural landscape (DOD Directive 4700.4, para B1(h), and AR 420-74, para 3-1, 3-2, and 3-8).	Verify that turf areas are maintained with a permanent vegetative cover of desirable plants. (1)(9) Verify that improved grounds are maintained in accordance with (IAW) parts 1 and 2 of the INRMP. (9) Verify that landscape planting, pruning, cultivation, and other maintenance is done according to TM 5-630. (1)(9)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (15) Land Management Officer (DEH) (31) Directorate of Personnel and Community Activities (DPCA)

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
11-11. Noxious weeds must not be moved through the U.S. unless the movement is allowed by a permit (7 CFR 360.100 through 360.300).	Verify that the installation is not moving noxious weeds without a permit. (1)(2)(15) (NOTE: A list of noxious weeds is in Appendix 11-1.)
...	...
11-12. Installations with recreation resources are required to be actively involved in developing a Cooperative Plan Agreement for Outdoor Recreation (AR 215-2, and AR 420-74, para 7-1).	Examine Outdoor Recreation Program for the following: (1)(2)(15)(31) - maintenance responsibilities - evaluations for ORVs - fish and wildlife resources management - installation potential to support community recreation needs.
...	...
OUTDOOR RECREATION RESOURCES	
11-13. Installations are required to provide for controlled public access at DA installations and facilities with land and water areas suitable for the recreational use and enjoyment of the public (AR 420-74, para 2-8a).	Determine if the installation has any land and water areas suitable for recreational use and enjoyment by the public. (1)(2)(15) Verify that access is provided within manageable quotas and without impairment of mission. (1)(2) (NOTE: When access must be withheld the reasons must be substantiated by a statement in the Cooperative Plan Agreement.)
...	...
FOREST MANAGEMENT	

11-14. Effective forest management must provide for the sustained production of timber and related natural resources values (AR 420-74, para 4-1 and 4-4).	Verify that forest management is done so that: (1)(2)(15)
	
	- volume inventories are made and kept current for all forest lands managed for timber production
	- small volume (including firewood) sales are IAW AR 405-90
	- harvesting and treatment provides for:
	  - sustained yield
	  - improved training areas
	  - improved watersheds
	  - improved wildlife habitat
	  - it complements natural beauty values along scenic corridors.

...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (15) Land Management Officer (DEH) (31) Directorate of Personnel and Community Activities (DPCA)

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
WILDLIFE MANAGEMENT	
11-15. All installations with Federally designated endangered and threatened species must carry out programs for their conservation (50 CFR 402, 402.01(a), 402.10, and 402.12).	Verify that a survey has been done for endangered and threatened species. (1)(2) Verify that consultations have been held with U.S. FWS and state conservation agency. (1)(2) Verify that measures have been initiated to maintain threatened and endangered species. (1)(2) Verify that if a jeopardy biological opinion has been given, action has been taken to comply with USFWS requirements. (1)(2) Verify that when applicable, there is a plan for the protection and management of the species. (1)(2)
...	...
11-16. Individuals may not take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter any migratory bird, or the parts, nests, or eggs without a permit (50 CFR 21.11 through 21.50).	Determine if the installation is on a migratory bird path. (1)(2) Verify that prior to killing birds for any reason, it is determined whether or not they are migratory birds. (1)(2) Verify that if actions are taken with migratory birds, the installation has a permit to do so. (1)(2) (NOTE: Exemptions from the permit requirement are available for the following: - captive-reared and properly marked mallards duck - captive-reared and properly marked migratory waterfowl.)
...	...
11-17. The installation's Fish and Wildlife Management Program must be operated according to specific parameters (AR 420-74, para 5-1, 5-2, 5-5, and 5-6).	Verify that fishing, hunting and trapping are authorized and controlled in conformance with Federal and state laws, local regulations, and approved management plans. (1)(2)(15) Verify that foreign species of fish and wildlife have not been introduced to Army land without approval from FWS, the state and HQDA. (1)(2)(15)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (15) Land Management Officer (DEH) (31) Directorate of Personnel and Community Activities (DPCA)

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
LAND MANAGEMENT	
11-18. Land management operations are required to be consistent with modern conservation and land use principles (AR 420-74, para 2-10 and 2-13 through 2-16).	Verify that land management at the installation includes the following issues: (1)(2)(15) - dust and erosion control - fire protection - weed control. Examine leases, easements, and other special uses and interview natural resource manager to determine compatible uses and periodic inspections for land involved, including: (1)(2)(15) - condition of agriculture, grazing, and timber (or other resources) sale areas leased - compliance with lease provisions, environmental recreation, and good professional practice. Verify that an inventory and classification has been done of the current resources, including identification and evaluation of the condition and potential of wetland, marine, and estuarine area, fresh water, forest land, grasslands, scenic and natural areas, aesthetics, and any other significant environmental element. (1)(2)(15) Verify that inventories identify endangered and threatened species of flora and fauna and archeological and historic sites. (1)(2)(15)
...	...
11-19. Land management at the installation should address various issues (GMP).	Verify that the land management program addresses the following issues: (1)(2)(15) - land use limitations - mission requirements - fire protection - coastal zone management (where appropriate) - beach properties (where appropriate) - wetlands - Integrated Training Area Management (ITAM).
...	...
11-20. A protective vegetative cover or other measures will be used to control dust and erosion damage to land (AR 420-74, para 2-14, 3-1).	Verify that the Land Management Plan addresses, in detail, erosion problems on training and maneuver areas and proposes remedial actions. (1)(2)(12)(15) Verify that the installation has been surveyed to locate areas where bare soil is exposed and current or potential erosion is obvious. (1)(2) Verify that remedial actions have been initiated. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (15) Land Management Officer (DEH) (31) Directorate of Personnel and Community Activities (DPCA)

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
IRRIGATION	
11-21. If irrigation is practiced, installations should have a water resources monitoring plan (GMP).	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)(2)(15) Verify that the installation is complying with local water conservation initiatives and restrictions. (1)(2)(15)
...	...
RECEIPTS AND EXPENDITURES	
11-22. Receipts from natural resource management activities such as forest product sales, sales of hunting and fishing permits, sale of outdoor recreation use permits, and from agricultural and grazing leases, should be deposited in special accounts (GMP).	Verify that all proceeds from the sale of forest products are deposited into Account BCA 21F3875.3960 20-C S99999. (1)(2)(15) Verify that all receipts from the sale of hunting and fishing, and trapping permits are deposited into Account 21X5095. (31) Verify that all receipts from outleases for agricultural or grazing purposes are deposited into the Army account established for that purpose. (15)
...	...
11-23. Expenditures from special natural resources reimbursable accounts should remain fenced for specified purposes (GMP).	Verify that only commercial forestry activities are funded from reimbursable and refundable activities account number AR 37-100-XX, Account code 728012,26000. (1)(2)(9)(15) Verify that only fish and wildlife management activities are funded from Account 21X5095. (1)(2)(9)(15) Verify that funds received on installation from crops and grazing fund accounts are utilized in support of: (1)(2)(9)(15) - the agricultural and grazing lease costs - furthering the agricultural and grazing lease program - other multiple use natural resource management programs.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (15) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (15) Land Management Officer (DEH) (31) Directorate of Personnel and Community Activities (DPCA)

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
OFF-ROAD VEHICLES	
11-24. Installations are required to control ORV (GMP).	Determine if ORVs are authorized on the installation. (2) Verify that if ORVs are authorized on the installation regulations are developed for their control. (2) Verify that ORV regulations address endangered species if there are endangered or threatened species on the installation. (2) Verify that the ORV regulations address all other natural resources and outdoor recreation plans as activities as well as mission needs. (2)
...	...
NATURAL RESOURCES LAW ENFORCEMENT	
11-25. Natural resources law enforcement personnel should be specially trained and certified as natural resources law officers (GMP).	Verify that the personnel charged with enforcing natural resources law are specifically trained and warranted in natural resources law enforcement. (2)(12)(15)
...	...
RC 1383 NATURAL RESOURCES	
11-26. Natural resources should be adequately prioritized and addressed to meet all legal requirements (GMP).	Verify that the RS 1383 process adequately prioritizes and addresses natural resources programs and needs. (1)(2) Verify that legal requirements are being addressed, recognized, prioritized, and funded. (1)(2)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (15) Land Management Officer (DEH) (31) Directorate of Personnel and Community Activities (DPCA)

Appendix 11-1

Noxious Weeds
(7 CFR 360.200)

1. Aquatic weeds:

Azolla pinnata	R. Brown	mosquito fern, water velvet
Eichornia azurea	(Swartz) Kunth	anchored waterhyacinth, rooted waterhyacinth
Hydrilla verticillata	(Linnaeus f.) Royle	hydrilla
Hygrophila polysperma	T. Anderson	Miramar weed
Ipomoea aquatica	Forsskal	water-spinach, swamp morning-glory
Lagarosiphon major	(Ridley) Moss	
Limnophila sessiliflora	(Vahl) Blume	ambulia
Monochoria hastata	(Linnaeus) Solms-Laubach	
Monochoria vaginalis	(Burman f.) C.Presl	
Sagittaria sagittifolia	Linnaeus	arrowhead
Salvinia auriculata	Aublet	giant salvina
Salvinia biloba	Raddi	giant salvina
Salvinia herzogii	de la Sota	giant salvina
Salvinia molesta	D.S. Mitchell	giant salvina
Sparganium erectum	Linnaeus	exotic burrweed
Stratiotes aloides	Linnaeus	water-aloe

2. Parasitic weeds:

Aeginetia	spp.
Alectra	spp.
Cuscata	spp. (dodders),
other than the following species:	
Cuscata americana	Linnaeus
Cuscata applanata	Engelmann
Cuscata approximata	Babington
Cuscata attenuata	Waterfall
Cuscata boldinghii	Urban
Cuscata brachycalyx	(Yuncker)Yuncker
Cuscata californica	Hooker & Arnot
Cuscata campestris	Yuncker
Cuscata cassytiodes	Nees ex Engelmann
Cuscata ceanothii	Behr
Cuscata cephalanthii	Engelmann
Cuscata compacta	Jussieu
Cuscata corylii	Engelmann
Cuscata cuspidata	Engelmann
Cuscata decipiens	Yuncker
Cuscata dentatasquamata	Yuncker
Cuscata denticulata	Engelmann
Cuscata epilinium	Weihe

Cuscata epithymum	(Linnaeus) Linnaeus
Cuscata erosa	Yuncker
Cuscata europaea	Linnaeus
Cuscata exalta	Engelmann
Cuscata fasciculata	Yuncker
Cuscata glabrior	(Engelmann)Yuncker
Cuscata globulosa	Bentham
Cuscata glomerata	Choisy
Cuscata gronovii	Willdenow
Cuscata harperi	Small
Cuscata howelliana	Rubtzoff
Cuscata indecora	Choisy
Cuscata jepsonii	Yuncker
Cuscata leptantha	Engelmann
Cuscata mitriformis	Engelmann
Cuscata nevadenis	I.M.Johnston
Cuscata obtusiflora	Humbolt, Bonpland, & Kunth
Cuscata occidentalis	Millspaugh ex Mill & Nuttall
Cuscata odontolepis	Engelmann
Cuscata pentagona	Engelmann
Cuscata planiflora	Tenore
Cuscata plattensis	A.Nelson
Cuscata polygonorum	Engelmann
Cuscata rostrata	Shuttleworth ex Engelmann
Cuscata runyonii	Yuncker
Cuscata salina	Engelmann
Cuscata sandwichiana	Choisy
Cuscata squamata	Engelmann
Cuscata suaveolens	Seringe
Cuscata suksdorfi	Yuncker
Cuscata tuberculata	Brandegee
Cuscata umbellata	Humboldt, Bonplamd, & Kunth
Cuscata umbrosa	Beyrich ex Hooker
Cuscata vetchii	Brandegee
Cuscata warneri	Yuncker
Orobanche	spp. (broomrapes),
other than the following species:	
Orobanche bulbosa	(Gray) G.Beck
Orobanche californica	Schlechtendal & Chamisso
Orobanche cooperi	(Gray) Heller
Orobanche corymbosa	(Rydberg) Ferris
Orobanche dugessi	(S.Watson) Munz
Orobanche fasciculata	Nuttall
Orobanche ludoviciana	Nuttall
Orobanche multicaulis	Brandegee
Orobanche parishii	(Jepson) Heckard
Orobanche pinorum	Geyer ex Hooker
Orobanche uniflora	Linnaeus
Orobanche valida	Jepson
Orobanche vallicola	(Jepson) Heckard
Striga	spp. (witchweeds)

3. Terrstrial weeds:

Ageratina adenophora	(Sprengel) King & Robinson	crofton weed
Alternanthera sessilis	(Linnaeus) R.Brown ex de Candolle	sessile joyweed
Asphodelus fistulosus	Linnaeus	onionweed
Avena sterilis	Linnaeus	
including *Avena ludoviciana*	Durieu	animated oat, wild oat
Borreria alata	(Aublet) de Candolle	
Carthamus oxyacantha	M.Bieberstein	wild safflower
Chrysopogon aciculatus	(Retzius) Trinius	pilipiliula
Commelina benghalensis	Linnaeus	Benghal dayflower
Crupina vulgaris	Cassini	common crupina
Digitaria scalarum	(Schweinfurth) Chiovenda	African couchgrass, fingergrass
Digitaria velutina	(Forsskal) Palisot de Beauvois	velvet fingergrass, annual conchgrass
Drymaria arenarioides	Humboldt & Bonpland ex Roemer & Schultes	lightning weed
Emex australis	Steinhell	three-cornered jack
Emex spinosa	(Linnaeus) Campdera	devil's thorn
Euphorbia prunifolia	Jacquin	painted euphorbia
Galega officinalis	Linnaeus	goatsrue
Heracleum mantegazzianum	Sommier & Levier	giant hogweed
Imperata brasiliensis	Trinius	Brazilian satintail
Imperata cylindrica	(Linnaeus) Raeuschel	cogongras
Ipomoea triloba	Linnaeus	little bell, aiea morning-glory
Ischaemum rugosum	Salisbury	murainograss
Leptochloa chinensis	(Linnaeus) Nees	Asian sprangletop
Lycium ferocissimum	Miers	African boxthorn
Melastoma malabathricum	Linnaeus	
Mikania cordata	(Burman f.) B.L.Robinson	mile-a-minute
Mikania micrantha	Humboldt, Bonpland, & Kunth	
Mimosa invisa	Martius	giant sensitive plant
Mimosa pigra	Linnaeus var. *pigra*	catclaw mimosa
Nassella trichotoma	(Nees) Hackel ex Arechavaleta	serrated tussock
Opuntia aurantiaca	Lindley	jointed prickly pear
Oryza longistaminata	A.Chevalier & Roehrich	red rice
Oryza punctata	Kotschy ex Steudel	red rice
Oryza rufipogon	Griffith	red rice
Paspalum scrobiculatum	Linnaeus	Kodomillet
Pennisetum clandestinum	Hochstetter ex Chiovenda	kikuyugrass
Pennisetum macrourum	Trinius	African feathergrass
Pennisetum pedicellatum	Trinius	kyasumagrass
Pennisetum polystachion	(Linnaeus) Schultes	missiongrass, thin napiergrass
Prosopis alpataco	R.A.Philippi	
Prosopis argentina	Burkart	
Prosopis articulata	S.Watson	
Prosopis burkartii	Munoz	
Prosopis caldenia	Burkart	
Prosopis calingastana	Burkart	
Prosopis campestris	Griseback	
Prosopis castellanosii	Burkart	
Prosopis denudans	Bentham	
Prosopis elata	(Burkart) Burkart	

Prosopis farcta	(Solander ex Russel) Macbride	
Prosopis ferox	Grisebach	
Prosopis fiebrigii	Harms	
Prosopis hassleri	Harms	
Prosopis humilis	Gilles ex Hooker & Arnott	
Prosopis kuntzei	Harms	
Prosopis pallida	(Humboldt, Bonpland ex Willdenow) Humboldt, Bonpland, & Kunth	
Prosopis palmeri	S.Watson	
Prosopis reptans	Bentham var. *reptans*	
Prosopis rojasiana	Burkart	
Prosopis ruizlealii	Burkart	
Prosopis ruscifolia	Grisebach	
Prosopis sericantha	Gillies ex Hooker & Arnott	
Prosopis strombulifera	(Lamarck) Bentham	
Prosopis torquata	(Cavanilles ex Lagasca y Segura) de Candolle	
Rottboellia exaltata	Linnaeus f.	itchgrass, raoulgrass
Rubus fruticosus	Linnaeus (complex)	wild blackberry
Rubus moluccanus	Linnaeus	wild raspberry
Saccharum spontaneum	Linnaeus	wild sugarcane
Salsola vermiculata	Linnaeus	wormleaf salsola
Setaria pallide-fusca	(Schumacher) Stapf & Hubbard	cattail grass
Solanum torvum	Swartz	turkeyberry
Tridax procumbens	Linnaeus	coat buttons
Urochloa panicoides	Beauvois	liverseed grass

INSTALLATION:	COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (9) Chief of Operations and Maintenance (O&M) (12) Director of Plans, Training, Mobilization, and Security (DPTMSEC) (15) Land Management Officer (DEH) (31) Directorate of Personnel and Community Activities (DPCA)

Section 12

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

SECTION 12

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

A. Applicability of this Protocol

This protocol applies to all Army facilities. It contains procedures and regulations designed to protect and enhance the Nation's environmental resources by incorporating environmental analysis into Army planning and decision-making. These procedures and regulations are derived from the NEPA of 1969 and contained in the Council on Environmental Quality's (CEQ) *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, Department of Defense Directive (DODD) 6050.1 (*Environmental Effects in the United States of DOD Actions*), Army Regulation (AR) 200-1 (*Environmental Protection and Enhancement*) and AR 200-2 (*Environmental Effects of Army Actions*).

Specific state regulations are not included in this protocol.

B. Federal Legislation

- *The National Environmental Policy Act (NEPA) of 1970.* This purpose of this Act, 42 U.S. Code (USC) 4321-4370c, as last amended in November 1990 was to declare a national policy which would encourage productive and enjoyable harmony between man and his environment. Additionally, it provides for the promotion of efforts which would prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man (42 USC 4321).

  Under NEPA, the continuing policy of the Federal government is to use all practicable means and measures in a manner calculated to foster and promote the general welfare, and to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans (42 USC 4331(a)). It is the continuing responsibility of the Federal government to use practicable means and resources to the end that the Nation may preserve important historic, cultural, and natural aspects of our national heritage (42 USC 4331(b)(4)).

- *The Environmental Quality Improvement Act of 1970.* This Act, last amended in October 1984, 42 USC 4371-4374, is a Federal law regarding the establishment of the Office of Environmental Quality in the executive branch of the Federal

government. Congress declares that there is a national policy for the environment which provides for the enhancement of environmental quality. This policy is evidenced by statutes enacted relating to the prevention, abatement, and control of environmental pollution, water and land resources, transportation, and economic and regional development (42 USC 4371(b)(1)).

- *Executive Order (EO) 11514.* This EO, issued on 5 March 1970, 35 F.R. 4247, (amended by EO 11991) issued on 24 May 1977, 42 F.R. 26967, is a Presidential order which implements the NEPA of 1969. Under this Order, *Protection and Enhancement of Environmental Quality*, the Federal Government must provide leadership in protecting and enhancing the quality of the Nation's environment to sustain and enrich human life. Federal agencies must initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals (Section 1).

- EO 11991, Relating to Protection and Enhancement of Environmental Quality, of 24 May 1977 required the CEQ to create Federal regulations implementing NEPA.

C. State/Local Requirements

- None.

D. DOD Regulations

- DOD Directive 6050.1, *Environmental Effects in the United States of DOD Actions*, implements the CEQ regulations and provides policy and procedures enabling DOD officials to be informed of, and take into account environmental considerations during the decision-making stage of possible major DOD actions in the United States. Specifically, the DOD is charged with ensuring that, consistent with its mission of providing for the national defense: practical means and measures are used to protect, restore, and enhance the quality of the environment; adverse environmental consequences are avoided or minimized; the widest range of beneficial uses of the environment without degradations, risk to health and and safety, or other undesirable consequences are achieved; important historic, cultural, and natural resources are preserved; a balance between resource use and development with the carrying capacity of the eco-

system involved is achieved; the quality of renewable resources is enhanced; and efforts are made to achieve the maximum level of recycling of depletable resources.

E. U.S. ARs

- AR 200-1, *Environmental Protection and Enhancement*, identifies and lists Department of the Army responsibilities, policies, and procedures to preserve, protect, and restore the quality of the environment. This document and AR 200-2, *Environmental Effects of Army Actions*, together establish Army environmental policy. AR 200-1 contains several citations to NEPA. Section 6-5 outlines environmental documentation requirements and procedures mandated by NEPA and set out in NEPA and AR 200-2 to address environmental issues other than those covered by USEPA/state in the Resource Conservation and Recovery Act (RCRA) permitting process. Section 6-9(a) requires preparation of supporting environmental documents pursuant to NEPA and other laws and regulations for the plans for disposing of chemical warfare agents. Section 9-7(c) requires that all on-the-ground work to carry out the National Contingency Plan (NCP)/RCRA requirements and the Installation Restoration Program (IRP) and Formerly Used Defense Sites (FUDS) projects be conducted per NEPA. In addition, depending on the project and its potential for environmental impact, preparation of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)/Superfund Amendments and Reauthorization Acts (SARA) support documents will adhere to the environmental documentation requirements in NEPA. Section 10-1(a)(2) cites NEPA as one of the several laws to be used in the asbestos management program. Section 12-2(b) sets out matters to be discussed in the NEPA review of alternative methods.

- AR 200-2, *Environmental Effects of Army Actions*, establishes policy, procedures, and responsibilities for assessing the environmental effects of Army actions. It is codified at 32 CFR 651 and implements the following items: the CEQ's NEPA regulations, EO 12114, *Environmental Effects Abroad of Major Federal Actions* and DOD Directive 6050.1. The NEPA process is described in this regulation. AR 200-2 states that for the NEPA process to be effective, it must be integrated with other Army project planning at the earliest possible time. This will ensure that Army planning and decision-making reflects environmental values; the goals of safeguarding the environment and minimizing adverse environmental effects are achieved; and delays and potential conflicts later in the decision-making and implementing processes are avoided. The regulation contains information concerning actions that require environmental evaluation; environmental review categories; determining appropriate environmental documentation; integrating environmental reviews concurrently with other Army planning and decision-making actions; identifying mitigation measures and monitoring systems; proper use of listed categorical exclusions

(CXs) and procedures for amending the list; describes the environmental assessment (EA) and environmental impact statement (EIS) procedures; and describes the method of obtaining public involvement in the environmental decision-making process.

F. Key Compliance Requirements

- AR 200-2 applies to all installations and organizations that have proposed actions. It requires installations to perform various environmental surveys and assessments whenever an action is contemplated that could have an effect on the environment. Actions may not be taking place on the installation being assessed, but if the proponent is there, it should be a review item.

- 40 CFR 1500 through 1508 provides guidance to Federal Agencies on the implementation of the NEPA process. It specifies procedures for compliance with NEPA; defines NEPA documents; requires agencies to list actions normally requiring EISs or EAs; and specifies how agencies may define and use categorical.

G. Responsibility for Compliance

Installation, activity, and unit commanders (ICs) will:

- monitor proposed actions and programs within their commands
- task the appropriate component with preparation of EAs and EISs and development of public involvement
- assure that appropriate environmental documentation is prepared and forwarded to proponent decision-maker(s)
- initiate the preparation of necessary environmental documentation and assess the environmental consequences of proposed programs and projects
- coordinate appropriate environmental documents and public affairs initiatives with Headquarters Department of the Army (HQDA) agencies and the Army Environmental Coordinator
- assist in the review of environmental documents prepared by DOD and other Army or Federal agencies, as requested.

H. Key Compliance Definitions

These definitions were obtained from Army, DOD, and compliance regulations cited previously.

- *Affecting* - will or may have an effect (40 CFR 1508.3).

- *Categorical Exclusions (CXs)* - those actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal Agency and for which, therefore, neither an EA nor an EIS is required (40 CFR 1508.4).

- *Cumulative Impact* - the impact on the environment which results from the incremental impact of the action, when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions (40 CFR 1508.7).

- *Effects* - effects are either direct or indirect. Direct effects are those which are caused by the action and occur at the same time and place. Indirect effects are those which are caused by the action and are altered in time or farther removed in distance, but are still reasonably foreseeable (40 CFR 1508.8).

- *Environmental Assessment (EA)* - refers to a concise public document for which a Federal Agency is responsible, that serves to:
  - briefly provide sufficient evidence and analysis for determining whether to prepare an EIS, or a finding of no significant impact (FNSI)
  - aid an agency's compliance with the Act when no EIS is necessary
  - facilitate preparation of a statement when one is necessary.

  The EA shall include brief discussions of the need for the proposal, or alternatives, and of the environmental effects of the proposed actions and alternatives, and a listing of the agencies and persons consulted (40 CFR 1508.9).

- *Environmental Impact Statement (EIS)* - a detailed written statement required by Section 102(2) of the Act (40 CFR 1508.11).

- *Environmental Monitoring Report (Optional)* - an optional but recommended report prepared at one or more point after program or action execution. Its purpose is to determine the accuracy of impact predictions, and it can serve as the basis for adjustments in mitigation programs and to adjust impact predictions in future projects (AR 200-2, para 3-2c).

- *Environmental Planning Guide (Optional)* - a document prepared before or at the outset of a major program concept exploration. Its use is optional but

encouraged. A concise document intended for use by the program planners and designers, it provides guidelines and supporting rationale by which planners and designers could prevent, avoid, or minimize adverse environmental effect through environmentally sensitive design and planning. It can be made to be a requirement of contractors (AR 200-2, para 3-2a).

- *Environmental Planning Record (Optional)* - this is an optional but recommended document that records the progress and a process of environmental considerations throughout a given program's development. It may be a journal with periodic entries, a file of memoranda, trip reports, and so forth. It is designed to be a visible track record of how environmental factors have actually been considered and incorporated throughout the planning process. It can be made a requirement of contractors (AR 200-2, para 3-2b).

- *Final Environmental Impact Statement (FEIS)* - this document is the result of the analysis of comments concerning the preliminary draft environmental impact statement (PDEIS). Comments are to be received from: designated Federal, state, and local agencies; any agency that has requested copies of impact statements; and the public (including interested or affected persons and organizations) (AR 200-2, para 6-5g).

- *Finding of No Significant Impact (FNSI)* - a document that briefly presents the reasons why an action, not otherwise excluded, does not need an EIS (40 CFR 1508.13).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *Life Cycle Environmental Document (LCED)* - a programmatic assessment addressing the known and reasonably foreseeable environmental impacts of a proposed item/system during all phases of development, production, use, and disposal. It may be in the form of an EA or an EIS, and must be supplemented to address additional significant environmental impacts as conditions change. It is most frequently used within the materiel research, development, and acquisition community (AR 200-2, para 3-1f).

- *Mitigation* - this includes: avoiding the impact altogether by not taking a certain action or parts of an action; minimizing the impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitation, or restoring the affected environment; reducing or eliminating the impact over time for preservation and maintenance operations during the life of the action; compensating for the impact by replacing or providing substitute resources or environments (40 CFR 1508.20).

- *Notice Of Intent (NOI)* - a notice that an EIS will be prepared and considered. It should contain:
  - a description of the proposed action and possible alternatives
  - the proposed scoping process and schedule
  - the name and address of the person who can give more information (40 CFR 1508.22).

- *Preliminary Draft Environmental Impact Statement (PDEIS)* - a document containing information obtained and decisions made during the scoping process (AR 200-2, para 6-5d(1)).

- *Record of Environmental Consideration (REC)* - a document that describes the proposed action and anticipated timeframe, identifies the proponent, and explains why further environmental analysis and documentation is not required. It is a signed statement to be submitted with project documentation. Furthermore, it is used when the proposed action is exempt from the requirements of NEPA, or has been adequately assessed in existing documents and determined not to be environmentally significant. It is also used to document the use of those CXs that require such records (AR 200-2, para 3-1a).

- *Records of Decision (ROD)* - this document is required after completion of an EIS. Generally, it is to: state what the decision was; identify all alternatives considered and specify which alternative was environmentally preferable; and state whether all practicable means to avoid or minimize environmental harm from the selected alternative have been adopted and if not, why not. In addition, it states the monitoring and mitigation program adopted (if needed). It may also discuss preferences among alternatives based on nonenvironmental factors (economic and technological). The ROD is not considered an environmental document since the decision considers these other, nonenvironmental factors in addition to environmental factors (AR 200-2, para 6-5i).

- *Scoping* - this process occurs when the planning for an Army project or action indicates a need for the preparation of an EIS. Scoping determines the scope of issues to be addressed in the EIS and identifies the significant issues related to the proposed action. The parties identify the range of actions, alternatives, and impacts to consider in the EIS (AR 200-2, para 2-6d).

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All installations	12-1 through 12-7	(1)(2)
Documentation	12-8 through 12-10	(2)(10)(21)(26)
CXs	12-11	(2)
EAs	12-12 through 12-22	(1)(2)(10)(21)(22)(26)
EISs	12-23 through 12-36	(1)(2)(21)
Mitigation Measures	12-37 and 12-38	(2)(22)
Life Cycle Environmental Document (LCED)	12-39	(2)(22)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(10) Range Control (DPTMSEC)
(21) Public Affairs Office (PAO)
(22) Staff Judge Advocate
(26) Master Planner (DEH)

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

Plans and Maps to Review

- Scoping plans and conclusions

Records to Review

- REC
- ROD
- EBS or PAS
- EA
- FNSI
- NOI
- EIS (including PDEIS, DEIS, FEIS)
- Environmental agreements
- 1383 report
- News releases
- Troop Construction Projects
- Offpost Actions (i.e., training, leases, maneuvers)

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Range Control (DPTMSEC)
- Staff Judge Advocate
- Master Planner (DEH)
- Public Affairs Office (PAO)
- Action Proponent

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	***REVIEWER CHECKS:***
ALL INSTALLATIONS	(NOTE: Findings under checklist items with CFR and/or AR citations will be Class I findings in this section.)
12-1. Determine actions or changes since previous review (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)(2)
...	...
12-2. The installation should have copies of all relevant Federal, DOD, Army, and state/local regulations concerning the NEPA (GMP).	Determine whether copies of the following regulations and publications, which are applicable, are maintained and kept current at the installation: (1) - 40 CFR 1500 through 1508, *Regulations for the Implementation of the National Environmental Policy Act.* - AR 200-2, *Environmental Effects of Army Actions* (32 CFR 651).
...	...
12-3. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notice of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1) Verify that the existing system addresses the issues associated with NEPA by: (1) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)
...	...
12-4. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning NEPA have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-5. The installation must perform a number of activities in the implementation of NEPA (AR 200-2, para 1-4k).	Verify that the installation: (1)(2) - monitors proposed actions and programs within its command - tasks the appropriate component with environmental review and preparation of EAs and EISs where appropriate, and development of public involvement activities - assures that appropriate environmental documentation is prepared and forwarded to the appropriate proponent - initiates the preparation of necessary environmental documentation and assesses the environmental consequences of proposed programs and projects - coordinates appropriate environmental documents and public affairs initiatives with Major Army Command (MACOM), HQDA agencies, the EC, and ODEPAs required - assists in the review of environmental documents prepared by DOD and other Army or Federal agencies, as requested.
...	...
12-6. The EC should have access to installation and tenant planning processes via attendance at Master Planning Board meetings, Range Control schedules, or other means suitable to the particular installation and its mission (GMP).	Verify that the EC has the listed access and information. (2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-7. The EC should have data available to support determinations associated with appropriate level of NEPA determination (GMP).	Verify that the EC is notified or otherwise has timely project/proposal information to determine appropriate environmental documentation level based on project type. (2) Verify that the EC has the environmental data or information needed to determine the following, or means to obtain the data in a timely manner to make such determination: (2) - CXs - EAs - EISs.
...	...
DOCUMENTATION	
12-8. All potentially affected parties, including the public, will be involved, when practicable, in the development of environmental documentation (AR 200-2, para 7-1).	Determine if the need for public involvement is being met in the following manner: (2)(21) - the development of a plan to include all affected parties (see AR 360-5) - public involvement as a part of the scoping process when an EIS is being prepared - public involvement when appropriate in the development of EAs. Verify that when necessary, the following persons and agencies are contacted: (2)(21) - municipal, township, and county elected and appointed officials - state, county and local government officials and administrative personnel whose official responsibilities include responsibility for activities or components of the affected environment related to the proposed action - local and regional administrators of other Federal agencies or commissions that may control resources potentially affected by the proposed action - members of identifiable population segments within the potentially affected environment - members and officials of those identifiable interest groups of local or national scope that may have interest in the environmental effects of the proposed action or activity - any person or group that has specifically requested involvement.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
12-9. The NEPA process must be integrated into planning for projects at the facility as early as possible in order to prevent delays in project implementation (40 CFR 1501.1 and 1501.2).	Verify that the NEPA process is routinely reviewed as a part of new project development and potentially significant issues identified. (2)(10) Verify that early cooperative consultation among agencies is also a part of new project development. (2)(10) Verify that the facility identifies environmental effects and values in adequate detail so they can be compared to economic and technical analysis. (2)(10) Verify that the facility develops and describes appropriate alternatives to recommended actions in any proposal which involve unresolved conflicts concerning alternative uses of available resources. (2)(10)
...	...
12-10. Army units are required to integrate environmental review concurrently with other planning and decision-making actions (AR 200-2, para 2-6a).	Verify that installation organizations have developed some method to ensure they consult with EC to determine environmental review and documentation requirements for actions they plan or perform. (2)(10)(26) Verify that action proponents have documented compliance with environmental review requirements for actions they plan or perform. (2)(10)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

CXs
 	
12-11. CXs may apply to proposed actions, exempting them from further environmental assessment under specific circumstances (AR 200-2, para 4-1 through 4-4 and Appendix A).
	Verify that prior to using a CX the following actions were taken: (2)
	
	- it was determined that the action appropriately fit one of the CXs listed in Section V of Appendix A, AR 200-2
	  - there is minimal or no individual or cumulative effect on environmental quality
	  - there is no environmentally controversial change to existing environmental conditions
	  - there is a similarity to actions previously examined and found to meet the above criteria
	- it was determined whether or not there were any extraordinary circumstances that might result in the proposed action having an impact on the human environment that would require an EA or EIS including:
	  - greater scope or size than normally experienced for a particular category of action
	  - potential for degradation of already existing poor environmental conditions
	  - employment of unproven technology
	  - presence of threatened or endangered species and their habitats, archaeological materials, historical places, or other protected resources
	  - use of hazardous or toxic substances that may come in contact with the surrounding natural environment
	  - proposed actions affecting areas of critical environmental concern.
	- it was determined that the answer to all the screening questions in Section II of Appendix A, AR 200-2, was a "yes."
	
	Verify that record copies of RECs are available for any projects in which a CX was used. A REC is required according to the listing in Appendix A of AR 200-2. (2)

...	...
EAs	
12-12. An EA must be produced, under certain circumstances, to determine if an EIS is necessary (40 CFR 1501.3 and 1508.9).	Determine if an EA has been completed and submitted to the USEPA Director for review before any contract for action is entered into or action is begun unless: (2) - the action normally requires an EIS - normally does not require either an EIS or an EA (a CX). Verify that the assessment was prepared according to agency policies. (2) (NOTE: Title 40 CFR 1501.3 states that agencies will adopt procedures to indicate when an EA is required to be done.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-13. Certain actions require the preparation of an EA (AR 200-2, para 5-2 and 5-3).	Verify that an EA is prepared for the following actions: (1)(2)(26) - special training or test activity not included in the annual installation training cycle - military construction, including offpost construction - installation pesticide, fungicide, herbicide, insecticide, and rodenticide use programs - changes to established installation land use that may cause environmental impacts - proposed changes in doctrine or policy that may have a potential environmental impact - repair or alteration projects affecting historically significant structures, archaeological sites, or places on, or meeting the criteria for nomination to, the National Register of Historic Places - acquisition, or alteration of a laboratory that will use hazardous chemicals, drugs, or biological or radioactive materials - actions that could potentially cause soil erosion, affect prime or unique farmland, wetlands, floodplains, coastal zones, wilderness areas, aquifers, or other water supplies, or wild and scenic rivers - new weapon systems development and acquisition, in all phases - development of the installation master plan - development of natural resource management plans - proposals that may lead to the excessing of Army real property - actions that take place in, or adversely affect, wildlife refuges - proposals for energy conservation through forest harvest - field activities on land not controlled by the military (includes firing over navigable water, firing 215 meters (m) above ground, and joint air attack training greater than 250 knots and below 3000 feet (ft) above ground level) - any action with local or regional effects on energy availability - an activity that affects species on or proposed for the U.S. Fish and Wildlife Service (FWS) list of Threatened or Endangered Species, or state equivalents - production of hazardous or toxic materials - installation restoration projects - operations and maintenance/Army National Guard (ARNG) projects (to include U.S. Army Reserve (USAR) activities) that will affect environmental quality - site specific deployment of life cycle systems meeting the threshold criteria for requiring an EA - special field training exercises or test activities off Army or DOD property that extend into national airspace (45 m (148 ft) above ground level) - changes to established airspace use that affects the environment or socioeconomic systems, or creates a hazard to nonparticipants - any other action with the potential for cumulative impact on environmental quality when combining effects of other actions or when the action is of a lengthy duration, a violation of pollution abatement standards, or harmful to culturally or ecologically sensitive areas. (NOTE: An EA is not required if the installation has already decided to prepare an EIS.)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-13. (continued)	Verify that installation proponents have received notice of the types of actions they plan or perform which may be likely to require EAs, and that they may be required to perform or fund mitigations committed to in such EAs. (2)(10)(26) Verify that offices responsible for performing mitigation to which the installation has committed in an EA/FNSI, but that did not participate in EA/FNSI development, have received notice of such commitments and are performing or have performed the mitigations. (2)(10)(26)
...	...
12-14. EAs are required to contain specific information (AR 200-2, para 5-4a).	Verify that EAs contain the following information: (1)(2)(22) - purpose and need for the proposed action - description of the proposed action - the alternatives considered, including "no action" - affected environment (baseline conditions) - environmental consequences of the proposed action, and the alternatives - listing of agencies and persons consulted - the conclusion, or finding, on whether the environmental impacts are significant.
...	...
12-15. All EAs must prompt either the preparation of a FNSI, or a NOI to file an EIS (AR 200-2, para 5-5).	Determine whether all EAs for projects (that have not been cancelled or delayed) are accompanied by a FNSI or have been followed by a NOI. (1)(2)(22)
...	...
12-16. Existing EAs are required to be reviewed periodically as the action continues (AR 200-2, para 5-8).	Verify that existing EAs covering actions still in progress are reviewed to verify that the setting, actions, and effects described remain substantially accurate. (2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-17. If, due to the results of an EA, an EIS is not going to be prepared, a FNSI must be prepared according to specific parameters (40 CFR 1501.4(e), 1506.66, and 1508.13).	Verify that FNSIs include the following information: (2) - the name of the action - a brief description of the action (including any alternatives considered) - a short discussion of anticipated environmental effects - the conclusions that have led to the FNSI. Verify that in general the FNSI is made available for public review. (2)(21) Verify that the FNSI is made available for public review for 30 days prior to making a final determination whether to prepare an EIS and before the action begins when: (2)(21) - the proposed action is, or is closely similar to, one which normally requires the preparation of an EIS by the Army - the nature of the proposed action is without precedence.
...	...
12-18. The EA, the FNSI, and all other appropriate planning documents will be provided to the appropriate decisionmaker for review and consideration. The signature page for the EA and the FNSI package will be signed by the appropriate decisionmaker to indicate his or her review and approval (AR 200-2, para 5-4b).	Verify that the decisionmaker(s) for the proposed action has (have) signed and approved both the EA and the FNSI, or a complete package including the EA plus FNSI. (1)(2)
...	...
12-19. FNSIs with national interest will be made available to the public prior to initiation of the proposed action, unless excluded on a security basis, according to specific parameters (AR 200-2, para 2-6b and 5-5c).	Verify that FNSIs that have national interest are submitted with the proposed press release through command channels to Deputy Assistant Secretary of the Army for Environmental, Safety, and Occupational Health (DASA ESOH) for approval and subsequent publication in the Federal Register. (1)(2) Verify that FNSIs with national interest are coordinated with the Office of the Chief of Public Affairs (OCPA). (1)(2) Verify that local publication of the FNSI does not precede publication in the Federal Register. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-20. For actions of local or regional interest, the FNSI will be publicized according to specific parameters (AR 200-2 para 2-6b and 5-5d).	Verify that the following are notified of FNSIs: (1)(2) - state and areawide clearinghouses - Indian tribes when effects may occur on reservations - local newspapers - other local media - potentially interested community organizations including small business associations - newsletters that may be expected to reach potentially interested persons - owners and occupants of nearby housing (by direct mail).
...	...
12-21. EAs and FNSIs are required to be made available for review and comment according to specific time schedules (AR 200-2 para 2-6b(2) and 5-5d).	Verify that if the proposed action is one of national concern, is unprecedented, or normally requires an EIS, the EA or FNSI is made available for public review 30 or more days prior to the final decision. (2)(21) Verify that if the proposed action is one of national concern, is unprecedented, or normally requires an EIS, there is a 30 day public comment period between the time that the FNSI is publicized and the time the proposed action begins. (1)(2)(21) (NOTE: The public comment period may be shortened with MACOM approval.)
...	...
12-22. Installations are required to implement mitigation and/or other considerations established in the EA or FNSI (AR 200-2, para 2-7a and 2-7d).	Verify that mitigation and other conditions established in the EA or FNSI or during their review and commitment as a part of the record of decision are implemented. (1)(2)
...	...
EISs	
12-23. A facility must produce an EIS if certain conditions exist due to a proposed action (40 CFR 1501.4(a), 1501.4(c), and 1502.4).	Verify that the facility produces an EIS for any activity which normally requires an EIS including: (1)(2) - the adoption of new Army programs or regulations - technological developments - broad actions - if the EA indicates it is necessary. (NOTE: Federal Agencies are required to develop policies indicating what types of actions require an EIS.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-24. When two or more agencies propose or are involved in the same action or are involved in a group of actions directly related to each other because of their functional interdependences or geographical proximity, a lead agency will supervise the preparation of the EIS (40 CFR 1501.5 and 1501.6). ...	Determine if the facility is involved in producing an EIS for actions which include agencies other than their own. (1)(2) Determine who the lead agency is. (1)(2) (NOTE: Federal, state, of local agencies, including at least one Federal agency may act as joint lead agencies to prepare an EIS.) Verify that there is a letter or memorandum indicating which agency is the lead agency and which are the cooperating agencies. (1)(2) Verify that if the facility is a lead agency it: (1)(2) - requests the participation of each cooperating agency in the NEPA process at the earliest possible time - use the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise, to the maximum extent possible consistent with its responsibility as lead agency - meets with a cooperating agency at the cooperating agency's request. ...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-25. A proponent of an action must produce an EIS if certain conditions exist due to a proposed action (AR 200-2, para 6-2 and 6-3).	Verify that the installation has prepared EISs for proposed actions that have the potential to: (1)(2) - significantly affect environmental quality or public health or safety - significantly affect historic or archaeological resources, public parks and recreation areas, wildlife refuges or wilderness areas, wild and scenic rivers, or aquifers - have significant adverse effect on properties listed or meeting the criteria for listing in the National Register of Historic Places, or the National Registry of Natural Landmarks - cause a significant impact to prime and unique farm lands, wetlands, floodplains, coastal zones, or ecologically or culturally important areas or other areas of unique or critical environmental concern - result in potentially significant and uncertain environmental effects or unique or unknown environmental risks - significantly affect a species or habitat listed or proposed for listing on the Federal list of endangered or threatened species - either establish a precedent for future action or represent a decision in principle about a future consideration with significant environmental effects - adversely interact with other activities with individually insignificant effects so that cumulatively significant environmental effects result - involves the production, storage, transportation, use, treatment, and disposal of hazardous or toxic materials that may have significant environmental impact. Verify that an EIS has been prepared for the following actions which normally requires an EIS: (1)(2) - significant expansion of a military facility, such as a depot, munition plant, or major training installation - construction of facilities that have a significant effect on wetlands, coastal zones, or other areas of critical environmental concern - the disposal of nuclear materials, munitions, explosives, industrial and military chemicals, and other hazardous or toxic substances that have the potential to cause significant environmental impact - the life cycle development of new materials such as weapons systems that require the construction and operation of new fixed facilities or the significant commitment of natural resources

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-25. (continued)	- land acquisition, leasing or other actions that may lead to significant changes in land use - Continental United States (CONUS) realignment or stationing of a brigade or larger table of organization and equipment unit during peacetime - training exercises conducted outside the boundaries of an existing military reservation where significant environmental damage might occur - major changes in mission of facilities either affecting areas of critical environmental concern or causing potentially significant environmental impact.
...	...
12-26. A draft EIS must be prepared according to a specific format and process (40 CFR 1501.5(d), 1501.7, 1502.5(a), 1502.6, 1502.9 through 1502.18, and 1508.22).	Determine if a NOI of the proposed action is published in the Federal Register and made available to the media in the areas potentially affected by the proposed action. (1)(2) Verify that after the NOI has been published, "scoping" procedures have begun, to determine the relative significance of issues and to what depth they must be addressed in the EIS. (1)(2) Verify that for projects directly undertaken by the Army, the EIS is prepared at the feasibility analysis stage. (1)(2) Verify that a preliminary draft is prepared based on the "scoping" decisions with the following format: (1)(2) - cover sheet: list of responsible agencies: title of proposed action: name, address, and telephone number of the person at the agency who can supply further information: the designation of the statement as draft, final, or draft or final supplement: a one paragraph abstract: date by which comments must be received - summary: must adequately summarize the statement, stressing major conclusions, areas of controversy, and issues to be resolved - table of contents - purpose of and need for action: briefly specifying the underlying purpose and need to which the facility is responding in proposing the alternatives including the proposed action - alternatives including the proposed action: explore and objectively evaluate all reasonable alternatives, identify preferred alternative and explain reasoning - affected environment: description of the area(s) to be affected or created by the alternatives under considerations

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-26. (continued)	- environmental consequences: discussion of direct effects and their significance, indirect effects and their significance, possible conflicts between the proposed action and the objectives of NEPA, environmental effects of alternatives, energy requirements and conservation potential of various alternatives and mitigation measures, natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures, means to mitigate adverse effects - list of preparers: names and qualifications of persons primarily responsible for preparing the EIS or background papers - list of agencies, organizations, and persons to whom copies of the statement are sent - index - appendix: material prepared in coordination with the EIS, normally analytic and relevant to discussions being made. Verify that the EIS is prepared using an interdisciplinary approach. (1)(2)
...	...
12-27. As a part of the EIS process, scoping must be done according to specific requirements (40 CFR 1501.7(a)).	Verify that in the scoping process the lead agency: (1)(2)(21) - invites the participation of affected Federal, state, and local agencies, any affected Indian tribe, the proponent of the action and other interested persons unless there is a limited exception as defined by NRs - determines the scope and the significant issues to be analyzed in depth in the EIS - identifies and eliminates from detailed study the issues which are not significant or which have been covered by prior environmental review - allocates assignments for preparation of the EIS among the lead and cooperating agencies with the lead agency retaining responsibility for the statement - indicates any public EAs and other EISs which are being or will be prepared that are related but are not part of the scope of the EIS under consideration - identifies other environmental review and consultation requirements so that other analyses and studies may be prepared concurrently with, and integrated with the EIS - indicates the relationship between the timing of the preparation of environmental analyses and the agency's tentative planning and decision making schedules.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-28. Public interaction in the EIS process through scoping must be done according to specific procedures (AR 200-2, para 7-2 through 7-5).	Verify that in the preliminary phase of scoping the following actions are done: (1)(2)(21) - the significant issues to be analyzed are incorporated in the NOI - the office or person responsible for matters related to the scoping process is identified in the NOI - the method by which the installation will invite participation of affected parties is identified and a tentative list created - the proposed method of accomplishing scoping is identified - a relationship is initiated between the timing of the preparation of the environmental analysis and the tentative planning and decisionmaking schedule - any exemptions are identified in the NOI. Verify that in the public interaction phase of scoping the following actions are taken: (1)(2)(21) - comments are solicited from all affected parties and respondents to the NOI - comments are solicited from technical representatives at the installation - comments are solicited from one or more representatives from any Army-contracted consulting firm if one has been retained to participate in writing the EIS or providing reports - comments are solicited from experts in various environmental disciplines. Verify that all scoping participants are provided with the information developed during the preliminary phase and as much of the following as may be available: (1)(2)(21) - a brief description of the environment at the affected location - a description of the proposed alternatives - a tentative identification of any public EAs and other EISs that are being or will be prepared that are related but are not a part of the scope of impact - any additional scoping issues or limitation on the EIS - the lead and cooperating agencies are identified.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

12-29. Public involvement is a required part of the EIS process (40 CFR 1506.6).	Verify that the Army made a diligent effort to involve the public including: (1)(2)(21)
	- providing public notice of NEPA-related hearings, public meetings, and the availability of environmental documentation such as:
	  - mailing of notices to those who have requested it on an individual action
	  - notice in the Federal Register and mailings to national organizations reasonably expected to be interested if the action is of national concern
	  - notice to the state, local Indian tribes, local newspapers and other local media if the action is of local concern
	- holding or sponsoring public meetings in response to:
	  - substantial environmental controversy or substantial interest in holding the meeting
	  - a request for a hearing by another agency with jurisdiction over the action supported by reasons the hearing would be helpful
	- soliciting appropriate information from the public
	- explanations of where individuals can get information or status reports.

...	...
12-30. After the preparation of the draft EIS, the Army is required to obtain and request comments from specific individuals (40 CFR 1502.19 and 1503.1).	Verify that prior to preparing the final EIS, the agency obtained the comments of any Federal agency with jurisdiction by law or special expertise with respect to any environmental impact involved or which is authorized to develop and enforce environmental standards. (1)(2) Verify that prior to preparing the final EIS, comments were requested from the following: (1)(2) - appropriate state and local agencies which are authorized to develop and enforce environmental standards - Indian tribes, when the effects may be on a reservation - any agency which has requested that it receive statements on actions of the kind proposed. Verify that comments were requested from the applicant, if any. (1)(2) Verify that comments were requested from the public. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-31. When preparing the final EIS specific actions are required (40 CFR 1503.4).	Verify that when preparing the final EIS, all comments are assessed and considered and responded to in one of the following ways: (1)(2) - the alternatives are modified, including the proposed action - alternatives not previously given serious consideration by the agency are developed and evaluated - the analysis is supplemented, improved, or modified - an explanation is provided as to why the comments do not warrant further agency response. Verify that all substantive comments received on the draft (or a summary of the comments) is attached to the final statement whether or not the comment is thought to merit individual discussion. (1)(2)
...	...
12-32. Under certain circumstances, supplements to the draft or final EIS must be prepared (40 CFR 1502.9(c)(1) and 1502.9(c)(4)).	Verify that a supplement is prepared if one of the following occurs: (1)(2) - the agency makes substantial changes in the proposed action that are relevant to environmental concern - there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. Verify that the supplement is prepared, circulated, and files in the same way that a draft and final statement unless alternate procedures have been approved by the CEQ. (1)(2)
...	...
12-33. At the time of a decision, agencies are required to prepare a concise public ROD (40 CFR 1505.2).	Verify that the record states what the decision was and: (1)(2) - identifies all alternatives considered in reaching the decision, specifying the alternative or alternatives considered to be environmentally preferable - a statement as to whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why not.
...	...
12-34. A copy of the signed ROD must be forwarded to the Office, Director of Environmental Programs (AR 200-2, para 3-1g and 6-5).	Verify that a copy of the signed ROD has been forwarded to the Office, Director of Environmental Programs. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-35. When implementing the decision, the Army must meet specific requirements (40 CFR 1505.3)	Verify that mitigation and other conditions established in the EIS or during its review and committed as a part of the decision are implemented. (1)(2) Verify that appropriate conditions are included in grants, permits, or other approvals. (1)(2) Verify that funding is based on actions of mitigation. (1)(2) Verify that results of relevant monitoring are made available upon request. (1)(2)
...	...
12-36. Specific records must be maintained in certain circumstances (AR 200-2, para 3-1).	Verify that the following records are maintained: (2) - REC - EA - FNSI - NOI - EIS - LCED - ROD. Verify that LCEDs prepared elsewhere are included as part of EA/EIS packages for items or systems being developed, tested, produced, or fielded at the installation. (2) Verify that mitigation/monitoring records are maintained and kept current. (2)
...	...
MITIGATION MEASURES	
12-37. The proponent, or other appropriate agency, will implement mitigation and other conditions established in the EA or EIS or during its review, and committed as part of the FNSI or the ROD (AR 200-2, para 2-7a through 2-7c, 2-7d(3), 6-5l, and 6-5m).	Verify the following: (2) - funds have been committed to perform commitments made in FNSI or ROD and mitigations adopted in EAs/EISs are actually being performed, or, if not, that EAs/EISs are revised and reissued for public comment to reflect the difference - if necessary, pending or ongoing actions are delayed to accommodate decisionmaker, EC, and legal review and renotification of the public - a monitoring and enforcement program is adopted and summarized in the ROD, if appropriate or applicable.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
12-38. Legal documents implementing the action (contracts, permits, grants, etc.), will specify mitigation measures to be performed (AR 200-2, para 2-7d(2)).	Review legal documents supporting the action and verify that mitigations are included as appropriate, including contractor penalties in suitable circumstances. (2)(22)
...	...
LCED	
12-39. The LCED must address known and reasonable foreseeable environmental impacts of proposed programs/ systems during all phases (AR 200-2, para 3-1(f)).	Review environmental documentation for known and foreseeable environmental impacts during all phases of proposed programs/systems to include development, production, use, and ultimate disposal. (2)(22)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

INSTALLATION:	COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (10) Range Control (DPTMSEC) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (26) Master Planner (DEH)

Section 13

ASBESTOS MANAGEMENT PROGRAM

SECTION 13

ASBESTOS MANAGEMENT PROGRAM

A. Applicability of this Protocol

This protocol applies to all Army installations. Currently this section contains protocols for asbestos. Asbestos is regulated on the Federal level by the United States Environmental Protection Agency (USEPA), though in some cases states have also promulgated regulations. The Asbestos Management protocol is written in response to the Federal regulations applicable to the conduct of activities involving asbestos management.

Specific state regulations are not included in this protocol. However, an outline of the typical contents of such regulations is provided.

The Asbestos Management protocol is used to determine the compliance status of the management activities associated with asbestos on the installation and in schools, and its removal from buildings and ultimate disposal.

B. Federal Legislation

- *The Toxic Substances Control Act (TSCA).* This Act, as last amended in 1986, 15 U.S. Code (USC) 2601-2671, is the Federal legislation which deals with the control of toxic substances. The Act consists of three subchapters, one of which regulates the control of toxic substances, another governs asbestos hazard emergency response, and another subchapter regulates indoor radon abatement. The purpose of the Act regarding asbestos hazard is:
  - to provide for the establishment of Federal regulations which require inspection for asbestos-containing material (ACM) and implementation of appropriate response actions with respect to ACM in the nation's schools in a safe and complete manner
  - to mandate safe and complete periodic reinspection of school buildings following response actions, where appropriate
  - to require the USEPA to conduct a study to find out the extent of the danger to human health posed by asbestos in public and commercial buildings and the means to respond to any such danger (15 USC 2641(b)).

The Secretary of Defense, in cooperation with the USEPA, must, to the extent feasible and consistent with the national security, take such action as may be necessary to provide for the identification, inspection, and management (including abatement) of asbestos in any building used by the Department of Defense

(DOD). Such identification, inspection, and management (including abatement) must, subject to the preceding sentence, be carried out in a manner comparable to the manner in which a local educational agency is required to carry out such activities with respect to a school building under this Act (15 USC 2643(L)(2)).

- *The Asbestos Hazard Emergency Response Act (AHERA) of 1986.* This Act, (amended in November 1990) 15 USC 2641-2656, et al, and 20 USC 4014, et al, is the Federal legislation which governs the control and abatement of asbestos hazard present in school buildings. The purpose of this Act is:
  - to provide for the establishment of Federal regulations which require inspection for ACM and implementation of appropriate response actions with respect to ACM in the nation's schools in a safe and complete manner
  - to mandate safe and complete periodic reinspection of school buildings following response actions, where appropriate
  - to require the USEPA to conduct a study to find out the extent of the danger to human health posed by asbestos in public and commercial buildings and the means to respond to any such danger (15 USC 2641(b)).

- Executive Order (EO) 12088, *Federal Compliance with Pollution Standards*, of 13 October 1978 requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for seeing to it that the agencies, facilities, programs, and activities it funds meet applicable Federal, state, and local environmental requirements or to correct situations that are not in compliance with such requirements. In addition, the EO requires each agency to ensure that sufficient funds for environmental compliance are included in the agency budget.

C. State/Local Requirements

Many state and local governments have enacted standards more stringent than the Federal requirements. If the installation engages in asbestos removal or disposal, contact the appropriate state and local agencies.

D. DOD Regulations

- None.

E. U.S. Army Regulations (ARs)

- AR 200-1, *Environmental Protection and Enhancement*, Chapter 10, *Asbestos Management Program*, prescribes policy and procedures for managing asbestos and ACM and wastes. It requires compliance with all applicable Federal, state, and local regulations relative to asbestos management.

F. Key Compliance Requirements

- National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations apply to existing and new stationary sources. The regulations are based on health effects and a strong reliance on technological capabilities. Army installations involved in the demolition or renovation of buildings that contain asbestos are likely to be affected by these regulations. The USEPA and state must be given prior notification if renovation or demolition is planned. Installations involved in these activities must control the emissions that are caused by the removal of friable asbestos. Once the asbestos has been removed, it must be disposed of in accordance with the *Clean Air Act* (CAA) and the *Hazardous Materials Transportation Act*. The asbestos waste products must be disposed of in leakproof containers with proper hazard labeling. Installations that operate primary and secondary schools must test friable materials for asbestos content and document these results.

G. Responsibility for Compliance

- Directorate of Engineering and Housing (DEH) establishes an installation asbestos management team and appoints an asbestos management control officer or team leader. The DEH will also maintain records of asbestos survey results and plans and updates the records as changes occur. Additionally, DEH will maintain records for 30 years (yr) after the last incidence of employee exposure to asbestos.

- Asbestos Management Team prepares the Asbestos Management Plan which contains documentation on all asbestos management efforts and the mechanism

for oversight of the program. The team, as a minimum, consists of representatives from DEH, Environmental Office, Preventive Medicine, Safety Office, Civilian Personnel Office (CPO), Staff Judge Advocate (SJA), and Public Affairs Office (PAO).

H. Key Compliance Definitions

These definitions were obtained from Army, DOD, and compliance regulations cited previously.

- *Active Waste Disposal Site* - any disposal site other than an inactive site (40 Code of Federal Regulations (CFR) 61.141).

- *Adequately Wetted* - sufficiently mixed or penetrated with liquid to prevent the release of particulates (40 CFR 61.141).

- *Asbestos* - substances comprised of or derived from actinolite, amosite, anthophyllite, chrysotile, crocidolite, or tremolite (40 CFR 61.141).

- *Asbestos-Containing Waste Materials* - any waste that contains commercial asbestos and is generated by a source subject to the provisions of 40 CFR 61.141. This term also includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated ACM waste and materials contaminated with asbestos including disposable equipment and clothing (40 CFR 61.141).

- *Asbestos Material* - asbestos or any material containing asbestos (40 CFR 61.141).

- *Asbestos Waste from Control Devices* - any waste material that contains asbestos and is collected by a pollution control device (40 CFR 61.141).

- *Category I Nonfriable ACM* - asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos (40 CFR 61.141).

- *Category II Nonfriable ACM* - any material, excluding Category I Nonfriable ACM, containing more than 1 percent asbestos (40 CFR 61.141).

- *Commercial Asbestos* - any material containing asbestos that is extracted from ore and has value because of its asbestos content (40 CFR 61.141).

- *Cutting* - to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching (40 CFR 61.141).

- *Demolition* - the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations, or the intentional burning of any facility (40 CFR 61.141).

- *Emergency Renovation Operation* - a renovation operation that was not planned but results from a sudden, unexpected event that if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by nonroutine failures of equipment (40 CFR 61.141).

- *Facility Component* - any part of a facility, including equipment (40 CFR 61.141).

- *Friable Asbestos Material* - any material that contains more than 1 percent asbestos by weight that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure (40 CFR 61.141).

- *Fugitive Source* - any source of emissions not controlled by an air pollution control device (40 CFR 61.141).

- *Glove Bag* - a sealed compartment with attached inner gloves used for handling of ACM (40 CFR 61.141).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *In Poor Condition* - the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material (40 CFR 61.141).

- *Inactive Waste Disposal Site* - any disposal site or portion of it where additional asbestos-containing waste material has not been deposited within the past year (40 CFR 61.141).

- *Nonscheduled Renovation* - a renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operating experience, but for which an exact date cannot be predicted (40 CFR 61.141).

- *Outside Air* - the air outside buildings and structures, including but not limited to, air under a bridge or an open ferry (40 CFR 61.141).

- *Particulate Asbestos Material* - finely divided particles of asbestos or material containing asbestos (40 CFR 61.141).

- *Planned Renovation Operations* - a renovation operation, or a number of such operations, in which some Regulated Asbestos-Containing Material (RACM) will be removed or stripped within a given period of time and that can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience (40 CFR 61.141).

- *RACM* - includes friable asbestos material; Category I Nonfriable ACM that has become friable; Category I Nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; and Category II Nonfriable asbestos containing material that has a high probability of becoming crumbled, crushed, or pulverized (40 CFR 61.141).

- *Remove* - to take out regulated ACM from any facility (40 CFR 60.141).

- *Renovation* - altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolition (40 CFR 61.141).

- *Strip* - to take off RACM from any part of a facility (40 CFR 61.141).

- *Structural Member* - any load-supporting member of a facility, such as beams and load-supporting walls; or any nonload-supporting member, such as ceilings and nonload-supporting walls (40 CFR 61.141).

- *Visible Emissions* - any emissions which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste materials, or from any asbestos milling, manufacturing, or fabricating operations. This does not include condensed water vapor (40 CFR 61.141).

ASBESTOS MANAGEMENT PROGRAM

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All installations with asbestos	13-1 through 13-10	(1)(2)(3)(6)(9)
Personnel safety	13-11 through 13-13	(1)(2)(3)(9)
Renovation and demolition notification	13-14 and 13-15	(1)(2)
Renovation and demolition	13-16 through 13-22	(1)(2)(6)(9)
Disposal	13-23 through 13-27	(1)(2)(6)(9)
Asbestos in schools	13-28 through 13-37	(1)(2)(9)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(3) Preventive Medicine Officer
(6) Director of Logistics (DOL)
(9) Chief of Operations and Maintenance (O&M)

ASBESTOS MANAGEMENT PROGRAM

Plans and Maps to Review

- Installation asbestos management plan and operating plan
- List of buildings insulated with asbestos or housing ACM

Records to Review

- List of buildings insulated with asbestos or housing ACM
- Notifications to regulators concerning asbestos disposal
- Records of onsite disposal and transportation, and offsite disposal of asbestos
- Regulatory inspection reports
- 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
- ROD on renovation projects completed in the past 5 yr that involve friable asbestos
- Decision documents / ROD
- Administrative Record

Physical Features to Examine

- Pipe, spray-on, duct, and troweled cementitious insulation and boiler lagging
- Ceiling and floor tiles
- Asbestos insulation in equipment (exhaust systems, generators, vehicles, aircraft, etc.)
- Maintenance shops (brake shoes, clutch plates)

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Preventive Medicine Officer
- Director of Logistics (DOL)
- Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
13-1. Determine actions or changes since previous review of asbestos management (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)(2)
...	...
13-2. Copies of all relevant Federal, DOD, U.S. Army, and state/local regulations on asbestos management should be maintained at the installation (GMP).	Determine whether copies of the following regulations, which are applicable, are maintained and kept current at the installation: (1)(2) - 40 CFR 61, Subpart M, *USEPA National Emission Standards for Asbestos.* - 40 CFR 763, *Asbestos-Containing Materials in Schools.* - EO 12088, *Federal Facilities Compliance with Pollution Standards.* - AR 200-1, *Environmental Protection and Enhancement.* - AR 385-10, *The Army Safety Program.* - TB MED 502, *Occupational and Environmental Health: Respiratory Protection Program.* - TB MED 513, *Occupational and Environmental Health Guidelines for the Evaluation and Control of Asbestos Exposure.* - Applicable state and local regulations. (NOTE: OSHA regulations designed to protect workers handling asbestos (29 CFR 1910) are not in this protocol.)
...	...
13-3. Installations are required to comply with applicable state and local requirements (EO 12088, Section 1-1).	Verify that the installation is complying with applicable state and local asbestos requirements. (1) Verify that the installation is operating according to permits issued by the state or local agencies. (1)(2) (NOTE: Issues that are typically regulated by state and local agencies include: - certification of individuals sampling and/or working with asbestos - renovation and demolition procedures - handling and disposal procedures.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2) Verify that the existing system addresses the issues associated with asbestos management by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)
...	...
13-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning asbestos have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-6. Installations must complete a survey of all structures by 23 May 1991 (AR 200-1, para 10-2j and 10-3b(1-3)).	Verify that survey was completed by 23 May 1991. (1)(2)(9) Verify that the survey(s) was completed by accredited personnel who met the inspector training requirements of AHERA, and applicable Federal, state, and local requirements. (1)(2) Verify that personnel were supervised by a qualified industrial hygienist or other qualified environmental professional who meets the requirements of "competent person" as specified in 29 CFR 1926.58(b). (1)(2) Determine if the survey is prioritized as follows: (1)(2) - buildings in aging or deteriorated condition that present significant exposure potential - structures that are occupied or likely to be occupied - structures to be repaired, altered, or demolished - Department of the Army (DA) controlled schools or child development centers - hospitals - residential housing. Verify that the annual follow-up inspections are being done by accredited personnel to identify and report damage and deterioration of asbestos. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-7. Installations are required to prepare, coordinate, and execute an Installation Asbestos Management Plan (AR 200-1, para 10-3).	Verify that an Installation Asbestos Management Plan has been prepared. (1)(2)(6)(9) Verify that the plan contains the following information: (1)(2) - a complete list of operations and maintenance schedules, design plans, and specifications that identify structures scheduled for repair, alteration, and demolition - an installation-wide survey of all structures to determine the location, extent, and condition of all asbestos - documentation of the presence, extent, and condition of asbestos and assessment criteria - an assessment for each occurrence of asbestos as to the potential for environmental release and risks to human health and the environment that was done by personnel meeting the management planner training requirements of AHERA and other applicable Federal, state, and local requirements - preparation, coordination, and immediate implementation of abatement plans to minimize potential for asbestos exposure for each area where it exists - preparation, coordination and immediate implementation of a special Operations and Maintenance (O&M) plan for each occurrence of asbestos to monitor the condition of asbestos and minimize releases and human exposure - provision for worker education/training programs - an environmental impact analysis of the Installation Asbestos Management Plan (as required by AR 200-2). (NOTE: Asbestos Management Plans may be incorporated into existing environmental management documents.)
...	...
13-8. Asbestos-related actions that have the potential to generate fugitive asbestos emissions must be environmentally assessed as specified in AR 200-2 (AR 200-1, para 10-4d).	Verify that the installation's asbestos management plans and asbestos-related actions that could produce fugitive asbestos emissions are environmentally assessed. (1)(2)(3)(6)(9) Verify that if the environmental assessment (EA) results in a Finding of No Significant Impact (FNSI), the finding is published throughout the affected geographic area. (1)(2)
...	...
13-9. Installations are required to identify in detail and validate the existence, extent, and condition of all asbestos, friable and nonfriable, in all structures prior to renovation, demolition, or excessing (AR 200-1, para 10-2k).	Verify that the installation has identified and verified the existence of both friable and nonfriable asbestos on all DA controlled structures prior to renovation, demolition, or excessing. (1)(2)(9) Verify that employees, visitors, and contractors are notified of any asbestos-related health hazard. (1)(2)(9)

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-10. Friable materials with the potential to be contaminated with asbestos should be tested (GMP).	Examine the facility for friable insulation, roofing, and flooring. (1)(2)(9) Verify that friable materials with the potential for asbestos contamination that are located in areas of worker exposure are tested. (1)(2)(9)
...	...
PERSONNEL SAFETY	
13-11. Installations are required to provide personnel working with asbestos with proper education, training and the necessary protective equipment (AR 200-1, para 10-2f, para 10-2i, para 10-2q).	Verify that workers are provided with appropriate training and personal protective equipment as specified in AR 385-10, TB MED 502, 29 CFR 1910.1001, and 29 CFR 1926.59. (1)(2)(3) Verify that a procedure exists to notify individuals who are occupationally exposed to asbestos. (1)(2)(3)
...	...
13-12. Employees working with asbestos are required to have physical examinations (TB MED 513).	Verify that all employees working with asbestos are given physical examinations as required by TB MED 513: (2)(3) - before beginning work with asbestos - annually while employed - at termination of employment.
...	...
13-13. When air cleaning is used as a method for controlling emissions of asbestos to the outside air, the fabric filter collection systems are required to meet specific standards unless alternative equipment is authorized for use by the USEPA (40 CFR 61.152).	Verify that fabric filter collection systems meet the following requirements: (1)(2)(9) - the device is operated at a pressure drop of no more than 0.995 kilopascals (kPa) (4 inches (in.) water gage), as measured across the filter fabric - airflow permeability does not exceed 9 meters cubed (m^3)/minute (min)/m^2 for woven fabrics or 11 m^3/min/m^2 for felted fabrics - the felted fabric weighs at least 475 grams (g)/m^2 (14 ounces (oz)/sq yd) and is at least 1.6 millimeters (mm) thick throughout - the use of synthetic fabrics containing fill yarn other than that which is spun is avoided.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RENOVATION AND DEMOLITION NOTIFICATION	
13-14. Installations that demolish facilities containing at least 80 linear meters of RACM on pipes, or at least 15 m^2 of RACM on other facility components or at least 1 m^3 on off facility components, and installations renovating structures and stripping or removing at least 80 linear meters RACM on pipes, or at least 15 m^2 (160 sq ft) of friable asbestos on other facility components and at least 1 m^3 on off facility components must meet certain notification requirements (40 CFR 61.145(a)(1), 61.145 (a)(3), and 61.145(b)).	Determine whether USEPA and/or appropriate state agency has been provided with written notice of intent to demolish or renovate at least 10 days before demolition begins and as early as possible before renovation begins. (1)(2) Examine written notice for the following information: (1) - name and address of installation - a description of facility being renovated or demolished (size, age, prior use) - estimates of approximate amount (linear feet or surface area) of asbestos present in the facility - the location of the facility - the scheduled start and completion dates of renovation or demolition - the nature of planned demolition or renovation methods to be used - procedures for asbestos emissions control - the name and location of waste disposal site where asbestos will be disposed) - whether or not it is a revised notification - after 20 November 1991, certification that at least one trained person will supervise. (NOTE: Installations are also required to submit notifications following these guidelines for facilities being demolished under an order of a state or local governmental agency because the facility is structurally unsound and in danger of imminent collapse.)
...	...
13-15. Installations demolishing a facility with RACM of less than 80 linear meters on pipes and less than 15 m^2 on other facility components and less than 1 m^3 on off facility components shall submit notification of demolition (40 CFR 61.145(a)(2) and 61.145 (b)).	Verify that a written notice of intent to demolish has been submitted to the Administrator at least 10 days before demolition and includes: (1)(2) - the name and address of owner and operator - a description of the facility being demolished including the size, age, and prior use - the estimate of the approximate amount of friable asbestos present - the location of the facility - a schedule - procedures to be used.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

RENOVATION AND DEMOLITION
 	
13-16. Installations that demolish facilities which contain at least 80 linear meters of RACM on pipes, or at least 15 m^2 of RACM on other facility components or at least 1 m^3 on off facility components and installations renovating structures and stripping or removing at least 80 linear meters of friable asbestos on pipes, or at least 15 m^2 (160 sq ft) of friable asbestos on other facility components or 1 m^3 or more on off facility components must meet certain emission control requirements (40 CFR 61.145(a)(1), 61.145 (a)(3), 61.145(a)(4), and 61.145(c)(1) through 61.145(c)(3)).
 	
...
	Verify that all RACM is removed from facilities being demolished or renovated before any wrecking or dismantling unless: (1)(9)
	
	-
	- it is a Category I nonfriable ACM that is not in poor condition and is not friable
	- the RACM is on a facility component that is encased in concrete or other similar material and is adequately wetted whenever exposed during demolition
	- it was not accessible for testing and is not discovered until after demolition began and, as a result of demolition, the materials cannot be safely removed
	- it is Category II nonfriable ACM and the probability is low that the materials will become crumbled, pulverized, or reduced to powder, during demolition.
	
	Verify that when a facility component that contains or is covered or coated with RACM is being taken out of the facility in units or sections: (1)(9)
	
	- they are adequately wetted when RACM are exposed during cutting and disjointing operations, and
	- the units or sections are carefully lowered to ground level.
	
	Verify that RACM is adequately wetted when it is being stripped from facility components while it remains in place in the facility except in renovation operation where wetting would unavoidably damage equipment and the installation: (1)(9)
	
	- requests a determination from the Administrator as to whether unavoidable damage would occur and supplies the Administrator with the information needed to make the decision, and
	- uses one of the following emission control methods:
	  - a local exhaust ventilation and collection system
	  - a glove bag system
	  - leaktight wrapping to contain all RACM.
	
	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-17. Emissions from facility components that have been taken out in units or in sections from facilities being demolished under state or local orders or facilities being demolished or renovated with at least 80 linear meters of RACM on pipes, or at least 15 m^2 of RACM on other facility components or at least 1 m^3 on off facility components must be controlled (40 CFR 61.145 (c)(4) and 61.145(c)(5)).	Verify that facility components are either stripped or contained in leaktight wrappings. (1)(9) Verify that when facility components are removed from the facility as units or in sections for stripping: (1)(9) - the RACM is adequately wetted during stripping operations - a local exhaust ventilation and collection system designed and operated to capture emissions is in use - the exhaust system exhibits no visible emissions to outside air. Verify that when wetting operations are stopped because of the temperature, a record of the temperature is made and kept on file for 2 yr. (1)(9) (NOTE: For large facility components such as reactor vessels, large tanks, and steam generators, but not beams, stripping is not required if the following are met: - the component is removed, transported, stored, disposed of, or reused without disturbing the RACM - the component is encased in leaktight wrapping and labeled.)
...	...
13-18. Emissions from RACM that has been removed or stripped from facilities being demolished under state or local orders or facilities being demolished or renovated with at least 80 linear meters of RACM on pipes, or at least 15 m^2 of RACM on other facility components or 1 m^3 or greater on off facility components must be controlled (40 CFR 61.145 (c)(6)).	Verify that asbestos materials that have been removed or stripped: (1)(2)(9) - are adequately wet, and remain wet until collected for disposal - are carefully lowered to the ground or lower floor (not dropped or thrown) - are not removed as units or in sections are transported to the ground via dust-tight chutes or containers if they are removed more than 127 centimeter (cm) (50 ft) above ground level.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-19. When the temperature at the point of wetting is below 0 ^{0}Celsius (C) and facilities are being demolished under state or local orders or facilities with at least 80 linear meters of RACM on pipes, or at least 15 m^2 of RACM other facility components c. at least 1 m^3 on off facility components are being demolished or renovated, specific exemptions and requirements apply (40 CFR 61.145(c)(7)).	Verify that facility components coated or covered with RACM are removed as units or in sections to the maximum extent possible. (1)(2)(9) (NOTE: Wetting is not required at this temperature.) Verify that when wetting operations are stopped because of freezing temperatures, the temperature is recorded in the areas containing the facility components at the beginning, middle, and end of each work day. (1)(2)(9) Verify that temperature records are kept for 2 yr. (1)(2)(9)
...	...
13-20. Facilities being demolished under state or local governmental agency orders shall have the portion of the facility containing friable asbestos adequately wetted during the wrecking operation (40 CFR 61.145(c)(9)).	Verify that in facilities being demolished under state or local governmental agency orders, the portion of the facility that contains friable asbestos materials is adequately wetted during the wrecking operation. (1)(2)(9)
...	...
13-21. When a facility is demolished by intentional burning, all RACM, including Category I and II nonfriable ACM, must be removed (40 CFR 61.145(c)(10)).	Verify that complex removal is done before burning. (1)(6)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-22. No RACM shall be stripped, removed, or otherwise handled or distributed unless at least one onsite representative trained in asbestos removal is present (40 CFR 61.145(c)(8)).	Verify that a trained person is present. (1)(6) Verify that the individual receives refresher training every 2 yr. (1)(6)
...	...
DISPOSAL	
13-23. Asbestos-containing waste materials are required to be disposed of properly (40 CFR 61.150(a) and 61.150(b)).	Verify that no visible emissions are discharged to the outside air during the collection, processing, packaging, transporting, or depositing of asbestos-containing waste material, or that the facility uses one of the following methods: (1)(2)(9) - the asbestos-containing waste is adequately wetted - the asbestos-containing waste is processed into nonfriable forms - an alternative method approved by the USEPA. Verify that if the waste is wetted: (1)(9) - asbestos waste from control devices is mixed with water to form a slurry and the other materials are adequately wetted - no visible emissions are discharged or air cleaning is used to control the emissions - the wetted materials are sealed in leaktight containers while wet and labeled with the phrase "CAUTION, Contains Asbestos - Avoid Opening or Breaking Container, Breathing Asbestos is Hazardous to Your Health" or a label approved by Occupational Safety and Health Administration (OSHA) - materials that don't fit in containers are put into leaktight wrapping. Verify that the waste generator deposits all ACM as soon as practicable at one of the following: (1)(2) - a properly operated waste disposal site - a USEPA approved site that converts RACM and asbestos-containing waste material intro asbestos-free material. (NOTE: These requirements do not apply to Categories I or II nonfriable ACM that did not become crumbled, pulverized, or reduced to powder.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-24. Asbestos-containing waste must be properly transported (40 CFR 61.150(c) through 61.150(e)).	Verify that vehicles used to transport asbestos-containing waste material are marked indicating an asbestos dust hazard. (1)(6) Verify that for all ACM transported off the facility, waste shipment records are maintained for at least 2 yr and a copy is provided to the waste disposal site. (1)(6) Verify that a procedure is in place to notify the local, state, or USEPA regional office if a copy of the waste shipment record is not returned to the waste generator within 45 days after the waste was accepted by the initial transporter. (1)(6)
...	...
13-25. Active waste disposal sites where ACM is being disposed are required to meet specific standards (40 CFR 61.154(a) through 61.154(e) and 61.154(i) through 61.154(j)).	Determine if the installation is operating a landfill where asbestos is being disposed. (1) Verify that there are no visible emissions from active asbestos-containing waste disposal sites, or that: (1)(2)(9) - at the end of each operating day, or once in a 24-hour (h) period, the waste material is covered with either at least 15 cm (6 in.) of compacted non-ACM, or - a resinous or petroleum based dust suppression agent is applied, waste crankcase oil is not suitable for this purpose - an alternative method of control approved by the USEPA is used. Verify that unless a natural barrier exists deterring access by the general public, either the waste is properly covered by non-ACM daily or proper warning signs and fences are installed and maintained as follows: (1)(2)(9) - warning signs are displayed at all entrances at intervals of 100 m (328 ft) or less along property line of the site or the perimeter of the section of the site where ACMs are disposed and state that the site contains asbestos and warns against creating dust - the area is adequately fenced. Verify that a copy of waste shipment records are maintained for 2 yr. (1)(6) Verify that until closure, a record is kept of the location, depth, and area of asbestos-containing waste on a map or diagram of the disposal area. (1)(6) Verify that upon closure, the administration receives a copy of all records. (1)(6) Verify that a procedure is in place to notify the administration in at least 45 days prior to excavating or disturbing deposited asbestos-containing waste material. (1)(6)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-26. Inactive waste disposal sites are required to meet specific standards (40 CFR 61.151 and 40 CFR 61.154(f) through 61.154(h)).	Verify that inactive waste disposal sites meet one of the following: (1)(6) - no visible emissions are discharged - asbestos-containing waste material is covered with at least 15 cm (6 in.) of compacted non-ACM, and a vegetation cover is grown and maintained. (In desert areas where vegetation is difficult to maintain at least 8 cm (3 in.) additional of well-graded nonasbestos-containing crushed rock may be used instead.) - the asbestos-containing waste material is covered with at least 60 cm (2 ft) of non-ACM and the cover is maintained to prevent exposure. Verify that unless a natural barrier exists, warning signs and a fence are installed to deter public access. (1)(6) Verify that warning signs are displayed at all entrances and at intervals of 100 m (328 ft) or less and are easily read indicating the area is an asbestos waste disposal site. (1)(6) Verify that a procedure is in place to notify the administrator in writing at least 45 days prior to excavating or disturbing any asbestos-contaminated waste material at an inactive waste disposal site. (1)(2)
...	...
13-27. Real property that contains ACM must be disposed of according to specific parameters (AR 200-1, para 10-2n and 10-2o).	Verify that all excess real property containing asbestos is disposed of in accordance with AR 405-90. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ASBESTOS IN SCHOOLS	
13-28. Each building that is leased, owned, or otherwise used as a school building is required to be inspected for asbestos and a report of the inspection generated (40 CFR 763.85).	Determine which buildings at the installation are used as school buildings. (1)(2)(9) Verify that the buildings have been inspected for asbestos, including sampling, by an accredited inspector. (1)(2)(9) Verify that reinspection of all friable and nonfriable unknown or assumed asbestos-containing building material (ACBM) occurs every 3 yr after a mangement plan is in place. (1)(2)(9) Verify that each inspection and reinspection is documented in a report that is included in the management plan. (1)(2)(9) (NOTE: Any building that is leased or acquired on or after 12 October 1988 that is to be used as a school building must be inspected prior to use as a school building. If emergency use of a building is required, inspection will occur within 30 days.)
...	...
13-29. Each inspection or reinspection is required to result in a written assessment of all friable known or assumed ACBM in the school building (40 CFR 763.88(a) through 763.88 (c)).	Verify that the assessment classifies the ACBM and suspected ACBM assumed to be ACM into one of the following categories: (1)(2)(9) - damaged or significantly damaged thermal system insulation ACM - damaged friable surfacing ACM - significantly damaged friable surfacing ACM - damaged or significantly damaged friable miscellaneous ACM - ACBM with potential for damage - ACBM with potential for significant damage - any remaining friable ACBM or friable suspected ACBM. Verify that the designated person reviews the results of the inspections, reinspections, and assessments and recommend a course of action to the local education agency. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-30. An asbestos management plan is required for each school building and submitted to the Agency designated by the Governor of the State (40 CFR 763.93).	Determine if there is a plan. (1)(2)(9) Verify that plans have been submitted. (1)(2)(9) Verify that the plan is kept current and up-to-date with on-going operational and maintenance activities. (1)(2)(9) Verify that the plan was developed by an accredited management planner and includes: (1)(2)(9) - a list of the names and addresses of each school building and whether the building contains friable ACBM, nonfriable ACBM, and friable and nonfriable suspected ACBM assumed to be ACM - dates of inspections - a blueprint, diagram or written description of the school building identifying where samples were taken - description of sampling methodologies - analysis results - descriptions of any assessments made - name, address, and telephone number of the designated asbestos manager - detailed description of preventative measures and response actions taken - statements of accreditation - description in the form of a blueprint, diagram, or writing of any ACBM or suspected ACBM assumed to be ACM which remains in the school after response actions are taken - a plan for reinspection - a description of the steps taken to inform workers, building occupants, and/or their legal occupants about asbestos related activities - an evaluation of the resources needed to complete response actions and carryout reinspection, O&M activities, periodic surveillance and training activities. Verify that a copy of the plan is on file in the school administrative office and available to workers before work beginning in any area of the building. (1)(2)(9) Verify that a copy of the plan is available for inspection by representatives of the USEPA, the State, and the public within 5 working days after receiving a request for inspection. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-31. Response actions are required to be selected and implemented in a timely manner and according to specific guidelines (40 CFR 763.90(a) through 763.90(f)).	Verify that if damaged or significantly damaged thermal system insulation ACM is present in the building, the installation will: (1)(2)(9) - at least repair the damaged area - remove the damaged material if it is not feasible, due to technological difficulties, to repair the damage - maintain all thermal system insulation ACM and its coverings in an intact state and undamaged condition. Verify that if damaged friable surfacing ACM or damaged friable miscellaneous ACM is present, the installation uses one of the following response actions: (1)(2)(9) - encapsulation - enclosure - removal - repair. Verify that if significantly damaged friable surfacing ACM or significantly damaged friable miscellaneous ACM is present in a building the installation: (1)(2)(9) - immediately isolates the functional space and restricts access unless isolation is not needed to protect human health - remove the material in the functional space or, depending on whether enclosure or encapsulation is sufficient to protect human health and the environment, enclose or encapsulate. Verify that if any friable surfacing ACM, thermal system insulation ACM, or friable miscellaneous ACM that has potential for damage is present in the building, an appropriate O&M program is implemented. (1)(2)(9) Verify that if any friable surfacing ACM, thermal insulation ACM, or friable miscellaneous ACM that has potential for significant damage is present, the installation: (1)(2)(9) - implements an appropriate O&M program - institutes preventative measures to eliminate the reasonable likelihood that the ACM will become significantly damaged, deteriorated, or delaminated - removes the material as soon as possible if appropriate preventative measures cannot be implemented.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-32. An accredited person must be designated by the local education agency to perform specific tasks and functions (40 CFR 763.84(g) and 763.88(d)).	Verify that the person designated to ensure that requirements concerning asbestos in school are implemented correctly is trained in the following: (1)(2)(9) - health effects of asbestos - detection, identification, and assessment of ACM - options for controlling ACM - asbestos management programs - relevant state and Federal regulations.
...	...
13-33. An O&M and repair program is required to be developed whenever any friable ACBM is present or assumed to be present in a building that is used as a school building (40 CFR 763.91(a) through 763.91(e)).	(NOTE: Any material identified as nonfriable ACBM or nonfriable assumed ACBM must be treated as friable ACBM when the material is about to become friable as a result of activities performed in the school building.) Verify that the following actions are taken during small scale, short duration O&M operations: (1)(2)(9) - entry is restricted into the area by persons other than those needed to perform the maintenance project (this can be done by isolating the area or by scheduling) - signs are posted to prevent entry by unauthorized persons - air-handling systems are shut-off or temporarily modified and other sources of air movement are restricted - whatever work practices are required to prohibit the spread of any released fibers are used - all fixtures or other components are cleaned in the immediate work area - the asbestos debris and other cleaning materials are placed in a sealed, leak-tight container. Verify that response actions for any maintenance activities disturbing friable ACBM, other than small-scale, short-duration maintenance is designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions. (1)(2)(9)
...	...
13-34. Warning labels are required to be attached immediately adjacent to any friable and nonfriable ACBM and suspected ACBM assumed to be ACM located in routine maintenance areas (such as boiler rooms) at each school building (40 CFR 763.95).	Verify that labels are in place in the following areas: (1)(2)(9) - where friable ACBM was responded to by any means other than removal - where there is ACBM for which no response action was carried out Verify that labels are displayed in highly visible places and remain posted until the ACBM that is labeled is removed. (1)(2)(9) Verify that the label reads CAUTION: ASBESTOS. HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT. (1)(2)(9)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
13-35. All members of the school maintenance and custodial staff who might work in a building that contains ACBM are required to receive at least 2 h of awareness training whether or not they are required to work with ACBM (40 CFR 763.92(a)(1)).	Verify that the school maintenance and custodial staff has been trained. (1)(2)(9) Verify that new personnel are trained within 60 days after start of employment. (1)(2)(9) Verify that the training has included: (1)(2)(9) - information regarding asbestos and its various uses and forms - information on the health effects associated with asbestos exposure - locations of all ACBM identified throughout each school building in which they work - recognition of damaged and deteriorating ACBM, and location of the management plan - name and telephone number of the person designated to carry out responsibilities for asbestos management.
...	...
13-36. School maintenance and custodial staff that conduct any activities that will result in the disturbance are required to received an additional 14 h of training (40 CFR 763.92(a)(2)).	Verify that staff has received additional training that includes: (1)(2)(9) - descriptions of the proper methods of handling ACBM - information on the use of respiratory protection and other personal protective measures - the requirements found in 40 CFR 763 - hands-on training in the use of respiratory protection, other personal protection measures and good work practices.
...	...
13-37. Records pertaining to asbestos in schools are required to be maintained in a central location in the administrative office of the school (40 CFR 763.94).	Verify that records concerning removal of ACBM are retained for 3 yr after the next reinspection. (1)(2)(9) Verify that records for the following are retained: (1)(2)(9) - preventive measures and response actions - personnel training - O&M activities - fiber release episodes.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

INSTALLATION:	COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (9) Chief of Operations and Maintenance (O&M)

Section 14

NOISE ABATEMENT

Section 14

NOISE ABATEMENT

A. Applicability of this Protocol

This protocol applies to all Army installations that have aircraft operations (including airfields), ranges, military operating areas (MOAs), military training routes (MTRs), or other aircraft and small arms training noise generating activities that could affect the environment. This protocol presents review action items that correspond to mechanisms for planning operations with consideration for noise. Noise effects are addressed by Installation Comprehensive Planning (ICP), the Installation Compatible Use Zone Program (ICUZ), and state and local noise zoning and land-use controls. This protocol only addresses environmental noise, not occupational noise.

B. Federal Legislation

Federal legislation on noise control governs primarily the civilian sector (civilian industries, manufacturers of products in commerce, and so forth). As a general policy, however, each department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal Government, is required to abide by Federal, state, interstate, and local laws regarding control and abatement of environmental noise to the extent that any person is subject to such laws (42 U.S. Code (USC) 4903). Therefore, the armed forces are mandated to comply with the noise control legislation where applicable.

- *The Noise Control Act of 1972* (Public Law (PL) 92-574, 42 USC 4901-4918) as amended:
  - establishes a means for effective coordination of Federal research and activities in noise control
  - authorizes the establishment of Federal noise emission standards for products distributed in commerce
  - provides information to the public in respect to the noise emission and noise reduction characteristics of such products.

The following categories of products which produce noise are covered by this Act:

- construction equipment
- transportation equipment (including recreational vehicles and related equipment)

- any motor or engine (including any equipment of which an engine or motor is an integral part)
- electrical or electronic equipment.

The following articles are not covered by the Act (42 USC 4902 (3)):

- any aircraft, aircraft engine, propeller, or appliance
- any military weapons or equipment designed for combat use
- any rockets or equipment designed for research, experimental, or developmental work to be performed by the National Aeronautics and Space Administration (NASA)
- any other machinery or equipment designed for use in experimental work done by or for the Federal Government.

The manufacturer of a product is required to give notice to the prospective user about the level of the noise the product emits, or its effectiveness in reducing noise (42 USC 4907 (b)). Such notice may not be removed from the product or its container (42 USC 4909 (4)). The manufacturer is prohibited to remove or render ineffective any device or element of design incorporated into the product to control noise (42 USC 4909 (2)).

- *The Aviation Safety and Noise Abatement Act of 1979* (PL 96-193, 49 USC Appendix 2103, 2104), as amended, relates to airport noise.

  Any airport operator may submit to the Secretary of Transportation a noise exposure map. Such map shall set forth the noncompatible uses in each area of the map, a description of the projected aircraft operations at such airport, and the ways in which such operations will affect such map (49 USC 2103).

  Any airport operator who has submitted a noise exposure map and the related information may submit to the Secretary of Transportation a noise compatibility program. This program shall include measures which the operator has taken or proposes for the reduction of existing noncompatible uses and the prevention of the introduction of noncompatible uses within the area covered by the noise exposure map submitted (49 USC Appendix 2104).

C. State/Local Regulations

State, regional, and local governmental agencies have noise control and land use regulations that have the potential to affect the mission capability of Army installations, especially when they provide controls in areas producing and/or affected by Army noise. As a general rule, states tend to treat environmental noise as a source-specific pollutant whose emissions will be controlled by the locally affected community.

Individual state and local governments may regulate the following activities:

- Airfields
- Weapon, rocket, missile firing ranges
- Small-arms training
- Vehicles
- Power-generating equipment
- Demolition and explosive-disposal sites
- Industrial activities.

D. Department of Defense (DOD) Regulations

- DOD Instruction 4165.57, *Air Installation Compatible Use Zones*, sets forth policy on achieving compatible use of public and private lands in the vicinity of military airfields. DOD air installations are required to develop, implement, and maintain an Air Installation Compatible Use Zones (AICUZ) program with desirable restrictions on land use to assure compatibility with the installation's mission.

E. U.S. Army Regulations (ARs)

- AR 200-1, Chapter 7, *Environmental Noise Abatement Program*, outlines the requirements for compliance with Federal laws and regulations on the control and abatement of environmental noise. These requirements include assessment of the impact of noise produced by proposed Army actions and maintenance of an active ICUZ program.

- Department of the Army (DA) Memorandum from Director of the Army Staff, 14 July 1987, Subject:
  ICUZ Program Implementation.

F. Key Compliance Requirements

- ICUZ Noise Contour Maps - Up-to-date noise zone maps for the installation's current and long range peacetime capabilities are completed.

- ICUZ Study - Initial and follow-up ICUZ studies have been conducted.

- ICUZ Coordination - Explained and provided technical assistance to local, regional, and state planning agencies.

- Noise Mitigation - Identify noise sources that create impact and mitigate when possible.

- ICUZ Committee -Established an ICUZ committee.

- Operational Data - Maintain a log of range and aircraft operational data.

- ICUZ Point of Contact - Designated an installation single point of contact for noise complaints.

G. Responsibility for Compliance

- ICUZ Committee - Each installation shall have an ICUZ committee. Membership should include as a minimum, representatives from the installation commander (IC); environmental management; master planning; Public Affairs Office (PAO); Staff Judge Advocate (SJA); and plans, operations, and training (range control and airfield operations). The ICUZ committee shall be responsible for reviewing complaints; investigating and recommending mitigative actions; coordinating with the public as necessary; assessing installation activities for potential noise impacts; monitoring land development plans, programs, and projects in areas adjacent to the installation; and reviewing development of onpost facilities. (NOTE: The functions of the ICUZ committee may be incorporated into the Environmental Quality Control Committee (EQCC); see Section 16 of this manual for information on the EQCC.)

H. Key Compliance Definitions

These definitions were obtained from DOD, Federal, and U.S. ARs cited previously.

- *A-Weighted Sound Level* - the A-weighted sound level is a quantity, in decibels, read from a sound level meter with A-weighting circuitry. The A-scale weighted discriminates against the lower frequencies according to a relationship approximating the auditory sensitivity of the human ear (AR 200-1, Section II).

- *DBA* - Sound level in decibels, measured using the A-weighting network of a sound level meter (AR 200-1, Section II).

- *Decibel (dB)* - A unit of measurement of sound pressure level (AR 200-1, Section II).

- *Environmental Noise* - The outdoor noise environment consisting of the noise, including ambient noise, from all sources that extends beyond the workplace. The noise environment of the workplace is not considered environmental noise (AR 200-1, Section II).

- *ICUZ* - a land use planning procedure employed to control environmental noise (AR 200-1, Section II).

NOISE ABATEMENT

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All installations	14-1 through 14-5	(1)(11)
ICUZ	14-6 and 14-7	(1)(10)(11)(21)
Land use	14-8	(1)(10)(11)
Helicopter noise ranges	14-9	(1)(11)
Onsite monitoring	14-10 through 14-13	(1)(10)(11)(21)

(a) CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(10) Range Control (DPTMSEC)
(11) Aviation Commander (DPTMSEC)
(21) Public Affairs Office (PAO)

NOISE ABATEMENT

Plans and Maps to Review

- Facility Master Plan Document
- Contour maps (if applicable)

Records to Review

- Complaint log from local community and followup documentation
- ICUZ committee charter
- ICUZ reports and studies
- ICUZ committee meeting minutes
- ICUZ committee membership list

Physical Features to Examine

- Power generating equipment
- Emergency generators
- Test tracks
- Industrial facilities
- Ranges
- Airfields/Heliports/Helipads
- Areas of noise/land use conflict
- Vehicle motor parks
- Rock quarry operations

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Range Control (DPTMSEC)
- Aviation Commander (DPTMSEC)
- Public Affairs Office (PAO)

COMPLIANCE CATEGORY: NOISE ABATEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
14-1. Determine actions or changes since previous review of noise management (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)
...	...
14-2. Copies of all relevant Federal regulations, DOD and U.S. Army directives and guidance documents on noise management should be maintained at the installation (GMP).	Determine whether copies of following documents, which are applicable, are maintained and kept current at the installation: (1)(11) - EO 12088, *Federal Facilities Compliance with Pollution Standards.* - DOD Instruction 4165.57, *Air Installation Compatible Use Zones.* - DOD Instruction 5100.5, *Protection and Enhancement of Environmental Quality.* - AR 95-1, *Army Aviation: Flight Regulations.* - AR 200-1, *Environmental Protection and Enhancement.* - AR 200-2, *Environmental Effects of Army Actions.* - AR 210-70, *Intergovernmental Coordination of DOD Federal Development Program and Activities.* - DA memorandum from Director of Army Staff, *Installation Compatible Use Noise Zone Program Implementation*, 20 January 1983. - DA memorandum from Director of Army Staff, *Installation Compatible Use Noise Zone Program Implementation*, 14 July 1987. - TM 5-803-2, *Planning in the Noise Environment.* - Applicable state and local regulations.
...	...
14-3. Installations are required to comply with applicable state and local requirements (EO 12088, Section 1-1).	Verify that the installation is complying with applicable state and local requirements. (1) Verify that the installation is operating according to permits issued by the state or local agencies. (1) (NOTE: Issues which are typically regulated by state and local agencies include: - motor vehicle noise - construction noise - community impact.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (10) Range Control (DPTMSEC) (11) Aviation Commander (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: NOISE ABATEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
14-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1) Verify that the existing system addresses the issues associated with noise abatement by: (1) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)
...	...
14-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning environmental noise have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (10) Range Control (DPTMSEC) (11) Aviation Commander (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: NOISE ABATEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

ICUZ
 	
14-6. Installations are required to conduct an ICUZ Study as a part of the ICUZ Program to identify and control noise (AR 200-1, para 7-2c, 7-2d, and 7-5a).
 	
...
	Determine if an initial ICUZ study was completed. (1)(11)(21)
	
	Verify that the installation's ICUZ study includes the following minimum components: (1)(11)(21)
	
	- current noise zone maps of the installation's existing and future noise environment
	- A-weighted day-night sound levels for transportation related noise
	- C-weighted day-night sound levels for large amplitude impulsive noise
	- at a minimum, the zones I, II, and III are shown
	- analysis of land use compatibility problems and solutions to include:
	  - identification of existing incompatible land uses within zones II and III
	  - identification of possible incompatible land uses within zones II and III
	  - identification of desirable land uses within zones II and III
	- ICUZ public involvement plan
	- review of installation master plans to ensure that existing and future facility siting is consistent with the noise environment
	- identification of noise sources that create impact; investigation of possible mitigations; programming of resources to reduce noise impacts.
	
	Verify that, where impacts exist offpost: (1)(11)(21)
	
	- land use documents of surrounding jurisdictions acknowledge and incorporate military noise assessments
	- military noise contours have been formally recorded and/or published in appropriate newspapers or other communications media.
	
	Verify that the ICUZ study is being updated at least every 5 years (yr), or whenever significant noise producing operations change. (1)(10)(11)
	
	Verify that ICUZ regulations are integrated with AR planning regulations under AR 200-2. (1)(10)(11)
	
	(NOTE: Installations without significant noise sources, such as ranges, airfields, or industrial operations, are exempt from this requirement and must prepare a single page ICUZ statement of negligible impact (AR 200-1, para 7-5g and i(3)).)
	
	(NOTE: Refer to Appendices 14-1 and 14-2 for further information.)
	
	...

(1) Directorate of Engineering and Housing (DEH)/DPW (10) Range Control (DPTMSEC) (11) Aviation Commander (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: NOISE ABATEMENT USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
14-7. Each installation is required to establish an ICUZ committee (AR 200-1, para 7-1b and 7-5b).	Verify that an ICUZ committee has been developed that includes representatives from the following: (1)(11) - IC - environmental manager - master planning - PAO - SJA - range control and airfield operations. Verify that the ICUZ committee: (1)(11) - meets at least semi-annually - reviews the ICUZ study annually - reviews noise complaints - investigates and recommends mitigative action - assesses installation for possible noise impacts - monitors land development plans and projects in area adjacent to installation - reviews development of onpost facilities - coordinates with the public (as appropriate) - coordinates with public officials regarding offpost development bordering the installation. (NOTE: Installations may be exempt from this requirement if functions of ICUZ committee are incorporated into EQCC as outlined in AR 200-1, para 12-13.)
...	...
LAND USE	
14-8. Installations should adequately address existing and potential land use conflicts (GMP).	Tour areas adjacent to installation boundaries and verify land use compatibility. (1)(10)(11) Determine if there is a potential for existing compatible land uses to change (i.e., installation of infrastructure). (1)(11) (NOTE: A recommendation for further study will usually be appropriate since noise measurements usually will not be available to the evaluator.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (10) Range Control (DPTMSEC) (11) Aviation Commander (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: NOISE ABATEMENT USA ECAS	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
HELICOPTER NOISE RANGES	
14-9. Assessment of helicopter noise must include a distance factor and specific factor to account for the special character of helicopter noise (AR 200-1, para 7-5c(2)).	Verify that the following dB factors are included in the assessment of helicopter noise on the installation: (1)(11) Slant distance meter (m) — Factor(dB) 0-200 — 7 200-300 — 5 300-400 — 3 400-500 — 1 500 + — 0 Verify that if helicopters or other impulse noise sources that have frequency energy sufficient to rattle windows or other building elements are present at the installation, two sets of noise zone maps are developed, one with and one without the penalty factors listed above that will illustrate areas where rattle-proofing techniques should be used as a mitigative technique in existing facilities and new construction. (1)(11)
...	...
ONSITE MONITORING	

14-10. Installations are required to attempt to minimize environmental noise (AR 200-1, para 7-2e).	Determine if noise levels are being reduced by using: (1)(10)(11)
	
	- noise reduction engineering
	- administrative and operational controls
	- appropriate siting and design of facilities and ranges
	- development and procurement of weapons systems and other military combat equipment that produce less noise
	- procurements of commercially manufactured products that produce less noise
	- appropriate land use controls including:
	  - assisting in the development of protective offpost land use planning
	  - assisting in the development of protective offpost structural requirements to mitigate noise impacts
	  - controlling land use through easements
	  - developing protective onpost land-use planning
	  - developing protective onpost structural requirements to mitigate noise impacts.

...	...
14-11. Onsite monitoring is required if zone III extends off the installation or a significant noise controversy exists (AR 200-1, para 7-5d).	Verify that monitoring has been or is being performed. (1)(11)(21)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (10) Range Control (DPTMSEC) (11) Aviation Commander (DPTMSEC) (21) Public Affairs Office (PAO)

COMPLIANCE CATEGORY: NOISE ABATEMENT USA ECAS	
REGULATORY REQUIREMENTS:	***REVIEWER CHECKS:***

14-12. Installations are required to maintain operational data on noise producing activities (AR 200-1, para 7-5f).	Verify that noise operational data required to develop noise contour maps is being maintained including: (1)(10)(11)
	- for impulsive noise (25 millimeter (mm) or greater)
	  - location of firing points
	  - location of target areas
	  - location of demolition areas
	  - number of rounds fired at each firing point by type and time of day
	  - propellant charge to each target
	- for aircraft noise
	  - flight track location
	  - altitude of aircraft along flight track
	  - number of operations along each flight track by type of aircraft and time of day
	- for small arms noise
	  - location of range
	  - location of firing points
	  - direction of firing
	  - type of small arm/weapon fired.
	
	Verify that operational data covers 1 yr. (1)(10)(11)

...	...
14-13. Installations must institute a noise complaint procedure (AR 200-1, para 7-3).	Verify that a noise complaint procedure has been instituted that ensures the following: (1)(10)(11)(21) - a log is maintained of all noise complaints - complaints are investigated without delay - copies of complaints are routed to the office responsible for the type of activity that resulted in the noise complaint - PAO responds to the complaint. Verify that the noise-generating activity responds to PAO concerning all complaints and does a followup by identifying the cause of the noise and any action taken to correct deficiency. (1)(11) Verify that the ICUZ committee is provided with a copy of the complaint and followup. (1)(11)

(1) Directorate of Engineering and Housing (DEH)/DPW (10) Range Control (DPTMSEC) (11) Aviation Commander (DPTMSEC) (21) Public Affairs Office (PAO)

Appendix 14-1

Noise Zones in Noise Zone Maps

ICUZ Zone	Percent Population Highly Annoyed	A-weighted Day-Night Sound Level ADNL (dB)	C-weighted Day-Night Sound Level CDNL (dB)
I	< 15	< 65	< 62
II	15 - 39	65 - 75	62 - 70
III	> 39	> 75	> 70

Appendix 14-2

Calculation of dB Factor to be Added to Helicopter Sound Exposure Levels

Slant Distance (m)	Factor (dB)
0-200	7
200-300	5
300-400	3
400-500	1
500 and longer	0

INSTALLATION:	COMPLIANCE CATEGORY: NOISE ABATEMENT USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH)/DPW (10) Range Control (DPTMSEC) (11) Aviation Commander (DPTMSEC) (21) Public Affairs Office (PAO)

Section 15

RADON PROGRAM

SECTION 15

RADON PROGRAM

A. Applicability of this Protocol

This protocol applies to all Army installations. Currently this section contains protocols for radon gas. Radon Program protocols are written in response to the Federal regulations that are applicable to the conduct of activities involving these programs.

Specific state regulations are not included in this protocol. However, an outline of the typical contents of such regulations is provided.

The Radon Program protocol is used to determine the compliance status of the management activities associated with the Army Radon Reduction Program (ARRP).

B. Federal Legislation

- *The Toxic Substances Control Act (TSCA).* This Act, as last amended in 1986, 15 U.S. Code (USC) 2601-2671, is the Federal legislation which deals with the control of toxic substances. The Act consists of three subchapters, one of which regulates the control of toxic substances, another governs asbestos hazard emergency response, and another subchapter regulates indoor radon abatement. The national long-term goal of the United States with respect to radon levels in buildings is that the air within buildings in the United States should be as free of radon as the ambient air outside of buildings (15 USC 2661).

  The head of each Federal department or agency that owns a Federal building must conduct a study for the purpose of determining the extent of radon contamination in such buildings. Such study must include, in the case of a Federal building using a nonpublic water source (such as a well or other groundwater), radon contamination of the water. Such a study must be based on design criteria specified by the U.S. Environmental Protection Agency (USEPA).

  Such study must be completed and reported by the head of each Federal department or agency to the USEPA no later than 1 June 1990 (15 USC 2669(a)(c)(e)).

- Executive Order (EO) 12088, *Federal Compliance with Pollution Standards*, of 13 October 1978 requires Federally owned and operated facilities to comply with applicable pollution control standards. It makes the head of each

executive agency responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities. In addition, the EO requires the head of each agency to ensure that sufficient funds for compliance with the applicable environmental standards are requested in the agency budget.

C. State/Local Requirements

State and local governments may enact radon control standards.

D. Department of Defense (DOD) Regulations

- None.

E. U.S. Army Regulations (ARs)

- AR 200-1, *Environmental Protection and Enhancement*, Chapter 11, *ARRP*, describes policy and procedures for assessing indoor levels of radon and mitigating radon in structures where the levels are elevated. The program is decentralized; that is, each installation is responsible for funding, executing, documenting, and managing the radon monitoring and mitigation efforts based on ARRP.

F. Key Compliance Requirements

ARRP applies to all major Army installations. The program is designed to assess radon levels on a priority basis using the following priority list in family housing, administrative buildings (offices), dormitories, child care facilities, temporary lodging facilities, etc. Detailed assessments will be accomplished at the installations where initial screening results identify a radon problem. Following mitigation, post mitigation assessments are conducted to ensure the effectiveness of the mitigation actions. Mitigation actions are prioritized using the table below:

Priority 1: Day care centers, hospitals, schools, and living areas (that is, quarters, unaccompanied personnel housing, and billets).
Priority 2: Areas having 24-hour (h) operations, such as operations centers and training and research, development, test, and evaluating (RDTE) facilities.
Priority 3: All other routinely occupied structures.

MITIGATION TIME FRAME
(AR 200-1, Chapter 11-3, Table 11-1)

Radon Level picoCuries per liter (pCi/L)	Mitigate:
Greater than 200[1]	1 month (mo) or move the occupants
200-20[1]	6 mo
20-8[2]	1-4 years (yr)[3]
8-4[2]	5 yr
4 or less[1]	No action required

[1]Determine by 90-day screen or a 1-yr measurement in the case of Priority 2 and 3 structures.
[2]Annual average determined by 1-yr measurement. Screening measurements in this range will not be used as the basis for initiating mitigation actions.
[3]Depending on the level of the measurement.

G. Responsibility for Compliance

- Army Corps of Engineers is responsible for review of radon assessments and implementation of radon mitigation activities in accordance with ARRP.

H. Key Compliance Definitions

These definitions were obtained from Army, DOD, and compliance regulations sited previously in this protocol.

- *Army Radon Reduction Program (ARRP)* - a program whose objectives include the identification of structures owned and leased by the Army (continental United States (CONUS) and outside the continental United States (OCONUS)) that have indoor radon levels greater than 4 pCi/L of air and the modifications of those buildings found with excess levels of radon (AR 200-1, Chapter 11).

- *Facility* - buildings, structures, public works, equipment, aircraft, vessels, and other vehicles and property under control of, or constructed or manufactured for leasing to the Army (AR 200-1, Glossary, Section 2).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *Industrial Installation* - an installation that has the primary mission of producing, maintaining, or rehabilitating military material (AR 200-1, Glossary, Section 2).

- *Lowest Living Area (LLA)* - is defined as follows:
    1. for structures without subsurface areas, the LLA is the ground floor.
    2. for structures with subsurface areas, the LLA is defined as the lowest area in that structure that has a finished, hard surface floor (for example, concrete or tiled) that is or could be used. A dirt breezeway is not an LLA, but an unfinished basement with a concrete floor is, regardless of what the current occupants are using the area for (AR 200-1, para 11-5a).

- *Radon-222* - a naturally occurring, inert, radioactive gas that is formed from the radioactive decay of uranium (AR 200-1, para 11-3).

RADON PROGRAM

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
Radon:		
All installations	15-1 through 15-16	(1)(2)(4)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(4) Safety and Health Officer

RADON PROGRAM

Plans and Maps to Review

- None.

Records to Review

- Annual reports
- Inventory sheets for detector placement

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Safety and Health Officer

COMPLIANCE CATEGORY: RADON PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
15-1. Determine actions or changes since last review of radon gas management (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)(2)(4) Determine facility changes relative to radon gas monitoring that have occurred since previous review and would affect the scope of the current review. Examples of changes are: (1)(2)(4) - new construction - additions to existing buildings - changes in building use.
...	...
15-2. The installation should maintain and keep current regulations regarding radon gas management (GMP).	Determine if copies of the following, which are applicable, are available at the installation: (1)(2)(4) - EO 12088, *Federal Compliance with Pollution Prevention.* - AR 200-1, Chapter 11, *Army Radon Reduction Program.* - Applicable state and local regulations.
...	...
15-3. Installations are required to comply with applicable state and local requirements (EO 12088, Section 1-1).	Verify that the installation is complying with applicable state and local requirements. (1) Verify that the installation is operating according to permits issued by the state or local agencies. (1)
...	...
15-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1) Verify that the existing system addresses the issues associated with radon by: (1) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer

COMPLIANCE CATEGORY: RADON PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
15-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning radon have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...
15-6. All Army installations are required to perform radon measurements according to a prescribed prioritized schedule in order to identify Army structures with radon levels above 4 pCi/L with emphasis on identifying Priority I structures with levels greater than 20 pCi/L (AR 200-1, para 11-2a(3) and 11-4).	Verify that the scheduled radon measurement has been performed as follows: (1)(2) - Priority 1: day care centers, hospitals, schools, and living areas - Priority 2: areas having 24 h operations, such as operations centers, and training and RDTE facilities - Priority 3: all other routinely occupied structures. (NOTE: Priority 2 and 3 structures will be measured for radon depending on the results of the initial phase measurements for Priority 1 structures.) (NOTE: Leased buildings will be measured for radon, although remedial action is the responsibility of the owner.) Verify that all initial radon measurements were completed by the 4th quarter of fiscal year 1991 (FY91). (1)(2) Verify that records are prepared and maintained of all radon measurement results. (1)(2)
...	...
15-7. Initial phase measurements of Priority 1 structures are required to be done according to specific standards (AR 200-1, para 11-5a).	Determine if all Priority 1 buildings at the installation have had an initial screening that met the following requirements: (1)(2) - radon detectors were in place for 90 days - detectors were placed in the LLA - radon detection was performed when buildings were closed (usually during winter or summer when windows and doors are shut due to heating or cooling).
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer

COMPLIANCE CATEGORY: RADON PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
15-8. Long term measurement (LTM) for radon is required to be done according to specific methodology (AR 200-1, para 11-5b(1)).	Verify that LTM uses alpha track-type radon detectors for a 1 yr period under normal living conditions to establish an annual radon concentration. (1)(2)(4)
...	...
15-9. LTM for radon is required for Priority 2 and 3 structures if the results of the initial phase measurements of Priority 1 structures indicated radon concentrations greater than 4 pCi/L (AR 200-1, para 11-5b(2)).	Determine if any Priority 1 structures on the installation had a radon level of greater than 4 pCi/L. (1)(2) Verify that if any Priority 1 structures on the installation had radon measurements of greater than 4 pCi/L, then long term measurement for radon was performed on all Priority 2 and 3 structures. (1)(2)
...	...
15-10. When Priority 1 structures have radon levels of less than 4 pCi/L, but the conditions suggest that some Priority 2 and 3 structures may have higher levels, LTM for radon levels are required (AR 200-1, para 11-5b(2)).	Verify that if all Priority 1 structures have less than or equal to 4 pCi/L, but the conditions suggest that some Priority 2 and 3 structures may have levels higher than 4 pCi/L radon, LTM for radon is done in Priority 2 and 3 structures. (1)(2)(4)
...	...
15-11. LTM of Priority 1 structures where the initial radon level measurement was above 4 and less than 20 pCi/L must be done according to specific procedures (AR 200-1, para 11-5b(3), and 11-6a).	Determine whether Priority 1 buildings with an initial level of indoor radon of greater than or equal to 4 pCi/L but less than or equal to 20 pCi/L have undergone LTM as follows prior to mitigation: (1)(2) - single family structures: one detector in the LLA; if LLA is a basement, a second detector on the first floor - multiple family structures: one detector in LLA; if LLA is common open area, one detector for every 360,000 square meters (m^2) of area in LLA and one per apartment in floor above basement - office buildings and warehouses: one detector for every 2000 sq ft in the LLA.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer

COMPLIANCE CATEGORY: RADON PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
15-12. Installations are required to perform mitigation of structures as required by measured results (AR 200-1, Table 11-1).	Verify that the schedule for mitigation is complied with as follows (See Appendix 15-1): (1)(2)(4) - buildings with indoor radon level greater than or equal to 4 pCi/L but less than or equal to 20 pCi/L have been mitigated according to the following schedule, based on the 12 mo LTM results for the buildings: - 4 pCi/L or less - no action taken - 4 to 8 pCi/L - mitigation completed within 5 yr - 8 to 20 pCi/L - mitigation completed within 1 to 4 yr, depending on the level of the measurement - buildings with initial or long term radon measurement levels that are greater than or equal to 20 pCi/L have been mitigated according to the following schedule: - 20 to 200 pCi/L - remedial action completed within 6 mo - greater than 200 pCi/L - remedial action completed within 30 days. If remedial action cannot reduce radon levels within 30 days, occupants must be relocated.
...	...
15-13. Installations are required to perform post-mitigation measurement to confirm and document effectiveness of mitigation (AR 200-1, para 11-5c).	Verify that the following procedures are followed for structures with greater than or equal to 20 pCi/L radon: (1)(2)(4) - charcoal canister-type detectors are used to provide rapid results (within days) - measurements are made under closed-house/worst-case conditions to initially verify mitigation effectiveness. Verify mitigation efficacy using LTM (1 yr) with alpha track-type detectors once levels are below established standards using rapid monitoring techniques. (1)(2) (NOTE: For structures greater than 20 pCi/L before mitigation, occupants may be returned to quarters based on acceptable levels from rapid monitoring.) Verify that the following post-mitigation procedures are followed for structures with less than 20 but greater than or equal to 8 pCi/L: (1)(2) - detectors that provide results within 90 days or sooner for worst-case, closed-house conditions are used - once radon levels are below established standards using the above method, verification of mitigation is assessed using LTM (1 yr). (NOTE: Structures with less than 8 but greater than 4 pCi/L may use detectors that provide results in 90 to 180 days under worst-case, closed-house conditions for verification.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer

COMPLIANCE CATEGORY: RADON PROGRAM USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
15-14. Installations are required to take steps to keep radon levels at or below 4 pCi/L (AR 200-1, para 11-1b(2)).	Determine if the installation has modified owned structures so that levels are kept at or below 4 pCi/L. (1)(2)(4) Verify that in new construction: (1)(2)(4) - preventive measures have been incorporated to reduce radon migration - the radon level is being measured.
...	...

15-15. Annual reports must be prepared and submitted (AR 200-1, para 1-22j(2) and 11-6d(2)).	Obtain a copy of the annual report and review it for the following: (1)(2)
	
	- number of structures at the installation
	- number of structures measured for radon
	- number of buildings with radon measurements
	  - greater than 200 pCi/L
	  - 20 to 200 pCi/L
	  - 8 to 20 pCi/L
	  - 4 to 8 pCi/L
	  - equal to or less than 4 pCi/L
	- number of buildings mitigated
	- highest level of radon recorded at installation.
	
	Verify that at the end of each fiscal year the annual report is submitted to Major Army Command (MACOM). (1)(2)

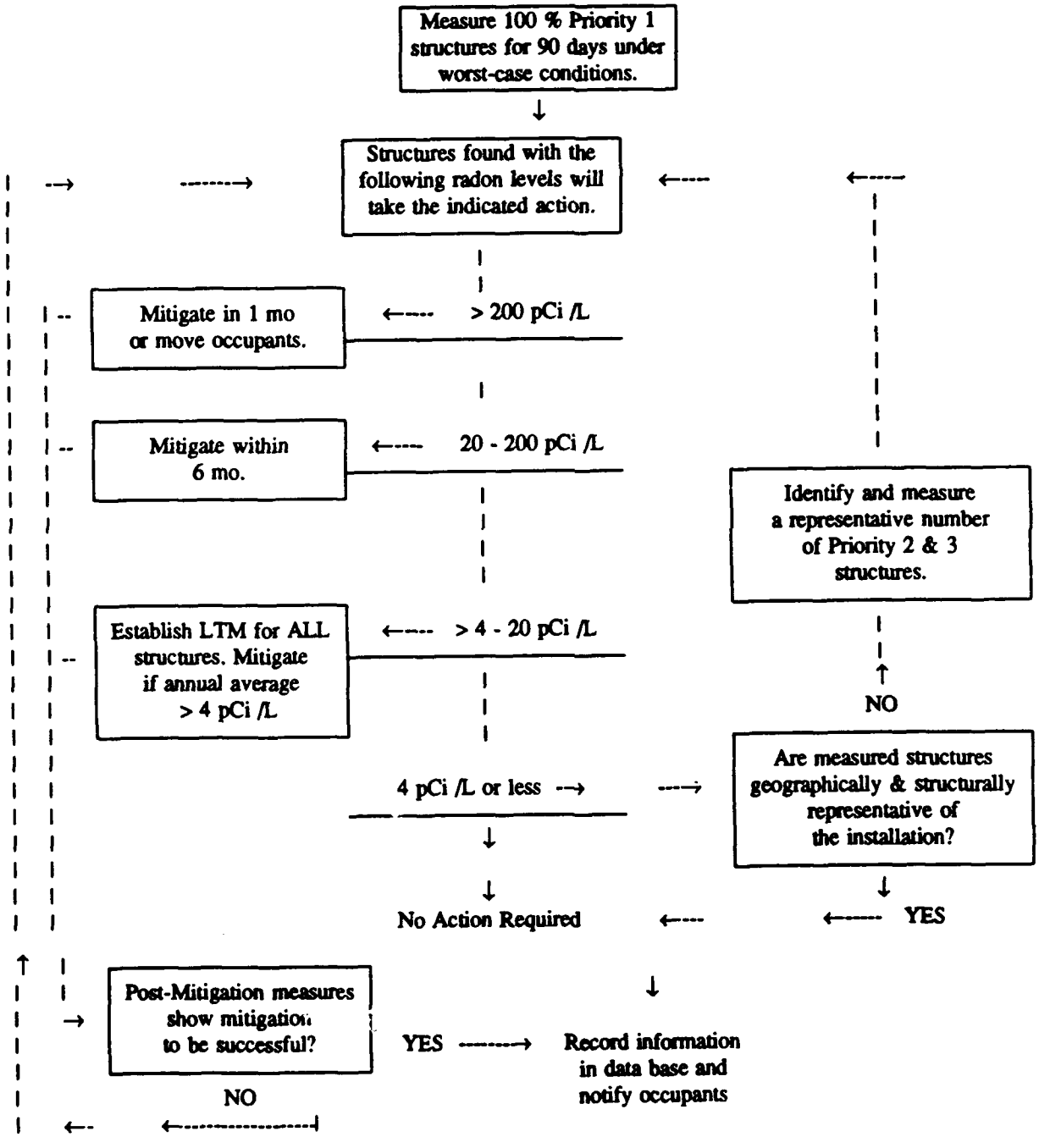
...	...
15-16. Installations are required to maintain or have access to a database that will permanently capture all the information derived from the assessment and mitigation of radon (AR 200-1, para 11-2b(1)(g) and 11-6d(1)).	Verify that installation maintains or has access to a database. (1)(2)(4) Verify that all radon information is contained in a database. (1)(2)(4)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (4) Safety and Health Officer

Appendix 15-1

Schematic Flow Chart of the Actions Required

By the Army Radon Reduction Program



INSTALLATION:	COMPLIANCE CATEGORY: RADON PROGRAM USA ECAS	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (4) Safety and Health Officer

Section 16

ENVIRONMENTAL PROGRAM MANAGEMENT (EPM)

SECTION 16

ENVIRONMENTAL PROGRAM MANAGEMENT (EPM)

A. Applicability of this Protocol

This protocol applies to all Army facilities. Currently, this section contains protocols for EPM activities, including the A-106 Pollution Abatement Plan. (This document is more widely known as the RCS 1383 Report.) The EPM protocol is written in response to the Federal, Department of Defense (DOD), and Army regulations (ARs) applicable to the conduct of activities involving these programs. This section is designed to evaluate and examine the interaction within the Environmental Office, and the Directorate of Engineering and Housing (DEH), and interface with other Directorates/Installation Activities and applicable Major Army Commands (MACOMs).

Specific state regulations are not included in this protocol.

B. Federal Legislation

This section contains policy for management of the environmental programs described in previous sections. The controlling legislation for the various management activities is referenced in the appropriate sections. Only the A-106 Pollution Abatement Plan is included here.

- A-106 Pollution Abatement Plan / RCS 1383 Report

Office of Management and Budget (OMB) Circular A-106 implements the requirement in Executive Order (EO) 12088, *Federal Compliance with Pollution Standards*, for assuring that Federal agencies, facilities, programs, and activities meet Federal, state, and local environmental requirements or to correct situations that are not in compliance with such regulations.

- EO 12088, *Federal Compliance with Pollution Standards*, of 13 October 1978 requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for seeing to it that the agencies, facilities, programs, and activities it funds meet applicable Federal, state, and local environmental requirements and for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget.

- RCS 1485, *Report/Army Compliance Tracking System.* Section 352 of the *1990 Defense Authorization Act* (PL 101-189) became the ECS 1485 Report in the Army. Originally known as the Defense Environmental Status Report (DESR), it was renamed the Defense Environmental System (DEMIS) Report in August 1990. The Army DEMIS submission is compiled at HQ DA based on installation entries in the Army Compliance Tracking Systems (ACTS), instituted in 1991. ACTS and DEMIS indicate regulatory agency activities at the installation level, particularly Notices of Violation (NOVs) and other issuances requiring formal responses.

C. State / Local Requirements

- A-106 Pollution Abatement Plan / RCS 1383 Report

- There are no state- or local-specific requirements.

D. DOD Regulations

- None.

E. U.S. ARs

- AR 200-1, *Environmental Protection and Enhancement*, and AR 200-2, *Environmental Effects of Army Actions*, together establish Army environmental policy. AR 200-1, includes requirements for environmental compliance, auditing, reports, the establishment of Environmental Quality Control Councils (EQCCs) and Technical Review Committees (TRCs), making environmental agreements, and regulations on property transactions and construction sites.

- AR 200-2, *Environmental Effects of Army Actions*, incorporates the requirements of the National Environmental Policy Act (NEPA) (40 CFR 1500-1508), and DOD Directive 6050.1, *Environmental Effects in the United States of DOD Actions*. Provisions for NEPA compliance are included in Section 12 of this manual.

- AR 200-1, *Environmental Protection and Enhancement*, briefly outlines the A-106 procedure. The U.S. Army Environmental Center (USAEC), in coordination with the Army Environmental Office, sends detailed technical guidance to the MACOMs for the collection and processing of information required for the report. This includes a listing of pollutant categories, for which A-106/RCS 1383 reports should be filed. Installation commanders are responsible for ensuring that their A-106/RCS 1383 reports are prepared jointly by the

installation's engineering and environmental staffs and resource managers, in consultation with United States Environmental Protection Agency (USEPA). AR 200-1 also briefly discusses the RCS 1485 Report. Installations submit input via ACTS for MQDA rollup into the DEMIS Report.

F. Key Compliance Requirements

- A-106 Pollution Abatement Program/RCS 1383 Report

  The A-106/RCS 1383 Report is required for all Army installations.

- RCS 1485, *Report/Army Compliance Tracking System (ACTS).*

  RCS 1485 input is required for all installations via ACTS input submissions.

G. Responsibility for Compliance

- Installation Commanders (ICs), activity, and unit commanders will:

  Be actively involved and maintain awareness of environmental programs, activities, critical issues, NOVs, 1383 submissions, environmental section of the installation budget request, environmental entries and of results and updates of the Environmental Compliance Assessment System (ECAS) reports (assessment report and corrective action management plan).

  Ensure other Directorates, tenant activities and unit commanders cooperate with the DEH and/or environmental officer on environmental responsibilities.

  Conduct initial and follow-up ECAS assessments (ECAS program).

- DEH/DPW will:

  Ensure environmental projects are incorporated in the Annual Work Plan (AWP).

  Prepare and provide input on environmental requirements in the installation budget request.

  Prepare the A-106/RCS 1383 Report.

  Provide input to the RCS 1485 Defense Environmental Management Information System (DEMIS) report via ACTS.

Provide NOVs from regulatory agencies to respective MACOM.

- Public Affairs Office (PAO) will:

  Establish the necessary support to DEH and interface with public, to include maintaining the Public Affairs Plan.

- Safety Office will:

  Provide required support for management of hazardous materials (i.e., worker protection guidance, inspection assistance).

- Preventive Medicine Office will:

  Provide required respiratory and protective support, conduct, and maintain baseline medical surveys.

  Provide Quality Assurance/Quality Control (QA/QC) on management of pathological wastes.

- Director of Logistics (DOL) will:

  Be responsible for compliance and QA/QC on the Used Solvent Elimination (USE) Program, POL management (new and used materials), hazardous materials tracking to include Material Safety Data Sheets (MSDS), and environmental controls/oversight of maintenance, transportation, and ammunition storage activities.

- Civilian Personnel Office (CPO) will:

  Provide personnel active support regarding classification, recruitment, and placement.

  Provide support in obtaining required environmental training.

- Director of Resource Management (DRM) will:

  Review budget input and ensure environmental requirements are properly considered.

  Provide support and guidance to manpower survey/Schedule X activity in establishing and maintaining required staffing.

H. Key Compliance Definitions

These definitions were obtained from Army, DOD, and compliance regulations cited previously or provided by USAEC.

- *Class I* - includes projects required to meet the provisions of assigned compliance agreement or consent order; projects required to correct deficiencies found on an USEPA or state inspection; other projects needed to come into compliance when statutory/regulatory deadlines have passed.

- *Class II* - includes those projects needed to meet future compliance deadlines for which planning must have already started.

- *Class III* - includes all other projects which while important are not related to imminent compliance requirements.

- *Compliance Status* - a four letter code identifying the current compliance status of the pollution source for which a project is being funded.
  - CMPA, Compliance Agreement: Required to meet conditions of a signed Federal Facility Compliance Agreement, Consent Order or equivalent state or local enforcement action. Project Assessment value: HIGH.
  - INOV, Inspection/Notice of Violation: Required to meet deficiencies found on inspection by regulatory authority or cited in an NOV or equivalent. Project Assessment value: HIGH.
  - ESDP, Established Standard, Deadline Passed: Does not meet established standard and compliance deadline has passed. Project Assessment value: HIGH.
  - ESDF, Established Standard, Deadline Future: Does not meet established standard and compliance deadline is in the future.
  - PSDF, Pending Standard, Deadline Future: Does not meet pending standard and compliance deadline is in the future.
  - ESRO, Established Standard, Replacement for Obsolescence: Meets established standard but needs replacement due to need or obsolescence.
  - ESRE, Established Standard, Replacement for Expansion: Meets established standard but needs replacement due to need for expansion.
  - ESDL, Established Standard, Demonstrates Leadership: Meets established standard but needs to demonstrate leadership.
  - OTHR: Other. Projects which don't fit any of the above categories.

- *Cost* - the amount of funds required to put in place the necessary environmental protection measures, irrespective of the appropriation chargeable.

- *Environmental Agreement* - includes, but is not limited to, consent orders, consent agreements, compliance agreements, memorandum of agreement, memorandum of understanding, Interagency Agreements (IAGs), Federal Facility Compliance Agreements (FFCAs) (AR 200-1, para 12-6b).

- *Good Management Practice (GMP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.

- *Practicable* - capable of being used in accordance with applicable specifications, available at a reasonable price and within a reasonable time-frame, and with the maintenance of a satisfactory level of competition.

- *Preliminary Assessment Screening* - a compressed preliminary assessment used when certain real estate transactions are proposed.

- *Procuring Agency* - all Federal agencies, or any state agency, or agency of a political subdivision of a state, that is using appropriated Federal funds for such procurement, or any person contracting with any such agency with respect to work performed under such a contract.

ENVIRONMENTAL PROGRAM MANAGEMENT (EPM)

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
Documentation	16-1 through 16-4	(1)(2)(22)
All installations	16-5 through 16-12	(1)(2)(21)(27)(31)(32)(34)(36)
Procurement of Goods	16-13	(1)(2)
Environmental Agreements	16-14	(1)(2)(22)
A-106 Pollution Abatement Plan, RCS 1383 Reports, and ACTS	16-15 through 16-20	(1)(2)(21)
Construction	16-21	(1)(13)
Real Property Transactions	16-22 and 16-23	(1)(2)
Support Requirements	16-24	(1)(2)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(6) Director of Logistics (DOL)
(13) Engineering, Plans, and Services (EP&S)
(21) Public Affairs Office (PAO)
(22) Staff Judge Advocate (SJA)
(27) Inspector General (IG)
(31) Directorate of Personnel and Community Activities (DPCA)
(32) Directorate of Resource Management (DRM)
(34) Civilian Personnel Office (CPO)
(36) Directorate of Plans, Training, and Mobilization (DPTM)

ENVIRONMENTAL PROGRAM MANAGEMENT (EPM)

Plans and Maps to Review

- A-106 pollution abatement plan / RCS 1383 reports
- Annual Work Plan (Environmental)

Records to Review

- Record of previous environmental compliance assessments
- Environmental agreements
- Preliminary Assessment Screening (PAS)
- NOVs submitted
- Command Operating Budget (COB)
- Unfinanced Requirements Report (UFR)
- 1485/DEMIS Report/ACTS
- Spill logs/reports

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Engineering, Plans, and Services (EP&S)
- Public Affairs Office (PAO)
- Staff Judge Advocate (SJA)
- Inspector General (IG)
- Directorate of Personnel and Community Activities (DPCA))
- Director of Resource Management (DRM)
- Civilian Personnel Office (CPO)
- Directorate of Plans, Training, and Mobilization (DPTM)
- Director of Logistics (DOL)

COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DOCUMENTATION	
16-1. Determine actions or changes since previous review (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)(2)(22)
...	...
16-2. Copies of all relevant Federal, DOD, Army, and state/local regulations should be maintained at the installation (GMP).	Verify that copies of the following regulations, which are applicable, are maintained on the installation: (1)(2) - EO 12088, *Federal Compliance with Pollution Standards.* - AR 200-1, *Environmental Protection and Enhancement.* - AR 200-2, *Environmental Effects of Army Actions.* - Applicable state and local regulations.
...	...
16-3. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes NOVs, letters of citation, promotes good public relations and addresses systemic weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2) Verify that the existing system addresses the issues associated with environmental program management by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity.
...	...
16-4. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning environmental program management have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations or will be by the compliance deadline. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (13) Engineering, Plans, and Services (EP&S) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (SJA) (27) Inspector General (IG) (31) Directorate of Personnel and Community Activities (DPCA) (32) Directorate of Resource Management (DRM) (34) Civilian Personnel Office (CPO) (36) Directorate of Plans, Training, and Mobilization (DPTM)

COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
16-5. Installations are required to comply with applicable state and local regulations (AR 200-1, para 1-39a(3)).	Verify that the installation is complying with state and local requirements as appropriate. (1)(2)(21) (NOTE: Issues which are typically regulated by state and local agencies include: - procurement of goods (recycled material content) - notification of NOVs - environmental agreements - Federal Facilities Compliance Agreements (FFCA).)
...	...
16-6. Each installation is required to request sufficient funding and staffing to perform the required environmental compliance activities (AR 200-1).	Verify that adequate/current Schedule Xs are prepared and submitted to DRM/DPTMSEC (Force Development) to obtain necessary staffing to support environmental program requirements. (1)(2)(31) Verify that adequate/current job descriptions and grade classifications are prepared and submitted to CPO for classification and recruitment to obtain required personnel staffing and supporting grades. (1)(2)(31)(34) Examine the number of environmental staff versus the number of environmental subprograms the office must manage. If the ratio of personnel to programs exceeds 1:3, potential exists for staffing deficiencies. (1)(2)(31) Verify that adequate projects and programs are described in RCS 1383 Reports to justify funding submissions. (2) Verify that installation budget requests contain VENC and DERA identified submissions supported by NCS 1383 identified entries. (1)(2)(34)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (13) Engineering, Plans, and Services (EP&S) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (SJA) (27) Inspector General (IG) (31) Directorate of Personnel and Community Activities (DPCA) (32) Directorate of Resource Management (DRM) (34) Civilian Personnel Office (CPO) (36) Directorate of Plans, Training, and Mobilization (DPTM)

COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
16-7. Each installation will have an EQCC (AR 200-1, para 12-3a through 12-13c).	Verify that the installation has an EQCC, and that it is comprised of the following persons: (1)(2)(21) - installation or community commander, or a designated representative, who will serve as chairperson - DEH, who will act as the executive secretary - the environmental officer - the director of each major staff section of the installation or community - representatives from the following offices or functions: - preventive medicine -safety - surety -internal control - resource management -supply - DRMO -DOL - PAO -DPCA - AAFES -Inspector General - DPTMSEC -Tenant unit commanders (Aviation, Range Control) -Staff Judge Advocate - Agency -Activity commanders sponsor commanders - Satellite -Subcommunity commanders commanders - MUSARC representatives - Commander - Facility Engineer - Environmental Coordinator - Natural Resources Manager - and any others deemed appropriate by the IC (i.e., Army National Guard (ARNG), U.S. Army Reserves (USAR) – MATES, UTES, CSMS, SMA, etc.). Verify that the EQCC meets monthly, or as often as considered necessary by the chairperson. (1)(2)
...	...
16-8. Installation personnel involved in environmental affairs should receive the necessary environmental training (GMP).	Check with Environmental Officer to determine what training is being conducted. Types of personnel who should receive training, and kinds of training include: (2)(31)(36) - environmental staff members (program management plus specialized training as required) - command staff (environmental awareness) - troops (garrison units, AT - USAR/ARNG) (environmental awareness plus specialized training as required) - installation managers (environmental awareness plus specialized training as required) - civilians (specialized training as required). Verify that troop units incorporate environmental training in the routine training plans (active garrison units and those at USARCs). (2)(36)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (13) Engineering, Plans, and Services (EP&S) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (SJA) (27) Inspector General (IG) (31) Directorate of Personnel and Community Activities (DPCA) (32) Directorate of Resource Management (DRM) (34) Civilian Personnel Office (CPO) (36) Directorate of Plans, Training, and Mobilization (DPTM)

COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
16-9. Environmental compliance information should be incorporated into the DEMIS via ACTS (GMP).	Verify that DEMIS is regularly updated. (2) Verify that semi-annual submission suspenses are being met. (2)
...	...
16-10. Environmental compliance assessments will be undertaken in accordance with Army regulation (AR 200-1, para 12-8).	Verify that the installation authorizes an external assessment not less frequently than once every 4 years (yr). (1)(2) Verify that the installation develops a corrective action plan to correct the deficiencies identified in the external assessment, and that the plan is updated annually (See Appendix 16-1). (1)(2) Verify that the installation performs an internal assessment at the midpoint between external assessments. Internal assessments will be conducted per this manual. (1)(2)(22) (NOTE: Internal assessments may be conducted by in-house staff or contracted.)
...	...
16-11. Noncompliance and violations must be reported to proper offices within established timelines (AR 200-1, para 12-7a and 12(b) through 12(d)).	Verify that the commander of any installation, activity, or unit who receives notice of noncompliance or violation, or is, or will be unable to comply with applicable regulations, notifies their MACOM immediately, by telephone. (1)(21)(22)
...	...
16-12. The Inspector General (IG), and the Internal Control Section of DRM should be proactively involved in environmental affairs (GMP).	Verify that Environmental Coordinator is familiar with IG and Internal Control Section environmental activities. (2)(27)(32) Determine whether or not the IG (during routine visits) is assisting the EO with elevating the environmental awareness, by following up on actions other installation activities may have, to correct noncompliance issues and subsequently provides timely written notice and forwards copies of the written notice, report, or corrective action plan as required. (2)(27)(32)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (13) Engineering, Plans, and Services (EP&S) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (SJA) (27) Inspector General (IG) (31) Directorate of Personnel and Community Activities (DPCA) (32) Directorate of Resource Management (DRM) (34) Civilian Personnel Office (CPO) (36) Directorate of Plans, Training, and Mobilization (DPTM)

COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PROCUREMENT OF GOODS	
16-13. Certain procured products must be made from recovered solid waste (Resource Conservation and Recovery Act (RCRA) Section 6002, 40 CFR 248 through 253).	Verify that procurement officer is aware of USEPA guidelines, and maintains a current set of the guidelines. (1)(2) Verify that purchases of an item (or of functionally equivalent items) that exceed $10,000 within a fiscal year, and for which USEPA has issued guidelines, are made in accordance with those guidelines. (1)(2) (NOTE: Alternate guidelines may be developed to ensure compliance, but some guidelines must be established and followed for the items USEPA covers under this Act.)
...	...
ENVIRONMENTAL AGREEMENTS	
16-14. Environmental agreements will be prepared according to regulation (AR 200-1, para 12-6c through 12-6e).	Verify that draft environmental agreements contain: (2)(22) - procedures for schedule modification and dispute resolution - provisions for reimbursement to state governments for oversight expenditures in relation to the Army activity subject to the agreement - language prescribed by the Department of the Army (DA) for agreements relating to CERCLA, and prepared for installations included on or proposed for inclusion on the NPL under CERCLA. Verify that draft agreements are forwarded through MACOM to Headquarters, Department of the Army (HQDA) (DAJA-EL) WASH DC 20310-2210, for review and coordination. Draft agreements must be accompanied by: (1)(2) - a brief description of the problem, the proposed action, and the parties to the agreement - a map delineating the location of each site addressed in the agreement - a funding plan that would ensure that the compliance schedule could be met. Verify that public review and comment is provided for according to the requirements of NEPA, CERCLA, or other relevant Federal/state laws, where applicable. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (13) Engineering, Plans, and Services (EP&S) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (SJA) (27) Inspector General (IG) (31) Directorate of Personnel and Community Activities (DPCA) (32) Directorate of Resource Management (DRM) (34) Civilian Personnel Office (CPO) (36) Directorate of Plans, Training, and Mobilization (DPTM)

COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
A-106 POLLUTION ABATEMENT PLAN, RCS 1383 REPORT, AND ACTS	
16-15. Determine actions or changes since previous review of the A-106 Pollution Abatement Plan/RCS 1383 Report and ACTS submissions (GMP).	Obtain copies of previous ACTS and 1383 reports and determine if non-compliance issues have been resolved and whether issues requiring funding solutions for CMPA and INOV entries (at minimum) have been addressed in 1383 submissions. (1)(2)
...	...
16-16. The installation should have copies of all relevant Federal, DOD, and ARs on the A-106 Pollution Abatement Plan/RCS 1383 Report and ACTS submissions (GMP).	Determine whether copies of the following regulations and publications are maintained and kept current at the installation: (1)(2) - RCS 1383, *Report Policy and Guidance.* - AR 200-1, *Environmental Protection and Enhancement.* - *Army Compliance Tracking System (ACTS) Guidance.*
...	...
16-17. ACTS submissions must be in accordance with DOD and HQDA guidance to support RCS 1485/DEMIS Reports (AR 200-1, para 22-11a(4)).	Obtain copy of the previous year's ACTS entries (at least 3 quarters). (2) Verify that ACTS submissions are in accordance with DOD HQDA requirements and deadlines (quarterly). (2) Verify that members of the installation have received training on the use of ACTS Software. (2)
...	...
16-18. The A-106 / RCS 1383 report and ACTS submissions process must be incorporated into the Army planning, programming, and budgeting system (AR 200-1 para 12-11b(1)(d)).	Obtain a copy of the previous year's two A-106 / RCS 1383 reports. (1)(21) Ensure that 1383 exhibits are properly classified in accordance with 1383 guidance. (1)(21) (NOTE: See Appendix 16-2 for pollutant categories.) Compare the Spring 1383 Report with the environmental requirements in the installation budget request. (1)(21)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (13) Engineering, Plans, and Services (EP&S) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (SJA) (27) Inspector General (IG) (31) Directorate of Personnel and Community Activities (DPCA) (32) Directorate of Resource Management (DRM) (34) Civilian Personnel Office (CPO) (36) Directorate of Plans, Training, and Mobilization (DPTM)

COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
16-19. The A-106 / RCS 1383 report and ACTS submissions must be completed in an accurate manner (AR 200-1, para 12-11b).	Determine if the installation has available a copy of the current HQDA Policy and Guidance for completion of the RCS 1383 report. (1)(2) Verify that members of the installation have received training on the DB1383 software. (2) Verify that the installation uses appropriate sources and resources for establishing project cost estimates, pollution categories, and Law/Regulation codes, i.e., COE field offices, MACOM, relevant regulations. (2) Verify that ACTS entries for noncompliance are reflected in 1383 CMPA and INOV entries if funding is required to effect compliance. (2) Compare 1383 submissions with installation budget submissions (VENC or DERA entries) identifying. Identify/obtain explanations of discrepancies. (1)(2)
...	...
16-20. Semiannual 1383 Reports must be prepared at the installation or activity level (AR 200-1, para 12-11b(2)(c) and 12-11b(2)(d)).	Verify that the installation submits the 1383 Report in accordance with MACOMs guidelines. (1)
...	...
CONSTRUCTION	
16-21. Environmental surveys will be conducted before the selection of construction sites (AR 200-1, para 12-14).	Verify that surveys are conducted in accordance with AR 415-15 before site selection. (1) Verify that the Environmental Office is part of the project review process for new construction and renovation (plans/specifications) to ensure environmental compliance (i.e., work orders, in-house, A/E designs, and MCA, MCAR and MCARNG projects). (13)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (13) Engineering, Plans, and Services (EP&S) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (SJA) (27) Inspector General (IG) (31) Directorate of Personnel and Community Activities (DPCA) (32) Directorate of Resource Management (DRM) (34) Civilian Personnel Office (CPO) (36) Directorate of Plans, Training, and Mobilization (DPTM)

COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
REAL PROPERTY TRANSACTIONS	
16-22. A comprehensive inventory and evaluation of existing environmental conditions will be conducted on all real property before any transaction (AR 200-1, para 12-5).	Verify that a Preliminary Assessment Screening (PAS) is prepared for all Federal real property transfers and other transactions. The PAS will consider: (1)(2) - areas of cultural, historical, or archaeological significance - threatened or endangered species - environmentally sensitive areas - DOD, DA, Federal, regional, state, and local environmental regulatory compliance - any permit, permit discontinuance or closure requirements - properties or structures with known or potential environmental contamination (asbestos, radon, unexploded ordnance, hazardous or toxic materials/substances/wastes) - existing land use plans, IRP reports, and other environmental documentation. Verify that the PAS is reviewed for adequacy by the Army office that reviews associated Record of Environmental Consideration (REC), EA, or EIS. (1)(2) Verify that if the PAS discloses a release, or suspected release of contaminants, U.S. Army Environmental Center (USAEC) is notified for consideration under the NCP. (1)(2) (NOTE: Non-Army parties will be requested to perform the PAS for transactions that they have initiated.) (NOTE: If the transaction qualifies for a categorical exclusion (CX), a separate PAS will be prepared before the record of environmental consideration, and will be included in the REC for review.)
...	...
16-23. Proper notification of the contract of sale and associated covenants is the responsibility of the Army proponent (AR 200-1, para 12-5).	Verify that the proponent provides notice to the disposal agency, or other Federal agency if the transaction is subject to a transfer agreement, of the contract of sale and covenants as required by AR 200-1. (1)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (13) Engineering, Plans, and Services (EP&S) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (SJA) (27) Inspector General (IG) (31) Directorate of Personnel and Community Activities (DPCA) (32) Directorate of Resource Management (DRM) (34) Civilian Personnel Office (CPO) (36) Directorate of Plans, Training, and Mobilization (DPTM)

COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) USA ECAS	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
SUPPORT REQUIREMENTS **16-24.** *The* Environmental Officer should maintain good rapport with the supporting MACOM Environmental Office, and provide environmental support to respective US Army Reserve Centers (USARCs), Area Maintenance Support Activities (AMSAs), Major US Army Reserve Commands (MUSARCs), Army Reserve Commands (ARCOMs), and Weekend Training sites (WETs), ARNG tenants (*i.e.*, UTES, MATES, CSMSs, etc.) that exist on the installation to include "other tenants" (GMP).	*Determine the nature of the working relationship between the Environmental Officer and the respective MACOM Environmental Officer:* (1)(2) - Environmental Officer should consult with the MACOM Environmental Officer on such matters as: (1)(2) - spill reporting - NOV reporting - information updates - funding requirements. - MACOM in turn should provide necessary environmental support, guidance and resources to the installation. Verify that the Environmental Officer at the installation provides the necessary environmental support to the satellite facilities (USARCs, AMSAs, ARCOMs, WET sites) on: (1)(2) - training - permits - UST program - used oil collection - used solvent collection - hazardous waste/hazardous material support - DRMO contract support - spill support/notification - environmental project programming.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (13) Engineering, Plans, and Services (EP&S) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (SJA) (27) Inspector General (IG) (31) Directorate of Personnel and Community Activities (DPCA) (32) Directorate of Resource Management (DRM) (34) Civilian Personnel Office (CPO) (36) Directorate of Plans, Training, and Mobilization (DPTM)

Appendix 16-1

Definitions of USEPA Class and Compliance Status of Projects

CLASS I

Project Assessment = HIGH
Compliance Status: CMPA, INOV, ESDP
USEPA Class Number 1

Projects required to meet the provisions of assigned compliance agreement or consent order; project required to correct deficiencies found on an USEPA or state inspection; other projects needed to come into compliance when statutory/regulatory deadlines have passed.

CLASS II

Compliance Status: ESDF, PSDF
USEPA Class Number 2

Project needed to meet future compliance deadlines for which planning must have already started.

CLASS III

Compliance Status: ESRO, ESRE, ESDL, OTHR
USEPA Class Number 3

All other projects which, while important, are not related to imminent compliance requirements.

Appendix 16-2

Pollutant Categories for the A-106 Pollution Abatement Plan/RCS 1383 Report

Media	Law/Regulation	Pollutant Category	Code
1	CAA	Permits (fees and applications preparations and modification costs)	PRMT
		National Ambient Air Quality Standards	
		- Point Source Control	NAQP
		- State Implementation Plan Requirements	SIPS
		Pollution Prevention	POLP
		Waste Minimization	WMIN
		National Emission Standards for Hazardous Pollutants	NEHP
		Control of Toxic Air Pollutants	CTAP
		Control of Volatile Organic Compounds (VOCs)	CVOC
		Asbestos	ASBS
		Radon	RADN
		Training	TRNG
2	CWA	Point Source Control (Sec 402)	PSCS
		Permits (fees and applications preparations and modification costs)	PRMT
		Marine Sanitation Devices	MSDV
		Waste Minimization	WMIN
		Pollution Prevention	POLP
		Pre-Treatment	PTRQ
		Toxic Water Pollutants (Sec 304)	TWPS
		Estuaries	ESTU
		Wastewater Treatment	WWTR
		Spill Prevention, Control and Countermeasures Plan	SPCC
		Stormwater Point Source	SWPS
		Wetlands (Sec 404)	WLND
		Non-Point Source	NPTS
		Training	TRNG
3	SDWA	Primary Drinking Water Standards	PDWS
		Permits (fees and applications preparations and modification costs)	PRMT
		Waste Minimization	WMIN
		Underground Injection Control	UNIC
		Pollution Prevention	POLP
		Secondary Drinking Water Standards	SDWS
		Lead in Drinking Water	PBDW
		Sole Source Aquifer	SSAQ
		Wellhead Protection	WLHP
		Training	TRNG

Appendix 16-2 (continued)

Media	Law/Regulation	Pollutant Category	Code
4	RCRA-C	Hazardous Waste Storage and Disposal	HAZD
		Hazardous Waste Disposal Costs	DISP
		Permits (fees and applications preparations and modification costs)	PRMT
		Waste Minimization	WMIN
		Pollution Prevention	POLP
		Generator Requirements	GENR
		Transporter Requirements	TRAN
		Closure Plans (Sec 6008)	CPLN
		Corrective Action (Sec 3004 u & v)	CORA
		Training	TRNG
5	RCRA-D	Permits (fees and applications preparations and modification costs)	PRMT
		Groundwater Monitoring Installation	GWMI
		Landfills	SUBD
		Pollution Prevention	POLP
		Solid Waste Management Plans	SWMP
		Recycling Programs	RCYP
		Training	TRNG
6	RCRA-I	Groundwater Monitoring Installation	GWMI
		Underground Storage Tanks	USTS
		Pollution Prevention	POLP
		Corrective Action (Sec 3004 u & v)	CORA
		Training	TRNG
7	Superfund (SFND)/ (CERCLA/SARA) and RCRA Corrective Actions	Removal Action	RMVA
		Waste Minimization	WMIN
		Toxic (Pretreatment)	PRET
		Operating Units and Long-Term Monitoring	OPLM
		Hazardous Waste Storage and Disposal	HAZD
		Groundwater	GWAT
		Pollution Prevention	POLP
		Preliminary Assessment/Site Investigation	PASI
		Listing Site Investigation	LISI
		Remedial Investigation and Feasibility Study	RIFS
		Remedial Investigation	RINV
		Feasibility Study	FEAS
		Remedial Design	REMD
		Remedial Action	REMA
		Training	TRNG
8	TSCA	Storage and Disposal of PCBs	PCBS
		Waste Minimization	WMIN
		Pollution Prevention	POLP
		Training	TRNG
9	FIFRA	Pesticide Storage, Application and Disposal	PSAD
		Waste Minimization	WMIN
		Pollution Prevention	POLP
		Training	TRNG

Appendix 16-2 (continued)

Media	Law/Regulation	Pollutant Category	Code
10	Historic Preservation Act (HPA)	Archeological Surveys	ARCH
		Historic Preservation Surveys	HIST
		Mitigation Measures	MITM
		Training	TRNG
11	Natural Resources Management	Endangered Species Surveys	ENDG
		Mitigation Measures	MITM
		Forest Management	FSTM
		Land Management	LNDM
		Training	TRNG
12	NEPA	Preparation of EIS/EA on Specific Projects	EAIS
		Mitigation Measures Required Through Record of Decision	MITM
		Training	TRNG
13	Asbestos Management Program	Asbestos	ASBS
		Training	TRNG
14	Noise Control Act (NCA)	Noise Control Planning	NPLN
		Pollution Prevention	POLP
		Construction	NCON
		Training	TRNG
15	Radon Program	Radon	RADN
		Training	TRNG
16	Environmental Program Management		
17	Hazardous Materials Management		

INSTALLATION:	COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) USA ECAS	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (6) Director of Logistics (DOL) (13) Engineering, Pans, and Services (EP&S) (21) Public Affairs Office (PAO) (22) Staff Judge Advocate (SJA) (27) Inspector General (IG) (31) Directorate of Personnel and Community Activities (DPCA) (32) Directorate of Resource Management (DRM) (34) Civilian Personnel Office (CPO) (36) Directorate of Plans, Training, and Mobilization (DPTM)

Section 17

HAZARDOUS MATERIALS MANAGEMENT

SECTION 17

HAZARDOUS MATERIALS MANAGEMENT

A. Applicability of this Protocol

This protocol applies to implementing requirements associated with the management of hazardous materials. Most Army 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 Army installations is too lengthy to include in this protocol. Chemicals that have hazardous properties, i.e., toxic chemicals, flammable substances, reactive substances, and corrosive materials are routinely used at Army installations.

This protocol primarily addresses management and planning related to hazardous materials. Oil, pesticides, and asbestos are hazardous materials that require special management practices at Army installations, and are addressed in separate protocols. Radioactive substances and the general category of hazardous wastes also are not included in this protocol. As directed by the Army Environmental Center (AEC), this protocol does not focus on handling, storage, or transportation requirements for hazardous materials as outlined in Title 29 and Title 49 of the Code of Federal Regulations (CFRs).

B. Federal Legislation

- *The Federal Water Pollution Control Act*, commonly known as the *Clean Water Act (CWA)*, as amended 4 February 1987, 33 U.S. Code (USC)) 1251-1387, Public Law (PL) 100-4, governs the control of water pollution in the nation. The objective of the *CWA* is to restore and maintain the chemical, physical and biological integrity of the nation's waters. To achieve this objective, the following must be done:
  - the discharge of pollutants into the navigable waters be eliminated by 1985
  - wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by 1 July 1983
  - the discharge of toxic pollutants in toxic amounts be prohibited
  - Federal financial assistance be provided to construct publicly owned waste treatment works
  - areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each state

- a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and the oceans;
- programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution (33 USC 1251).

• Executive Order (EO) 12088, *Federal Compliance with Pollution Standards*, of 13 October 1978 requires Federally owned and operated facilities to comply with applicable Federal, state, and local environmental requirements. It makes the head of each executive agency responsible for seeing to it that the agencies, facilities, programs, and activities it funds meet applicable Federal, state, and local environmental requirements or to correct situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget.

C. State/Local Requirements

Hazardous materials are not usually regulated on the state level. However, local agencies (county/city fire departments) will normally require flammable/combustible materials to be stored according to specific requirements. Usually, these local ordinances will follow the National Fire Protection Association (NFPA) Fire Protection Guide on Hazardous Materials (Pamphlets 325A, 325M, 49, 491F and 704M).

D. Department of Defense (DOD) Regulations

• DOD Directive 6050.8. *Storage and Disposal of Non-DOD-Owned Hazardous or Toxic Materials on DOD Installations*. This directive prohibits the storage of non-DOD hazardous materials on DOD installations.

E. U.S. Army Regulations (ARs)

• AR 200-1, *Environmental Protection and Enhancement*, Chapter 5, *Hazardous Material Management Program*, implements the Army program to minimize hazards to public health and damage to the environment. It provides guidance for the management of hazardous materials including storage and disposal.

F. Key Compliance Requirements

- Hazardous Substance Release Reporting - Army installations are required to notify U.S. Environmental Protection Agency (USEPA) and appropriate state agencies when a release of a reportable quantity of a hazardous substance occurs. *Release* includes any discharge, spill, or leak to air, water, or land, as stipulated in 40 CFR 302. This is outlined in Section 7, *Comprehensive Environmental Response, Compensation, and Liability Act/ Superfunds Amendments and Reauthorization Act (CERCLA/SARA).*

- Hazardous Materials Training - Personnel who handle hazardous materials are required to be trained in the safe handling and management of the materials they work with routinely.

G. Responsibility for Compliance

- Director of Logistics (DOL) has primary responsibility to receive, store, and issue all hazardous commodities. DOL 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 DOL. The proper maintenance and operation of flammable/ combustible materials storage facilities, acid storage facilities and compressed gas storage facilities is also the responsibility of DOL. DOL ensures all hazardous materials are properly labeled.

- Medical Department Activity (MEDDAC)/Medical Center (MEDCEN) is responsible for reviewing the issue exception codes for hazardous materials assigned by DOL, and approving or disapproving the recommendations.

- Directorate of Engineering and Housing (DEH) is responsible for the storage and handling of all hazardous materials in properly designed facilities. DEH is also responsible for reporting releases of reportable quantities of hazardous substances to USEPA and appropriate state authorities.

- Installation 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.

- Safety Officer is responsible for conducting work place safety evaluations and inspections of the handling and storage of hazardous materials. The Safety

Officer provides the appropriate manager with a report of findings and recommended corrective actions. The Safety Officer is also responsible for ensuring the prompt and accurate investigation of any hazardous material mishaps that result in injury or property damage.

H. Key Compliance Definitions

- *Hazardous or Toxic Materials* - materials defined in section 101 of CERCLA or that are of an explosive, flammable, or pyrotechnic nature (DOD Directive 6050.8, Section C).

- *Personnel Training* - training to meet the requirements of all applicable regulations. This level of training ensures a high level of competency in performing within a given job description (AR 200-1, Glossary).

- *Waste Minimization* - any source reduction or recycling activity that is undertaken by a generator that results in the reduction of hazardous waste or the reduction in toxicity of hazardous waste that is either generated or subsequently treated, stored, or disposed of (AR 200-1, Glossary).

HAZARDOUS MATERIALS MANAGEMENT

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:	CONTACT THESE PERSONS OR GROUPS:(a)
All installations	17-1 through 17-5	(1)(2)(6)(7)(8)(9)
Handling and storage of hazardous materials	17-6 through 17-11	(1)(2)(6)(7)(8)(9)

(a)CONTACT/LOCATION CODE:

(1) Directorate of Engineering and Housing (DEH)/DPW
(2) Environmental Coordinator (EC)
(6) Director of Logistics (DOL)
(7) Fuels Management Officer (DOL/DEH)
(8) Transportation/Maintenance Officer (DOL)
(9) Chief of Operations and Maintenance (O&M)

HAZARDOUS MATERIALS MANAGEMENT

Plans and Maps to Review

- Spill Prevention, Control and Contingency Plan (SPCC)

Records to Review

- Spill Reports
- Hazardous Material Inventory

Physical Features to Examine

- Hazardous Material Storage Areas (DOL - Supply, Shops)
- Shop Activities
- Flammable Storage Cabinets
- Shipping and Receiving Areas
- Supply and Storage Shops (DEH, DOL)
- Self Service Supply Center (DOL)
- Military Unit Supply/Storage Areas
- Print/Reproduction Shop

People to Interview

- Directorate of Engineering and Housing (DEH)/DPW
- Environmental Coordinator (EC)
- Director of Logistics (DOL)
- Fuels Management Officer (DOL/DEH)
- Transportation/Maintenance Officer (DOL)
- Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT USA ECAS	
REGULATORY REQUIREMENT:	**REVIEWER CHECKS:**
ALL INSTALLATIONS	
17-1. Determine actions or changes since previous review of hazardous materials management (GMP).	Examine copy of previous review report to determine if noncompliance issues have been resolved. (1)
...	...
17-2. All relevant regulations, directives, and guidance documents on hazardous materials should be maintained at the installation (GMP).	Verify that the following documents, which are applicable, are maintained and kept current at the installation. (1)(6)(7)(8)(9) - 40 CFR 112, *Oil Pollution Prevention.* - EO 12088, *Federal Compliance with Pollution Standards.* - DOD Directive 6050.8, *Storage and Disposal of non-DOD owned Hazardous or Toxic Materials in DOD installations.* - AR 200-1, *Environmental Protection and Enhancement.* - NFPA, *Fire Protection Guide of Hazardous Materials.* - Applicable state and local regulations.
...	...
17-3. Installations are required to comply with applicable state and local hazardous materials requirements (EO 12088, Section 1-1).	Verify that the installation is complying with applicable state and local hazardous materials requirements. (1)(2) Verify that the installation is operating according to all applicable permits issued by the state or local agencies. (1)(2) (NOTE: Issues which are typically regulated by state and local agencies include: - transportation of hazardous materials - storage of hazardous materials - release reporting requirements.)
...	...
17-4. Management of paperwork, materials and personnel should be done in a manner that prevents noncompliance, re-occurrence of noncompliance and that precludes Notices of Violation (NOVs), letters of citation, promotes good public relations and addresses systems weakness in the overall operation of the program (GMP).	Determine what management systems are in place. (1)(2) Verify that the existing system addresses the issues associated with hazardous materials by: (1)(2) - interviewing personnel - reviewing paperwork - observing the operation or activity. Determine if training is being conducted. (1)(2)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT USA ECAS	
REGULATORY REQUIREMENT:	**REVIEWER CHECKS:**
17-5. Installations are required to comply with applicable regulatory requirements issued since the finalization of the manual and those not currently included in the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning hazardous materials have been issued since the finalization of the manual. (1) Verify that the installation is in compliance with newly issued regulations. (1) (NOTE: For findings under this item, the Regulatory Requirement and the Basis of Finding should be provided to SFIM-AEC-BCE for future inclusion in the manual.)
...	...
HANDLING AND STORAGE OF HAZARDOUS MATERIALS	
17-6. A master listing of all hazardous substances at handling, storage, and transfer facilities is required as a part of the SPCC Plan (AR 200-1, para 8-4b(4).	Obtain a copy of the hazardous substances list. (1)(2)(9) Verify that personnel have knowledge of the location of all hazardous materials storage areas on installation. (1)(6)(7)(8)(9) (NOTE: Hazardous constituents of expired materials discovered during the inventory process, or at any other time, should be identified prior to disposal. See appropriate checklist item in *Resource Conservation and Recovery Act Subtitle C (RCRA-C).*)
...	...
17-7. Personnel who manage, use, store, and/or ultimately dispose of hazardous materials must be trained in spill response actions (40 CFR 112.7e(10)).	Verify that personnel who manage, use, store, and/or ultimately dispose of hazardous materials are trained in spill response and related handling issues. (1)(2)
...	...
17-8. Hazardous material management is to be considered an integral part of the Army Hazardous Waste Minimization Program (AR 200-1, para 6-6b).	Verify that the installation has an Army Hazardous Waste Minimization Program in existence and that it addresses hazardous material management through the use of: (1)(2) - process substitution - material recovery - recycling - reuse.
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT USA ECAS	
REGULATORY REQUIREMENT:	**REVIEWER CHECKS:**
17-9. The installation should coordinate with the fire department concerning the types of hazardous chemicals used at the installation, the areas where they are used, what they are used for, and the quantities used in a given operation (GMP).	Verify that the fire department is aware of the hazardous chemicals used at the installation. (7) Verify that the fire department is aware of areas that are at high risk for chemical incidents. (7)
...	...
17-10. Installations may not allow the storage of non-DOD-owned toxic or hazardous materials on site (DOD Directive 6050.8, para D, AR 200-1, para 5-4).	Verify that the installation does not allow the storage of non-DOD-owned toxic or hazardous materials on site. (1)(6) (NOTE: This does not apply to: - agreements with General Services Administration for the storage of strategic and critical materials in the National Stockpile Program - agreements between DOD Components and other Federal agencies for temporary storage or disposal of explosives - emergency lifesaving assistance to civil authorities involving the temporary storage or disposal of explosives - *excess explosive generated under a DOD contract* - arrangements with the Department of Energy for the temporary storage of nuclear materials or non-nuclear classified materials - military resources used during peacetime civil emergencies - assistance and refuge for commercial carriers carrying material of other Federal agencies during transportation emergencies.)
...	...

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M)

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT USA ECAS	
REGULATORY REQUIREMENT:	**REVIEWER CHECKS:**

17-11. Installations must have a written Oil and Hazardous Substance Contingency Plan (OHSCP) for spill events (AR 200-1, para 8-1d(7)).	Verify that the OHSCP contains the following items while interviewing personnel from Installation Supply, Fire Department, Safety Department, and the DEH: (1)(6)(7)(8)(9)
	- all hazardous substances storage areas are included in the plan
	- one individual or department is designated to initiate spill response
	- plan is written, reviewed, and made available to other departments on installation
	- plan is rehearsed through periodic drills and demonstrations
	- materials and equipment needed to manage a spill are specified in the plan readily available including:
	  - respiratory protection
	  - absorbents
	  - ear/eye protection
	  - spill kits
	  - protective clothing
	  - neutralizers
	- response materials and protective clothing are readily available
	- emergency medical procedures and first aid materials are specified in the plan
	- hazard control materials are listed in plan including:
	  - hazard signs and labels
	  - rope, wire, tape
	  - monitors, survey meters
	- plan specifies phone numbers of Federal, state and local agencies that must be notified when a spill occurs
	- plan includes contacts for agencies that provide emergency advice and assistance (CHEMTREC)
	- plan specifies personnel decontamination procedures that must be followed after spill has been cleaned up.

(1) Directorate of Engineering and Housing (DEH)/DPW (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M)

INSTALLATION:	COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT USA ECAS	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

(1) Directorate of Engineering and Housing (DEH) (2) Environmental Coordinator (EC) (3) Preventive Medicine Officer (6) Director of Logistics (DOL) (7) Fuels Management Officer (DOL/DEH) (8) Transportation/Maintenance Officer (DOL) (9) Chief of Operations and Maintenance (O&M)