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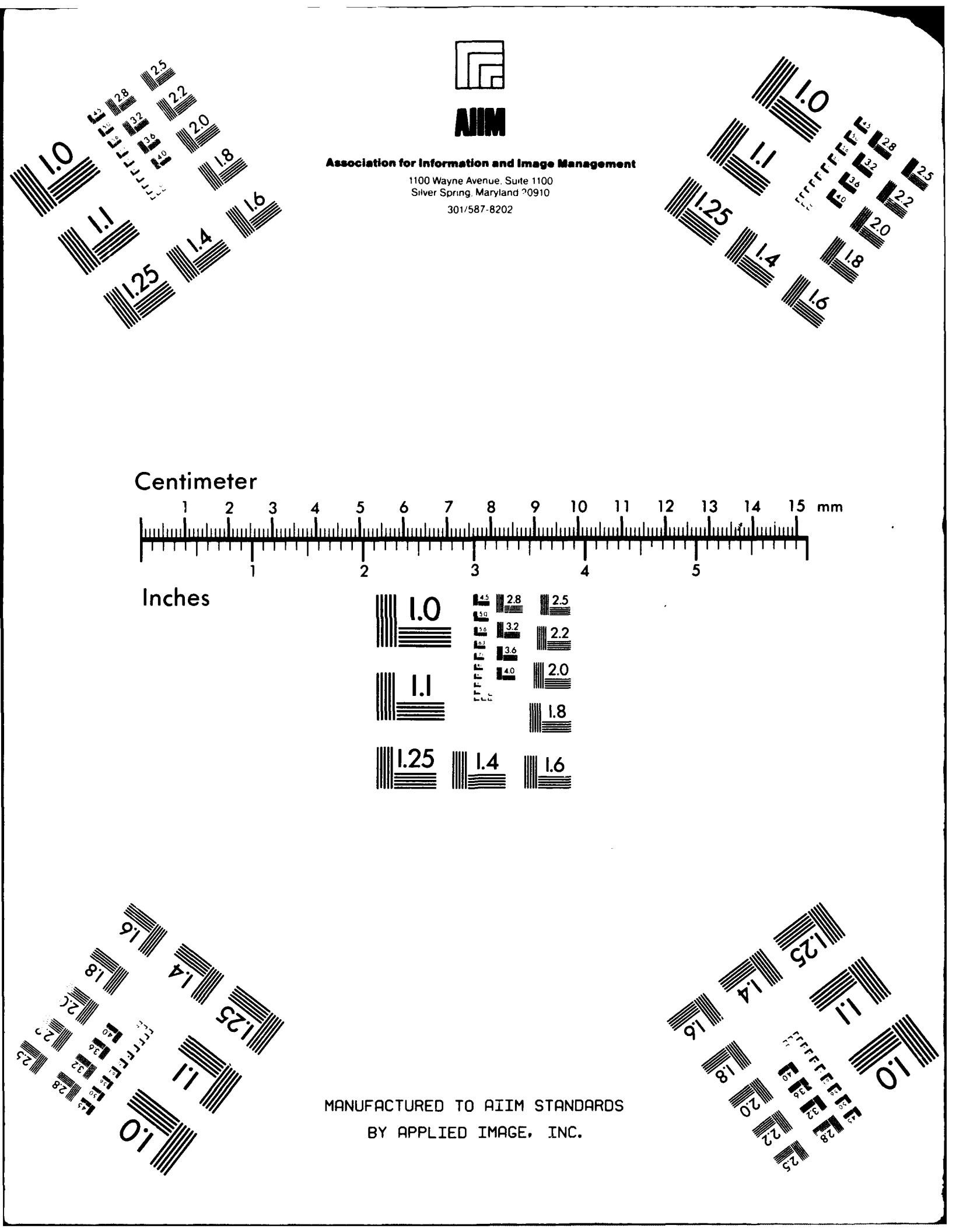
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USACERL Special Report EC-94/01
October 1993

US Army Corps
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Construction Engineering
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Environmental Compliance Assessment Protocol–Federal Aviation Administration (ECAP–FAA)

Federal Aviation Administration

Southern Region Airway Facilities

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

In 1992, the FAA developed a program to maintain compliance with all Federal, state, and local environmental regulations. The goal is to protect human health and safety and the environment. The Southern Region of the FAA, which includes eight states and the Caribbean area, developed and implemented a specific environmental assessment and management program tailored to the type and size of their facilities and operations. The resulting system — the Environmental Compliance Assessment Protocol–Federal Aviation Administration (ECAP–FAA) — combines Federal environmental regulations with documentation of good management practices and risk management information into a series of checklists that show legal requirements and list specific items or operations to review.

ECAP–FAA incorporates existing checklists from USEPA and private industry. The system has been tested at several FAA facilities. The manual is updated continually to address new environmental compliance laws and regulations.

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13. ABSTRACT (Maximum 200 words)

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

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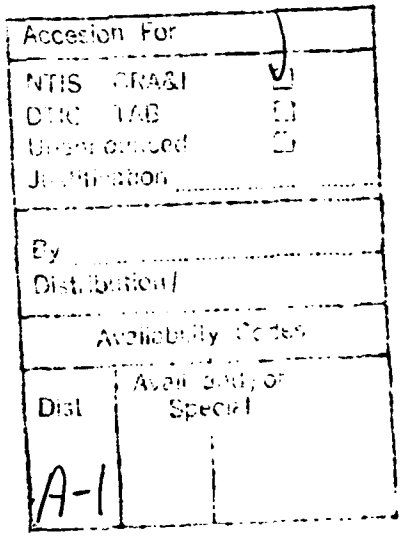
FOREWORD

This work was performed for the South Atlantic Division, U.S. Army Corps of Engineers, under military interdepartmental purchase request number C-92-29, dated 24 July 1992. The technical monitor was Glenda Ashford, CESAD-PD-R.

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. Kurt A. Buehler is Acting Chief, CECER-EC, and Dr. William D. Goran is 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 Federal Aviation Administration (FAA) Facilities. 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 any of their employees, makes any warranty, express 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 MANUAL

ASSESSMENT PROTOCOLS

INTRODUCTION

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 FAA Facilities and are more stringent than Federal regulations included in this manual. This manual, with local supplements, is intended to serve as the primary tool in conducting an environmental compliance evaluation. Specifically, this manual:

1. Compiles applicable Federal environmental regulations with FAA Facilities 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 Environmental Compliance Assessment Protocol, FAA (ECAP-FAA).

This manual is divided into sections (assessment areas). They are:

Air Emissions Management
Cultural and Historic Resources Management
Hazardous Materials Management
Hazardous Waste Management
Natural Resource Management
Pesticide Management
Petroleum, Oil, and Lubricant (POL) Management
Solid Waste Management
Special Pollutants Management (includes asbestos, PCBs, radon, and noise)
Underground Storage Tanks (UST) Management
Water Quality Management (includes wastewater and potable water):

The information in this manual applies to all FAA Facilities in the United States and its territories. For the purpose of this manual, a "facility" is defined as buildings and/or sites that share the same cost center code. The contents of this manual are up-to-date as of 17 August 1993.

Table of Contents

INTRODUCTORY SECTION

PROTOCOL SECTION

ENVIRONMENTAL COMPLIANCE EVALUATION PROCESS

The environmental assessment process can be divided into three distinct phases:

- Pre-evaluation 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. Previsit Questionnaire. The purpose of the previsit questionnaire is to collect information that will familiarize the evaluation team with the facility 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 internal evaluation team members are starting from the same base of information. It is important to remember that most records, reports, and documentation will be found at the lead office of a facility. Table 1 contains a sample previsit questionnaire.

2. Define Evaluation Scope and Team Responsibilities. The facility or FAA 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, handling of tenants and off-facility 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 facility. 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 assessment 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.

TABLE 1

PRE-ASSESSMENT ENVIRONMENTAL MANAGEMENT QUESTIONNAIRE

This questionnaire will provide background information necessary to plan and conduct an environmental compliance assessment.

Region:_____

Sector:_____

Name of Facility:_____

Facility Type:_____

Cost Center Code:_____

Facility I.D.:_____

QUESTION/DESCRIPTION	RESPONSE	REFERENCE
SECTION 1. Air Emissions Management:		
1. Does the facility operate a fuel burner (central steam plant, or hot water or hot water steam boiler)?	_____	If YES how large and what fuel is used?
2. Does the facility dispense, store, or transfer gasoline?	_____	If YES see checklist items 1 - 5 through 1 - 9.
3. Does the facility operate sources of CFC's and Halons?	_____	If YES see checklist items 1 - 10 through 1 - 15.

QUESTION/DESCRIPTION	RESPONSE	REFERENCE

SECTION 2. Cultural and Historic Resources Management:

1. Does the facility have any historic properties under its jurisdiction?

_____ If YES see checklist item 2 - 9.

2. Does the facility have cultural resources? List the facility's cultural resources below:

_____ If YES see checklist items 2-3 through 2-8.

_____

_____

_____

3. Does the facility have any Native American graves or artifacts, or have any been discovered during an operation?

_____ If YES see checklist item 2 - 10.

QUESTION/DESCRIPTION	RESPONSE	REFERENCE
SECTION 3. Hazardous Materials Management:		
1. Does the facility store any hazardous materials such as paints, solvents, and pesticides?	_____	If YES see checklist items 3 - 19 through 3 - 35.
2. Have there been any releases or spills of hazardous substances at the facility?	_____	If YES see checklist items 3 - 13 through 3 - 16.
3. Are there any extremely hazardous substances at the facility?	_____	If YES see checklist item 3 - 17.
4. Does the facility: have extremely hazardous substances in excess of 500 pounds (lb) or the threshold planning quantity (see Appendix 3-1); have hazardous chemicals in excess of 10,000 lb; or fall under Standard Industrial Classification Codes 20 to 39?	_____	If YES see checklist item 3 - 18.
5. Does the facility store compressed gases (i.e., oxygen, acrtylene)?	_____	If YES see checklist items 3 - 36 and 3 - 37.
7. Does the facility store acids?	_____	if YES see checklist item 3 - 38.
8. Does the facility transport hazardous material, or offer such materials for transport?	_____	If YES see checklist item 3 - 39.

QUESTION/DESCRIPTION	RESPONSE	REFERENCE
SECTION 4. Hazardous Waste Management:		
1. Is the facility a generator of hazardous waste?	____	If YES see checklist items 4 - 9 through 4 - 15.
a. Is the facility a small quantity generator (i.e., generates less than 1000 kg of hazardous waste in 1 month (mo))?	____	If YES see checklist items 4 - 20 through 4 - 35.
b. Is the facility a very small quantity generator (i.e., generates less than 100 kg of hazardous waste in 1 mo) ?	____	If YES see checklist items 4 - 16 through 4 - 19.

Complete this section before proceeding.

Any waste which is not excepted, which is listed in 40 CFR 261, or which exhibits the following characteristics is a hazardous waste:

- Ignitability (flash point < 140 ^{o}F)
- or Corrosivity (pH < 2 or > 12.5)
- or TCLP Toxicity (for As,Ba,Cd,Cr,Pb,Hg,Se,Ag, and selected pesticides.
- or Reactive. (or CN)

The following are hazardous wastes that may typically be found at a facility:

	CHECK IF USED AT THIS FACILITY	Vol Gen/mo lb	Vol Gen/mo kg.	Vol Accum lb	Vol Accum kg
___	* Solvents	___	___	___	___
___	Liquid Paint	___	___	___	___
___	Paint stripper, remover, or thinner	___	___	___	___
___	Spray paint booth air filters	___	___	___	___
___	Pesticides, Insecticides, Herbicides, etc.	___	___	___	___

___	Battery acid & Caustics (in unserviceable batteries)	___	___	___	___
___	POL Tank Farm fuel system filters	___	___	___	___
___	De-icing solution	___	___	___	___
___	Printing ink, ink solvents and cleaners	___	___	___	___
___	Absorbent materials and soil contaminated with hazardous waste	___	___	___	___
___	Other_____	___	___	___	___
___	Other_____	___	___	___	___
___	Other_____	___	___	___	___
	TOTAL	___	___	___	___

* e.g., Trichlorethane, Methylene, chloride, Tetrachloroethylene, 1,1,1 Trichloroethane, Carbon Tetrachloride, Chlorinated Fluorocarbons, Toluene, MEK, Break-free in liquid form, Mineral Spirits, Xylene

USEPA Generator Designation: ___ Unregulated ___ Small Qty ___ Large Qty

QUESTION/DESCRIPTION	RESPONSE	REFERENCE
3. Does the facility transport hazardous waste?	_____	If YES see checklist items 4 - 72 through 4 - 76.
4. Does the facility handle ignitable, reactive, or incompatible wastes?	_____	If YES see checklist items 4 - 34, 4 - 49, 4 - 52 and 4 - 61.
5. Does the facility have hazardous waste containers?	_____	If YES see checklist items 4 - 46 through 4 - 53.
6. Does the facility store hazardous wastes in tanks?	_____	If YES see checklist items 4 - 54 through 4 - 64.

QUESTION/DESCRIPTION	RESPONSE	REFERENCE
7. Does the facility have restricted wastes?	_____	If YES see checklist items 4 - 77 through 4 - 86.
SECTION 5. Natural Resources Management:		
1. Does the facility have any construction projects?	_____	If YES see checklist items 5 - 13 through 5 - 25.
2. Does the facility have land management responsibilities?	_____	If YES see checklist items 5 - 5 through 5 - 7.
3. Does the facility have endangered or threatened species?	_____	If YES see checklist items 5 - 10 and 5 - 11.
SECTION 6. Pesticide Management:		
1. Do facility personnel engage in the application of pesticides?	_____	If YES see checklist items 6 - 5 through 6 - 14.
2. Does the facility store, mix, or formulate pesticides?	_____	If YES see checklist item 6 - 15 through 6 - 26.
a. Does the facility store/use pesticides classified highly toxic or moderately toxic (bearing DANGER, POISON, WARNING, or the skull and crossbones symbol)?	_____	If YES see checklist items 6 - 19 through 6 - 25.

QUESTION/DESCRIPTION	RESPONSE	REFERENCE
3. Does the facility dispose of pesticides?	____	If YES see checklist items 6 - 27 through 6 - 31.

SECTION 7. Petroleum, Oil and Lubricant (POL) Management:

1. Does the facility store, transport, or dispense petroleum products?	____	If YES see checklist items 7 - 7 through 7 - 14.
2. Have there been any discharges of oil at the facility?	____	If YES see checklist items 7 - 15 and 7 - 16.
3. Does the facility have any bulk storage tanks over 660 gallons (gal)?	____	If YES, see checklist item 7 - 18.
4. Does the facility use dikes as a means of containment for petroleum storage tanks?	____	If YES see checklist items 7 - 19 and 7 - 20.
5. Does the facility have any pipelines?	____	If YES see checklist items 7 - 22 through 7 - 30.
6. Does the facility generate/dispose/transport used oil?	____	If YES, see checklist items 7 - 31 through 7 - 73.

QUESTION/DESCRIPTION	RESPONSE	REFERENCE
SECTION 8. Solid Waste Management:		
1. Does the facility collect or store solid waste on site?	____	If YES, see checklist items 8 - 5 through 8 - 11.
2. Does the facility recycle and reduce solid waste.	____	If YES see checklist item 8 - 12.
3. Does the facility have over 100 office workers?	____	If YES see checklist item 8 - 13.
4. Does the facility have land disposal on site?	____	If YES see checklist items 8 - 14 through 8 - 34.
SECTION 9. Special Pollutants Management:		
1. Does the facility have PCBs of any kind?	____	If YES, see checklist items 9 - 5 through 9 - 12.
a. Does the facility have PCB storage or disposal facilities?	____	If YES, see checklist item 9 - 12.
2. Does the facility have PCB transformers?	____	If YES, see checklist items 9 - 13 through 9 - 20.
3. Has the facility had a PCB spill?	____	If YES see checklist items 9 - 21 through 9 - 23.

QUESTION/DESCRIPTION	RESPONSE	REFERENCE
4. Does the facility have PCB Items (PCB-contaminated heat transfer or hydraulic systems, electromagnets, switches, voltage regulators, capacitors, circuit breakers, reclosers, or cables)?	____	If YES see checklist items 9 - 24 through 9 - 27.
5. Does the facility store PCBs?	____	If YES see checklist items 9 - 29 through 9 - 33.
6. Does the facility transport PCBs or PCB Items?	____	If YES see checklist items 9 - 34 and 9 - 35.
7. Does the facility dispose of PCBs or PCB Items?	____	If YES see checklist items 9 - 36 through 9 - 47.
8. Does the facility perform maintenance/repair on structures coated with asbestos?	____	If YES see checklist item 9-49.
9. Does the facility demolish, renovate, or strip components from structures containing friable asbestos?	____	If YES see checklist item 9-49.
10. Does the facility dispose, or transport for disposal, asbestos or asbestos-containing waste?	____	If YES see checklist items 9 - 49 and 9 - 50.
11. Is the facility located in an area with a potential radon problem?	____	If YES see checklist items 9 - 51 through 9 - 53.

QUESTION/DESCRIPTION	RESPONSE	REFERENCE
12. Does the facility have any possible sources of noise pollution, or have a noise hazardous area?	____	If YES see checklist items 9 - 54 and 9 - 55.

SECTION 10. Underground Storage Tanks (UST) Management:

1. Does the facility have underground fuel tanks?	____	If YES see checklist item 10 - 12.
2. Has the facility repaired, or is it planning to repair, a UST?	____	If YES see checklist item 10 - 16.
3. Does the facility have hazardous materials USTs?	____	If YES see checklist items 10 - 22 and 10 - 26.
4. Does the facility have a deferred UST?	____	If YES see checklist item 10 - 27.
5. Does the facility have a metallic UST?	____	If YES see checklist item 10 - 11.
6. Does the facility have newly-installed USTs (i.e., after May, 1986)?	____	If YES see checklist items 10 - 6 through 10 - 10.
7. Have facility USTs undergone a change of service, or closure?	____	If YES see checklist items 10 - 30 through 10 - 36.
8. Does the facility have substandard USTs?	____	If YES see checklist item 10 - 5.

QUESTION/DESCRIPTION	RESPONSE	REFERENCE
SECTION 11. Water Quality Management:		
1. Does the facility have any point source discharges, or does facility have domestic sewage treatment plants?	_____	If YES see checklist item 11 - 6.
2. Does the facility have storm water discharge not covered by a NPDES permit?	_____	If YES see checklist items 11 - 7 through 11 - 11.
3. Does the facility discharge to a publicly-owned treatment works (POTW)?	_____	If YES see checklist items 11 - 12 through 11 - 14.
4. Does the facility have any personnel engaged in the operation of water pollution control devices?	_____	If YES see checklist item 11 - 15.
5. Does the facility treat, store, and distribute its own drinking water?	-----	If YES see checklist item 11 - 5.

Signature of individual completing this form:_____

Date completed:_____

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

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

General

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

Air Emissions Management

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

Cultural Resources Management

1. Any cultural or archeological resources surveys
2. Management plans for cultural and archeological resources
3. A list of properties nominated for the National Register

Hazardous Materials Management

1. A list of hazardous material storage/use areas
2. A waste minimization plan
3. MSDSs
4. Documentation of personnel training
5. The OHSPC Plan
6. A copy of any reports of spills
7. Copies of the Tier I or Tier II reports
8. Documentation on contaminated sites

Hazardous Waste Management

1. The Hazardous Waste Management Plan
2. A list of hazardous wastes generated at the facility
3. A list of waste generation/storage areas
4. USEPA ID No.
5. Manifests
6. Any permits
7. The biennial report
8. Personnel training records

Natural Resources Management

1. The endangered species survey
2. The Natural Resources Management Plan
3. Any land management plans
4. Recent EAs, EISs, FNSIs, or NOIs

Pesticides Management

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

POL Management

1. The SPCC plan
2. A list of POL storage areas

Solid Waste Management

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

Special Pollutants Management

1. The PCB inventory
2. The PCB annual report
3. The results of the asbestos survey
4. The Asbestos Management Plan
5. The AICUZ Study
6. Noise complaints
7. Radon survey results

Underground Storage Tank Management

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

Water Quality Management

1. Copies of drinking water test results
2. Copies of reports to the state
3. All NPDES/SPDES permits
4. Maps of the storm, sanitary, and industrial sewers
5. A copy of pretreatment standards imposed on the facility
6. A list of maintenance shops/operations to include wash facilities
7. Locations of holding ponds, sedimentation pits, and open/end-of-pipe discharge points.

Site Evaluation Activities - On site, the evaluators will conduct record searches, interviews, and site surveys to determine the compliance status of the facility. 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 Individual Finding Sheet is available to assist evaluators in compiling needed information during an evaluation. An Individual Finding Sheet should be completed for each finding during the evaluation. For the FAA, multiple findings of the same deficiency will be written as one finding for each cost center code with each individual site with the deficiency listed in the comments. These forms comprise the basis of the assessment report. The format and content for evaluation reports will be in a separate supplement. Figure 1 shows a blank Individual Finding Sheet. Figure 2 shows a sample completed Individual Finding Sheet.

All items of the Individual Finding Sheet form 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, FAA, Good Management Practice (GMP)) the facility is being measured against. A condition may be positive if the facility 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 facilities' 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. Five of the 25 drums were rusted and bulging. Item 4-25 in the FAA manual states that 40 CFR 262.34(d)(2) 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 an Individual Finding Sheet.

ECAP-FAA

INDIVIDUAL FINDING SHEET

REGION: _____ SECTOR: _____
FACILITY NAME: _____ FACILITY TYPE: _____
(see reverse)
COST CENTER CODE: _____ FACILITY I.D.: _____
BUILDING I.D.: _____ EQUIPMENT TYPE: _____
(See reverse)

MANUAL SECTION #: _____ TYPE OF FINDING: POS/NEG (circle)
QUESTION #: _____ FINDING SCORE: _____
(See reverse for rating)
GMP: YES / NO

DOES FINDING REQUIRE IMMEDIATE ACTION: YES NO

(If yes, see Figure X for appropriate POC.)

CONDITION

CRITERIA

BASIS OF FINDING

Existing NOV: YES NO DATE: _____
Previous Finding: YES NO DATE: _____

RECOMMENDED SOLUTION(S):

ACTIONS TAKEN TO PROVIDE IMMEDIATE REMEDY:

Signature _____ Date _____

Finding Score

10	Immediate threat to human health or life
9	Immediate threat to environment
8	No license or permit has been obtained when one is required Violating license/ permit standards
7	No monitoring program No records/logs No training of personnel Frequent or serious noncompliance with checklist
6	Records, logs, monitoring, training less than 50% of requirement; less frequent serious noncompliance
5	Approximately 34 - 50% (more than 1/3 and less than 1/2) of records missing; many discrepancies are noted in records; frequent minor noncompliance
4	Approximately 25 - 33% (between 1/4 to 1/3) of records missing; less frequent minor noncompliance
3	Approximately 10 - 24% (more than 1/10 and less than 1/4) of records missing; minor noncompliance in paperwork; an occasional lapse in compliance
2	Approximately 5 - 9% (more than 1/20 and less than 1/10) of records missing or not current, but paperwork present meets requirements
1	Approximately 1 - 4% of records missing and all paperwork present is current and complies with all requirements

For the Critical Indicator Only

0	Balance or emphasis factor assigned to each protocol section or chapter. Three 0s are added to the finding total, *for each section with an absence of 10, 9, and 8 scores*, as a reward.

Figure X
Southern Region Sector Environmental Compliance Managers (SECMs) POCs

ASO RPMS	Alan Stensland	(404) 763-7431
AFS (ARTCC) Atlanta	Dennis Anderson	(404) 946-7755
AFS (ARTCC) Jacksonville	Thomas Allen	(904) 632-1615
AFS (ARTCC) Memphis	Charlie Reed	(901) 365-0970
AFS (ARTCC) Miami	Angus (Buddy) Wall	(305) 592-9770 *371
AFS Atlanta	Mike Bell	(404) 763-7388
AFS Columbia	Jeff Alexander	(803) 765-5945
AFS Covington	Terry Johnson	(606) 262-3104
AFS Jacksonville	Mark Hoskings	(904) 741-0292
AFS Memphis	Bob Bates	(901) 544-3435
AFS Miami	Eric Walter	(305) 526-2688
AFS Montgomery	Wyman McCall	(205) 223-7463
AFS Raleigh	Bruce Pease	(919) 840-5537
AFS Tampa	Jerry Denton	(813) 228-2571
AFS San Juan	Antonio Ramos	(809) 253-4551

Major Facility Types

AFS	Airway Facilities Sector Office
AFSFO	Airway Facilities Sector Field Office
AFSS	Airway Flight Service Station
ARTCC	Air Route Traffic Control Center
ARSR	Air Route Surveillance Radar
ASR	Airport Surveillance Radar
ATCT	Airport Traffic Control Tower
FMP	Field Maintenance Program
NAVAID	Navigation Aid (Glide Slope)
RCAG	Remote Center Air/Ground Communication Facility
RO	Regional Office
RTR	Remote Transmitter/Receiver
TDWR	Terminal Doppler Weather Radar
VOR	Very High Frequency Omnidirectional Range-Test
FSS	Old Flight Service Station

Equipment Type

Diesel Engine Generators (and Fuel)
Gasoline Engine Generators (and Fuel
Propane Engine Generators (and Fuel)
Aboveground Tanks
Belowground Tanks
Oil-filled Transformers (power)
Oil-filled Capacitors
CFC (Chlorofluorocarbons)
Oil Coolant Systems
Anti-freeze
Waste Oil Collectors
Welding Supplies
Wells
Cisterns - Septic Tanks - Wastewater Treatment
Paint

ECAP-FAA

INDIVIDUAL FINDING SHEET

REGION: _____ SECTOR: _____
FACILITY NAME: BVEDC SITE FACILITY TYPE: AFSFC (see reverse)
COST CENTER CODE: _____ FACILITY I.D.: _____
BUILDING I.D.: _____ EQUIPMENT TYPE: _____ (See reverse)

MANUAL SECTION #: 3 TYPE OF FINDING: POS/~~NEG~~ (circle)
QUESTION #: 3-21 FINDING SCORE: _____ (See reverse for rating)
GMP: YES / NO

DOES FINDING REQUIRE IMMEDIATE ACTION: YES NO

(If yes, see Figure X for appropriate POC.)

CONDITION
3 55-gallon drums of a flammable solvent were stored obstructing the fire exit.

CRITERIA
Flammable & combustible liquids shall not be stored in ways that limit the use of the exits, stairways, or areas normally used for the safe egress of people

BASIS OF FINDING (29 CFR 1910.106(d)(5)(i))

Existing NOV: YES ~~NO~~ **DATE:** _____
Previous Finding: YES ~~NO~~ **DATE:** _____

RECOMMENDED SOLUTION(S):
Move drums to a designated storage area.

ACTIONS TAKEN TO PROVIDE IMMEDIATE REMEDY:

Signature Jane Doe Date 10/5/93

Finding Score

10 Immediate threat to human health or life
9 Immediate threat to environment
8 No license or permit has been obtained when one is required
Violating license/ permit standards
7 No monitoring program
No records/logs
No training of personnel
Frequent or serious noncompliance with checklist
6 Records, logs, monitoring, training less than 50% of requirement;
less frequent serious noncompliance
5 Approximately 34 - 50% (more than 1/3 and less than 1/2) of records missing;
many discrepancies are noted in records; frequent minor noncompliance
4 Approximately 25 - 33% (between 1/4 to 1/3) of records missing;
less frequent minor noncompliance
3 Approximately 10 - 24% (more than 1/10 and less than 1/4) of records missing;
minor noncompliance in paperwork
2 Approximately 5 - 9% (more than 1/20 and less than 1/10) of records missing or not
current, but paperwork present meets requirements
1 Approximately 1 - 4% of records missing and all paperwork present is current
and complies with all requirements

For the Critical Indicator Only

0 Balance or emphasis factor assigned to each protocol section or
chapter. Three 0s are added to the finding total, *for each section with an absence of 10, 9, and 8 scores*, as a reward.

Figure X
Southern Region Sector Environmental Compliance Managers (SECMs) POCs

ASO RPMS	Alan Stensland	(404) 763-7431
AFS (ARTCC) Atlanta	Dennis Anderson	(404) 946-7755
AFS (ARTCC) Jacksonville	Thomas Allen	(904) 632-1615
AFS (ARTCC) Memphis	Charlie Reed	(901) 365-0970
AFS (ARTCC) Miami	Angus (Buddy) Wall	(305) 592-9770 *371
AFS Atlanta	Mike Bell	(404) 763-7388
AFS Columbia	Jeff Alexander	(803) 765-5945
AFS Covington	Terry Johnson	(606) 262-3104
AFS Jacksonville	Mark Hookings	(904) 741-0292
AFS Memphis	Bob Bates	(901) 544-3435
AFS Miami	Eric Walter	(305) 526-2688
AFS Montgomery	Wyman McCall	(205) 223-7463
AFS Raleigh	Bruce Pease	(919) 840-5537
AFS Tampa	Jerry Denton	(813) 228-2571
AFS San Juan	Antonio Ramos	(809) 253-4551

Major Facility Types

AFS	Airway Facilities Sector Office
AFSPO	Airway Facilities Sector Field Office
AFSS	Airway Flight Service Station
ARTCC	Air Route Traffic Control Center
ARSR	Air Route Surveillance Radar
ASR	Airport Surveillance Radar
ATCT	Airport Traffic Control Tower
FMP	Field Maintenance Program
NAVAID	Navigation Aid (Glide Slope)
RCAG	Remote Center Air/Ground Communication Facility
RO	Regional Office
RTR	Remote Transmitter/Receiver
TDWR	Terminal Doppler Weather Radar
VOR	Very High Frequency Omnidirectional Range-Test
FSS	Old Flight Service Station

Equipment Type

Diesel Engine Generators (and Fuel)
Gasoline Engine Generators (and Fuel
Propane Engine Generators (and Fuel)
Aboveground Tanks
Belowground Tanks
Oil-filled Transformers (power)
Oil-filled Capacitors
CFC (Chlorofluorocarbons)
Oil Coolant Systems
Anti-freeze
Waste Oil Collectors
Welding Supplies
Wells
Cisterns - Septic Tanks - Wastewater Treatment
Paint

THE PROTOCOLS

FAA Facilities 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 FAA regulations/policies.

For the purpose of this manual, the term "facility" is defined as any buildings or sites that share the same cost center code.

After a review of these activities at FAA Facilities it is apparent that there are major categories of environmental compliance into which most environmental regulations and activities could be grouped. This manual is divided into 11 sections that correspond to major compliance categories.

1 Air Emissions Management
2 Cultural and Historic Resources Management
3 Hazardous Materials Management
4 Hazardous Waste Management
5 Natural Resource Management
6 Pesticide Management
7 Petroleum, Oil, and Lubricant (POL) Management
8 Solid Waste Management
9 Special Pollutants Management (includes asbestos, PCBs, radon, and noise)
10 Underground Storage Tanks (UST) Management
11 Water Quality 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 legislative 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 easily inserted.

D. FAA Regulations/Requirements

This section of the protocol identifies the relevant regulations, policies, or requirements associated with the compliance area that are promulgated by the FAA. Currently, FAA Orders are not included in this manual.

E. Key Compliance Requirements

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

F. Responsibility for Compliance

This section identifies and summarizes the individuals/organizations at an FAA Facility with responsibility for maintenance, operation, or environmental monitoring of activities associated with the compliance category.

G. Key Compliance Definitions

This section of each protocol presents definitions taken from the Code of Federal Regulations and FAA regulations for those key terms associated with each compliance category.

H. 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.

MANUAL FORMAT

The protocol portion of assessment manual is divided into two columns. The first of these is a statement of a requirement. This may be a strict regulatory requirement, in which case the citation is given, or it may be a requirement that is considered to be a good management practice to maintain compliance, but which is not specifically mandated by regulation.

The second column gives instructions to help conduct the compliance 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.

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 facilities can be included on the worksheets.

SUPPLEMENTAL INFORMATION

A "logic table" (Table 2) is located at the end of this section. It indicates the major environmental operations and activities at typical FAA Facilities and the protocols within which they are addressed. As shown, many activities and operations cause environmental impacts in more than one area, and are therefore addressed in more than one protocol.

A list of commonly used acronyms (Table 3) is also located at the end of this section. These acronyms are used within the manual and are commonly used in discussions in environmental compliance.

Any findings discovered through the use of this guidance manual by the internal assessment must be validated by the environmental coordinator and legal counsel.

Any change or suggestion for improving this guidance manual should be forwarded to Alan Stensland.

CONTACT/LOCATION CODES

Currently the only designated Point of Contacts are the Regional Environmental Coordinator and the Sector Environmental Coordinator.

Table 2

Major Activities / Operations at Facilities and Related Sections					
	SECTIONS				
Major Activities/ Operations	1 Air Emissions Mngmt.	2 Cultural & Historic Resources Mngmt.	3 Hazardous Materials Mngmt.	4 Hazardous Waste Mngmt.	5 Natural Resources Mngmt.
1. Incinerators	•			•	
2. Heat/Power Production	•				
3. Fuel Storage	•		•		
4. Sanitary Wastewater					
5. Stormwater Runoff					•
6. Sludge Disposal				•	
7. POL Dispensing	•				
8. Wastewater Treatment					
9. Vehicle Maintenance	•		•	•	
10. Solid Waste Generation	•		•		
11. Water Supply					
12. Toxic/hazardous Materials Use			•		
13. PCB Electrical Equipment					
14. Pesticide/ Herbicide Use			•		
15. Environmental Noise					
16. Emergency Planning					
17. Asbestos Removal					
18. Underground Storage Tanks					
19. Construction Activities					
20. Soil Removal					

Major Activities / Operations at Facilities and Related Sections				
	SECTIONS			
Major Activities/ Operations	6 Pesticide Mngmt.	7 POL Mngmt.	8 Solid Waste Mngmt.	9 Special Pollutants Mngmt.
1. Incinerators			•	
2. Heat/Power Production			•	
3. Fuel Storage		•		
4. Sanitary Wastewater				
5. Stormwater Runoff				
6. Sludge Disposal			•	
7. POL Dispensing		•		
8. Wastewater Treatment				
9. Vehicle Maintenance		•	•	
10. Solid Waste Generation			•	
11. Water Supply				
12. Toxic/hazardous Materials Use				
13. PCB Electrical Equipment				•
14. Pesticide/ Herbicide Use	•			
15. Environmental Noise				•
16. Emergency Planning				
17. Asbestos Removal				•
18. Underground Storage Tanks				
19. Construction Activities				
20. Soil Removal				

Major Activities / Operations at facilities and Related Sections		
SECTIONS		
Major Activities/ Operations	10 UST Mngmt.	11 Water Quality Mngmt.
1. Incinerators		
2. Heat/Power Production		
3. Fuel Storage	•	
4. Sanitary Wastewater		•
5. Stormwater Runoff		
6. Sludge Disposal		•
7. POL Dispensing	•	
8. Wastewater Treatment		•
9. Vehicle Maintenance	•	
10. Solid Waste Generation		
11. Water Supply		•
12. Toxic/hazardous Materials Use		
13. PCB Electrical Equipment		
14. Pesticide/ Herbicide Use		
15. Environmental Noise		
16. Emergency Planning		
17. Asbestos Removal		
18. Underground Storage Tanks	•	
19. Construction Activities		
20. Soil Removal		

TABLE 3

GLOSSARY OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
ACM	Asbestos Containing Material
AHERA	Asbestos Hazard Emergency Response Act
ANSI	American National Standards Institute
AQCR	Air Quality Control Regulations
ARPA	Archeological Resources Protection Act
ASME	American Society of Mechanical Engineers
ASTM	American Standards Test Manual
BAT	Best Available Technology
BOD	Biochemical Oxygen Demand
BPAT	Best Practically Available Treatment
Btu	British Thermal Units
C	Compliance
CAA	Clean Air Act
CELDS	Computer-Aided Environmental Legislative Data System
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CHEMTREC	Chemical Transportation Emergency Center
CO	Carbon Monoxide
COD	Chemical Oxygen Demand
CO_2	Carbon Dioxide
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DOT	Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPCRA	Emergency Planning & Community Right-to-Know Act
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act

GLOSSARY CONTINUED

FNSI	Finding of No Significant Impact
FWS	Fish and Wildlife Service
GMP	Good Management Practice
HCFC	Hydrogenated Chlorofluorocarbons
HCl	Hydrogen Chloride
HSWA	Hazardous and Solid Waste Amendment
ID	Identification
ISS	Interim Status Standards
LD	Lethal Dose
LDR	Land Disposal Restriction
MCL	Maximum Contaminant Level
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheets
MTR	Materials Testing Report
NA	Not Applicable
NAA	Non-Attainment Areas
NAAQS	National Ambient Air Quality Standards
NACE	National Association of Corrosion Engineers
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFPA	National Fire Prevention Association
NO_2	Nitrogen Dioxide
NPDES	National Pollutant Elimination System
NSPS	New Source Performance Standards
O&M	Operations and Management
OHSPC	Oil and Hazardous Substance Pollution Contingency (Plan)
OSHA	Occupational Safety and Health Act
O_2	Oxygen
PCB	Polychlorinated Biphenyl
PL	Public Law
POC	Point of Contact
POL	Petroleum, Oil, and Lubricants

GLOSSARY CONTINUED

POTW	Public Owned Treatment Works
PSD	Prevention of Significant Deterioration
PSIA	Pounds Per Square Inch Absolute
PSIG	Pounds Per Square Inch Gauge
PVC	Polyvinyl Chloride
RACT	Reasonably Available Control Technology
RCRA	Resource Conservation and Recovery Act
RMA	Requires Management Action
RQ	Reportable Quantity
RVP	Reid Vapor Pressure
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SPCC	Spill Prevention Control and Countermeasure (Plan)
SQG	Small Quantity Generator
THM	Trihalomethane
TSCA	Toxic Substances Control Act
TSD	Treatment, Storage, or Disposal (Facility)
TU	Turbidity Unit
UIC	Underground Injection Control (Plan)
USACERL	Construction Engineering Research Laboratory
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WQA	Water Quality Act

Section 1

Air Emissions Management

Section 1

AIR EMISSIONS MANAGEMENT

A. Applicability

This section includes regulations, responsibilities, and compliance requirements associated with air pollution emissions from equipment and vehicles at FAA facilities. The major sources of air pollution emissions include:

- Particulates, sulfur dioxide (SO_2), nitrogen oxide (NO_x), and carbon monoxide (CO) from fuel burning at steam and hot water generation plants and boilers.
- Particulates and toxic air emissions from the operation of hazardous waste and/or general waste incinerators.
- Particulates, carbon monoxide, metals, and toxic air pollutant emissions from open burning operations.
- The emission of volatile organic compound (VOC) vapors from the storage and transfer of certain petroleum fuels and chemicals (solvents), and the operation of degreasers and other processes (paint stripping and metal finishing) which use solvents.
- The emission of carbon monoxide from vehicles operated on the facility.
- Fugitive particulate emissions from training activities and construction/ demolition operations.

Most facilities have air emissions sources in one or more of these categories that is either regulated on the Federal or the state level. Therefore this section is applicable to some extent at all FAA facilities.

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 currently the effective, comprehensive Federal legislation regulating the prevention and control of air pollution.

The purposes of this Act are:

- to protect and enhance the quality of the nation's air resources so as to promote the public health and welfare and the productivity of its population
- to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution
- to provide technical and financial assistance to state and local governments regarding the development and execution of their air pollution prevention and control efforts
- to encourage and assist the development and operation of regional air pollution prevention and control programs (42 USC 7401(b))
- to achieve a substantial reduction in emission of hazardous air pollutants from area sources and an equivalent reduction in the public health risks associated with such sources including a reduction of not less than 75 per centum in the incidence of cancer attributable to emissions from such sources (42 USC 7412(k)(1))
- to reduce the adverse effects of acid deposition through reductions in annual emissions of sulfur dioxide of 10 million ton from 1980 emission levels, and of nitrogen oxides emissions of approximately 2 million tons from 1980 emission levels, in the 48 contiguous states and the District of Columbia; and to effectuate such reductions by requiring compliance by affected sources with prescribed emission limitations by specified deadlines, which limitations may be met through alternative methods of compliance provided by an emission allocation and transfer system. To encourage energy conservation, use of renewable and clean alternative technologies, and pollution prevention as a long-range strategy, consistent with the provisions of this Act, for reducing air pollution and other adverse impacts of energy production and use (42 USC 7651(b)).

A primary goal of this Act is to encourage or otherwise promote reasonable Federal, state, and local government actions for pollution prevention (42 USC 7401(c)). The prevention and control of air pollution at its source is the primary responsibility of states and local governments (42 USC 7401(a)(3)).

Unless specified otherwise, nothing in this Act precludes or denies the right of any state or political subdivision to adopt or enforce:

- any standard or limitation respecting emissions of air pollutants, or
- any requirement respecting control or abatement of air pollution.

However, if an emission standard or limitation is in effect under an applicable implementation plan or under section 7411 or 7412 of this Act, such state or political subdivision may not adopt or enforce any emission standard or limitation which is less stringent than the standard of limitation under such plan or section (42 USC 7416)).

Each department, agency, and instrument of the executive, legislative, and judicial branches of the Federal Government, and each officer, agent, or employee of such a unit, must comply with, all Federal, state, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of air pollution in the same manner, and to the same extent as any nongovernment entity. This applies to:

- any requirement whether substantive or procedural (including record-keeping, reporting, and emission)
- any requirement to pay a fee or charge imposed by any state or local agency to defray the costs of its air pollution regulatory program
- the exercise of any Federal, state, or local administrative authority, and
- any process and sanction, whether enforced in Federal, state, or local courts, or in any other manner (42 USC 7418(a)).

Each department, agency, or instrument of the Federal Government must not engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity which does not conform to an implementation plan after it has been approved or passed under this Act. Any Federal agency may not approve, accept or fund any transportation plan, program or project unless such plan, program or project has been found to conform to any applicable implementation plan in effect (42 USC 7506(c)(1)(2)).

C. State/Local Regulations

The primary mechanisms regulating air pollutant emissions are state regulations or air quality control region (AQCR) regulations. These regulations will normally follow the Federal guidelines 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, therefore, the individual AQCRs in that state have stringent VOC emission requirements. The state of 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 upon 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:

- fugitive dust emissions
- control of particulate emissions from the transportation of refuse or materials in open vehicles
- certification requirements for boiler operators
- emissions and emission control requirements for the operation of existing fossil fuel-fired steam generators
- open burning
- 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 fuel pumps.

D. FAA Regulations/Requirements

- None included at this time.

E. 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 several specific industrial facilities/operations for which NSPS have been developed. The standards are based on the size of the generator, incinerator, or tank. None of the generators, incinerators or tanks operating at FAA facilities are large enough to be regulated under these standards.

- Hazardous Air Pollutants - National Emissions Standards for Hazardous Air Pollutants (NESHAP) are based on health effects with strong reliance on technological capabilities. They apply to both existing and new stationary sources. The asbestos NESHAPs is likely to have the greatest impact on FAA activities. This NESHAP imposes controls on demolition, renovation and land disposal of asbestos containing materials. See Section 9, *Special Pollutants Management.*

  Additionally, the NESHAPs address the control of fugitive emissions of volatile hazardous air pollutants (VHAP) from sources such as compressors, flanges, pressure relief devices, and pumps. This includes fugitive emissions of benzene and vinyl chloride.

- Vehicular Emission Inspections - Many states require owners of fleet vehicles to have annual inspections of exhaust gases to determine emissions of CO and hydrocarbons.

- VOC Emissions Compliance - Most states regulate the emission of VOCs into the atmosphere. Typical facilities at that emit VOCs are fuel storage and dispensing facilities; organic solvent stripping, cleaning or degreasing, and surface coating operations. 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 are usually expressed in pounds (lb) of VOC/unit volume of substance used.

- Particulate Emission Compliance - Particulates emitted from fuel burning equipment and incinerators on FAA facilities 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 start-up and maintenance operations for short periods of time (5 minutes/hour (min/h)).

- Permits to Operate Air Contaminant Sources - FAA facilities 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.

- Sulfur Dioxide Emission Compliance - Sources burning fuel containing sulfur are typically limited to an allowable stack emission rate in pounds of sulfur dioxide/ million BTU heat input (lb/MBtu) 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.

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

These definitions were obtained from the Federal and FAA regulations listed previously.

- *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)).

- *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(c), (e), or (g) (82 CFR 152(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 kilograms (kg)) (82 CFR 152(d)).

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

- *Designated Volatility Attainment Area* - an area not designated as being in nonattainment with the National Ambient Air Quality Standard 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 any land or water
    2. the disassembly of any appliance for discharge, deposit, dumping or placing of its discarded component parts into or on any land or water
    3. the disassembly of an appliance for reuse of its component parts.

- *Federally Enforceable* - all limitations and conditions enforceable by the Administrator, including those requirements developed pursuant to 40 CFR Parts 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 60.41b).

- *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 60.41c).

- *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 51.301j).

- *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.

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

- *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)).

- *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.

- *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)).

- *MVAC-Like Appliance* - mechanical vapor compression, open-drive compressor appliances used to cool the driver's or passenger's 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)).

- *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).

- *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)).

- *Reclaim Refrigerant* - to reprocess refrigerant to at least the purity specified in the ARI Standard 700- 1988, Specifications for Fluorocarbon Refrigerants (appendix A to 40 CFR 82, subpart F) and to verify this purity using the analytical methodology prescribed in the ARI Standard 700-1988. In general, reclamation involves the use of processes or procedures available only at a reprocessing or manufacturing facility (82 CFR 152(q)).

- *Recover Refrigerant* - to remove refrigerant in any condition from an appliance without necessarily testing or processing it in any way (82 CFR 152(r)).

- *Recovery Efficiency* - the percentage of refrigerant in an appliance that is recovered by a piece of recycling or recovery equipment (82 CFR 152(s)).

- *Recycle Refrigerant* - to extract refrigerant from an appliance and clean refrigerant for reuse without meeting all of the requirements for reclamation. In general, recycled refrigerant is refrigerant that is cleaned using oil separation and single or multiple passes through devices, such as replaceable core filter-driers, which reduce moisture, acidity, and particulate matter. These procedures are usually implemented at the field job site (82 CFR 152(t)).

- *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 60.111a).

- *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.

- *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 60.111a).

- *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)).

- *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).

AIR EMISSIONS MANAGEMENT PROTOCOL

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:
All Facilities	1-1 through 1-4
Gasoline	1-5 through 1-9
CFCs and Halons	1-10 through 1-15
Refrigerants	1-16 through 1-29
Recordkeeping	1-30 and 1-31

AIR EMISSIONS MANAGEMENT

Records to Review

- State and local air pollution control regulations
- All air pollution source permits
- Plans and procedures applicable to air pollution control
- Emission monitoring records
- Opacity records
- Notifications of violations to regulatory authorities
- Instrument calibration and maintenance records
- Reports/complaints concerning air quality
- Air Emergency Episode Plan
- State and/or Federal regulatory inspections
- Regulatory inspection reports
- Documentation of preventive measure or action
- Results of air sampling at the conclusion of response action

Physical Features to Inspect

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

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
1-1. Determine actions or changes since previous review of air quality (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report.
...	...
1-2. Copies of all relevant Federal, FAA, state, and local regulations and guidance documents on air emissions should be available at the facility (GMP).	Verify that copies of the following regulations are available and kept current: - 40 CFR 80, *Regulation of Fuels and Fuel Additives.* - 40 CFR 82, *Protection of Stratospheric Ozone.* - appropriate state and local regulations.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-3. Facilities are required to abide by state and local air quality regulations (Clean Air Act, 42 U.S.C. 7418(a)).	Verify that the facility is abiding by state and local air quality requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (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 - 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.)
...	...
1-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning air quality have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
GASOLINE	
1-5. 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 personnel to determine what grades of gasoline are used, where they are dispensed, and what controls are in place to ensure proper fueling of vehicles.
...	...
1-6. Fuel pumps are required to display specific signs. (40 CFR 80.22(d) and 80.22(e)).	Inspect the facility gas stations to ensure that: - signs stating the only unleaded gas should be introduced into labeled vehicles 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."
...	...
1-7. Gasoline pumps dispensing oxygenated gasoline are required to meet specific labeling requirements (40 CFR 80.35).	Determine if the facility is located in an area with an oxygenated gasoline program with a minimum oxygen content per gallon (gal) or minimum oxygen content requirements in conjunction with a credit program. Verify that if the facility is located in such an area each gasoline pump dispensing oxygenated gasoline at a retail outlet has a label attached during the control period that states *The gasoline dispensed from this pump is oxygenated and will reduce carbon monoxide pollution from motor vehicles.* Verify that if the facility 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 Clean Air Act as part of a program to reduce carbon monoxide pollution from motor vehicles.* (NOTE: Consult with state and local authorities concerning control areas and control periods.)
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-8. 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)).	Verify that facilities are monitored as indicated: - 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. Verify that the standards outlined in Appendix 1-1 are met for any designated volatility nonattainment areas (see 40 CFR 81). (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 1-1 by 1 pound (lb).)
...	...
1-9. 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-anthraquinone 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.
...	...
CHLOROFLUORO-CARBONS AND HALONS	
1-10. In order to minimize atmospheric emissions of ozone-depleting substances, specific good management practices should be instituted at the facility (GMP).	Verify that ozone-depleting substances are procured only in the absence of suitable alternatives. Verify that there is no disposal of ozone-depleting substance by direct release to the atmosphere. Verify that ozone-depleting substances are recycled.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-11. In order to protect the ozone, no person repairing or servicing motor vehicles for payment can service an 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 facility services MVACs for payment. Verify that the individual who does the repair is certified and that the equipment being used is approved by the USEPA. 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. Verify that the facility keeps records of where the refrigerant is sent and personnel certification for 3 yr. (NOTE: These restrictions do not become effective until 1 January 1993 when fewer 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.)
...	...
1-12. As of 15 November 1992 no Class I or Class II substances suitable for use in motor vehicles as a refrigerant (see Appendix 1-2) 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 the facility carries any of the Class I or Class II substances listed in Appendix 1-2. Verify these substances are only sold or distributed to certified individual by reviewing records of sales. Verify that distribution and sales records for these substances are kept for 3 yr. (NOTE: Sales of these substances can be made to an uncertified individual if the purchaser is purchasing small containers for resale only.)
...	...
1-13. Facilities 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: - "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."
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-14. 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. (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.)
...	...
1-15. As of 1 January 2015 the use of Class II substances (see Appendix 1-2) 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: - 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.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS:**
REFRIGERANTS	
1-16. 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. Verify that Class I or II substances are not being vented to the atmosphere. (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.)
...	...
1-17. No person can open appliances other than 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 20 through 29) are met. Verify that equipment is used that is certified for the appliance in question.
...	...
1-18. 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.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-19. 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.
...	...
1-20. 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. (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.)
...	...
1-21. 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.
...	...
1-22. 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.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-23. When appliances other than small appliances, MVACs, and MVAC-like appliances 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.
...	...
1-24. When appliances other than small appliances, MVACs, 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 1-3 prior to opening the appliance unless one of the following is met: - 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 1-3 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: - evacuated to a pressure no higher than 0 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 1-3 are not possible because of leaks in the equipment or the refrigerant being recovered would be substantially contaminated, the person opening the appliance: - 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.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-25. Appliances, except for small appliances, MVACs and MVAC-like appliances, that are being disposed of must be evacuated to the levels in Appendix 1-3 (40 CFR 82.150 and 82.156(a)(3)).	Verify that appliances are evacuated to the levels listed in Appendix 1-3 prior to disposal.
...	...
1-26. 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. 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.
...	...
1-27. 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: - 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 statment 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.
...	...
1-28. 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. Verify that installations recovering refrigerant from small appliances for the purpose of disposal of the appliance does one of the following: - 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.
...	...

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
1-29. 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 month (mo) period. 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. (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.
...	...
Recordkeeping	
1-30. 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. Verify that records are retained for 3 yr.
...	...
1-31. Facilities at the installation servicing appliances normally containing 50 lb or more 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.

Appendix 1-1

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

Applicable Standards[1] 1992 and Beyond

State	May	June	July	Aug.	Sept.
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

State	May	June	July	Aug.	Sept.
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 1-2

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

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
All isomers of the above chemicals	
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.]

Controlled Substance	Ozone Depletion Weight
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 - 3

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 29.8 inches Hg)	
	Using recovery or recycling equipment manufactured or imported before 15 Nov 1993	Using recovery or recycling equipment manufactured or imported on or after 15 Nov 1993
HCFC-22 appliance, or isolated component of such appliance, normally containing less than 200 pounds (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: AIR EMISSIONS MANAGEMENT Federal Aviation Administration	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

Section 2

Cultural & Historic Resources Management

Section 2

CULTURAL & HISTORIC RESOURCES MANAGEMENT

A. Applicability

This section applies to any FAA facilities with cultural and historic resources. Plans and programs for protection and management of cultural resources which include historic and prehistoric properties are included in this section. Since FAA facilities are not curating any collections of historical items or artifacts, the Federal curation requirements are not included in this section.

B. Federal Regulations

There are many Federal statutes and regulations concerning the preservation of historic and prehistoric properties. The provisions of the following statutes and their implementing regulations outline a comprehensive assertion of national preservation policy and the means to reach the goal of that policy.

- *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 upon the lands owned or controlled by the Federal government to be national monuments (16 USC 431). Permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions may be granted by the Secretaries of the Interior, Agriculture, and Army to institutions which they may deem properly qualified to conduct such examination, excavation, or gathering, subject to such rules and regulations as they may prescribe (16 USC 432).

- *Historic Sites Act of 1935.* This Act, 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, and establishes a maximum fine of $500 for violations of the Act.

- *National Historic Preservation Act of 1966.* This Act, 16 USC 470-470w-6, last amended in August 1989, addresses the issue of preserving our national history. The Congress declares 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 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:

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
2. provide leadership in the preservation of the prehistoric and historic resources of the United States and of the international community of nations
3. 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
4. contribute to the preservation of nonfederally owned prehistoric and historic resources and give maximum encouragement to organizations and individuals undertaking preservation by private means
5. encourage the public and private preservation and utilization of all usable elements of the Nation's historic built environment, and
6. 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 (16 USC 470-1).

- *The National Environmental Policy Act (NEPA) of 1970.* This purpose of this Act, 42 USC 4321-4370c, as last amended in November 1990 was to to declare a national policy which will encourage productive and enjoyable harmony between man and his environment. Additional it provides for the promotion of efforts which will 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 is 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)).

- Executive Order 11593, *Protection and Enhancement of the Cultural Environment*, 13 May 1971. This Executive Order directs Federal agencies to provide leadership in preserving, restoring, and maintaining the historic and cultural environment of the Nation; to ensure the preservation of historic resources; to locate, inventory, and nominate to the National Register all properties under their control that meet the criteria for nomination; and to ensure that historic resources are not inadvertently damaged, destroyed, or transferred before the completion of inventories and evaluation for the National Register.

- *Archeological and Historic Preservation Act of 1974.* This Act, (PL 93-291 (amends PL 86-523); 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 archeological data. It also provides criteria for funding historical and archeological protection for such projects.

- *Public Buildings Cooperative Use Act of 1976.* This Act, 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 historic, 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 must request that, within 60 days, the Advisory Council on Historic Preservation identify any existing buildings within such geographical area that
  1. are of historic, architectural, or cultural significance and
  2. would be suitable, whether or not in need of repair, alternation, or addition, for acquisition or purchase to meet the public buildings needs of the Federal government (40 USC 611(c)).

- *American Indian Religious Freedom Act of 1978.* This Act, (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 the American Indian, Eskimo, Aleut, 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.

- *Archaeological Resources Protection Act of 1979.* This Act, 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 which 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 which were obtained before 19 October 1979 (16 USC 470aa(b)).

- *Native American Graves Protection and Repatriation Act of October 1990.* This Act, 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:
    1. such items are excavated or removed pursuant to a permit issued which must be consistent with this Act
    2. 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
    3. the ownership and right of control of the disposition of such items must be as provided in subsections (a) and (b) of this section
    4. proof of consultation or consent under paragraph (2) is shown (25 USC 3002(c)).

  Each Federal agency and museum which 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 which 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 Native American party designated, must expeditiously return the remains and associated funerary objects and other objects if:
    1. 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
    2. 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.

- *Abandoned Shipwreck Act of 1987.* This Act, PL 100-298, defines and clarifies access and ownership rights and directs the Director of the National Park Service to prepare guidelines, in consultation with appropriate public and private section interests, to administer and manage underwater resources.

C. State/Local Regulations

At the state level, the State Historic Preservation Officer (SHPO) provides assistance in determining cultural significance and eligibility for the National Register, but may also nominate properties, irrespective of ownership. The SHPO must be consulted during all cultural resources planning.

States may also issue regulations designating state historical sites.

D. FAA Regulations/Requirements

- None included at this time.

E. Key Compliance Requirements

- Historic Preservation - FAA facilities are required to protect, restore, and maintain cultural 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.

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

- *Advisory Council on Historic Preservation (Advisory Council)* - the Council established by Title II of the *National Historic Preservation Act* to advise the President and Congress, to encourage private and public interest in cultural preservation, and to comment on Federal agency action under Section 106 of the *National Historic Preservation Act* (36 CFR 65.3).

- *Archeological Resource* - any material remains of prehistoric or historic human life or activities. Such resources include, but are not limited to: pottery, basketry, bottles, weapons, weapon projectiles, tools, structures or portions of structures, pit houses, rock paintings, rock carvings, intaglios, graves, human skeletal materials, or any portion or piece of any of the foregoing items (16 USC 470bb).

- *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).

- *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).

- *Cultural Affiliation* - there is a relationship of shared group identity which 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 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 which, 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).

- *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 although the property is not formally listed in the National Register (36 CFR 60.3).

- *Effect* - direct effects are caused by the undertaking and occur at the place and time of the undertaking. Indirect effects are those caused by the undertaking that are later in time or further removed in distance, but are still reasonably foreseeable (50 CFR 1508.8).

- *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 Lands* - any land other than tribal lands which are controlled or owned by the United States, including lands 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).

- *Historic Property or Resource* - any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register; this term includes artifacts, records, and remains which are related to such a district, site, building, structure, or object (16 USC 470W).

- *Indian Lands* - all lands under the jurisdiction or control of an Indian tribe (36 CFR 800.2).

- *Indian Tribe* - any tribe, band, nation, or other organized group or community of Indians, including any Alaska Native village which is recognized as eligible for the special programs and services provided by the United States to the Indians because of their status as Indians (PL 101-601, Section 2).

- *Landmark* - a National Historic Landmark is a district, site, building, structure or object, in public or private ownership, judged by the Secretary of the Interior to possess national significance in American history, archeology, architecture, engineering, and culture, and is 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):
    1. components of structures and features (such as houses, mills, piers, fortifications, earthworks, and mounds)
    2. intact or fragmentary artifacts of human manufacture
    3. intact or fragmentary natural objects used by humans (such as rock crystals, feathers and pigments)
    4. byproducts, waste products, or debris resulting from manufacture or use of manmade or natural materials
    5. organic materials (such as vegetable and animal remains)
    6. human remains
    7. components of petroglyphs, pictographs, intaglios or other works of artistic or symbolic representation
    8. components of shipwrecks
    9. environmental and chronometric specimens
    10. paleontological specimens that are 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 receives 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, conducted by the Secretary through the National Park Service (36 CFR 65.3).

- *National Register of Historic Places (National Register)* - the listing of districts, sites, buildings, structures, and objects of national, state, or local significance in American history, architecture, archeology, 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 101-106, Section 2).

- *Native Hawaiian* - any individual who is a descendent of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the state of Hawaii (PL 101-106, Section 2).

- *Nominate* - to complete and submit National Register of Historic Places form proposing that a resource be included in the National register. Nominations can be made for individual resources, multiple resources, or thematic groups (36 CFR Part 60.4).

- *Preservation* - identification, evaluation, recording, 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 a collection of the above that forms a district (36 CFR 65.3).

- *Religious Remains* - materials 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).

- *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 Objects* - specific ceremonial objects which are needed by traditional Native American religious leaders for the practice of their traditional Native American religions by their present day 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, who is responsible for administering the Act within the state of jurisdiction, or a designated representative authorized to act for the State Historic Preservation Officer (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 101-106, 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)).

CULTURAL & HISTORIC RESOURCES MANAGEMENT

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:
All Facilities	2-1 through 2-8
Documentation	2-9
Native American Graves Protection	2-10

CULTURAL & HISTORIC RESOURCES MANAGEMENT

Records to Review

- For construction activities: documentation of finding of no adverse effect, finding of adverse effect, or Memorandum of Agreement with the SHPO or requests for comment when there is no agreement on historic properties.
- Environmental Assessments
- Environmental Impact Documentation
- Grounds Maintenance Contracts
- Historic Preservation Plan

Physical Features to Inspect

- Sites of historic, archeological, or Native American interest (designation, protection, and interpretation)
- Buildings and structures of potential historical significance (National, state, or local)

AD-A272 283 ENVIRONMENTAL COMPLIANCE ASSESSMENT PROTOCOL - FEDERAL AVIATION ADMINISTRATION (ECAP - FAA)(U) CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN IL

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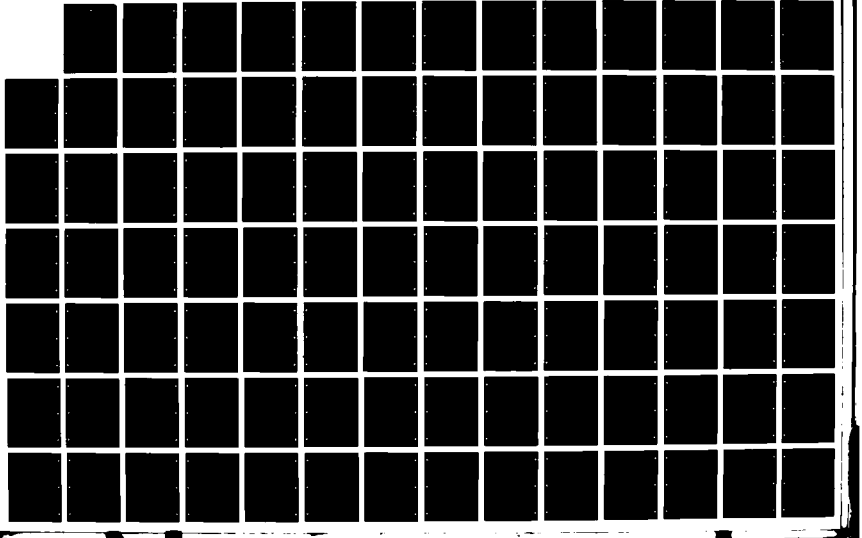

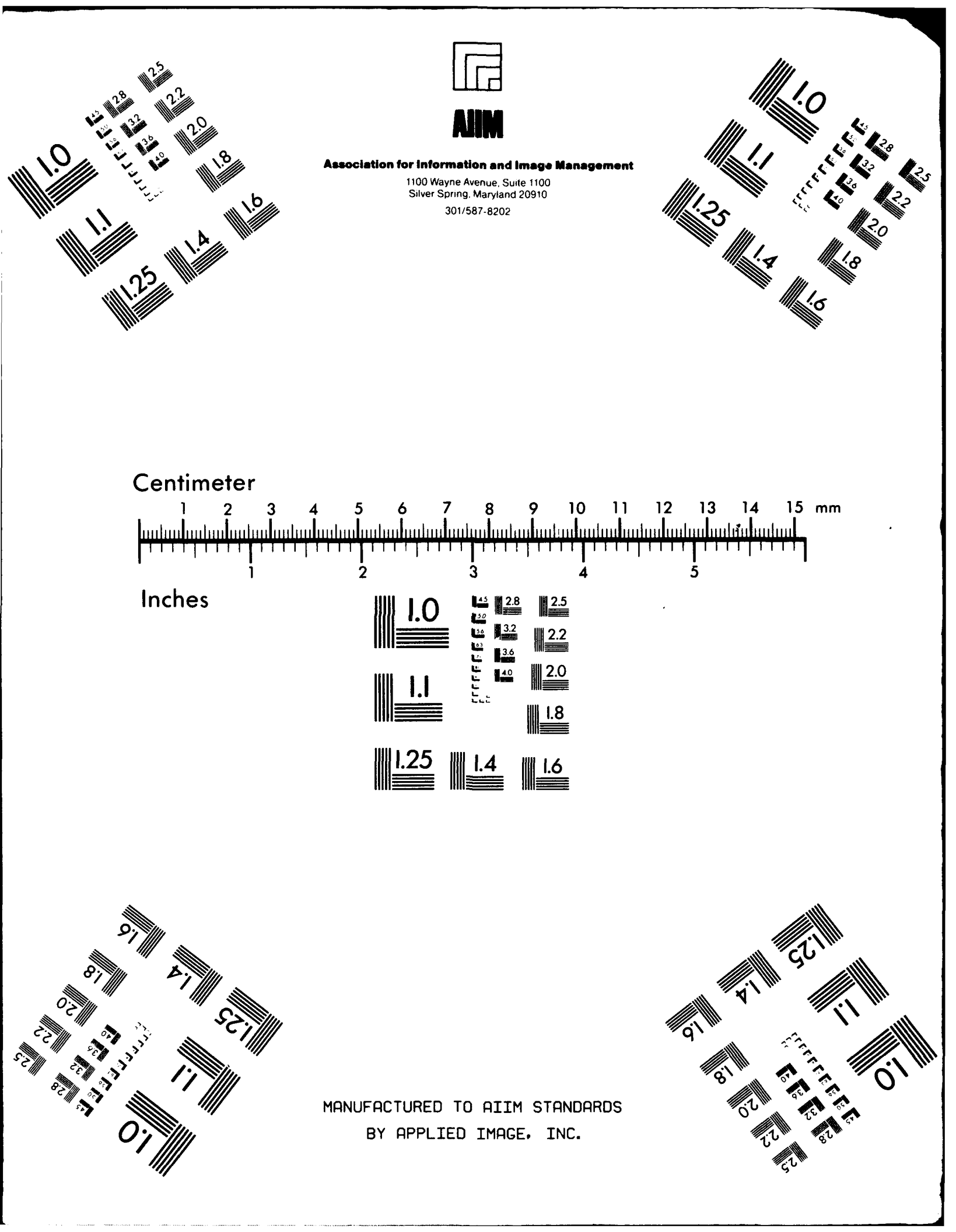
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COMPLIANCE CATEGORY: CULTURAL & HISTORIC RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
2-1. Determine actions or changes since previous review of cultural resources (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report.
...	...
2-2. Copies of all relevant Federal, FAA, state, and local regulations and guidance documents on cultural resources management should be available at the facility (GMP).	Verify that copies of the following regulations are available and kept current: - 25 CFR 261, *Preservation of Antiquities.* - 32 CFR 229, *Protection of Archeological Resources: Uniform Regulations.* - 36 CFR 60, *National Register of Historic Places.* - 36 CFR 62, *National Landmarks Program.* - 36 CFR 63, *Determinations of Eligibility for Inclusion in the National Register of Historic Places.* - 36 CFR 65, *National Historic Landmarks Program.* - 36 CFR 296, *Protection of Archeological Resources: Uniform Regulations.* - 36 CFR 800, *Protection of Historic and Cultural Properties.* - 43 CFR 3, *Preservation of American Antiquities.* - 43 CFR 7, *Protection of Archeological Resources.* - State and local regulations.
...	...
2-3. Facilities should abide by state and local regulations (GMP).	Verify that the facility is abiding by state and local requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (NOTE: Issues typically regulated by state and local agencies include: - designation of historic sites - protection of historic sites.)
...	...

COMPLIANCE CATEGORY: CULTURAL & HISTORIC RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning cultural resources have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...
2-5. All Federal Agencies are required to establish a program to locate, inventory, and nominate to the Secretary of the Interior all properties under the agency's ownership or control that appear to qualify for inclusion on the National Register of Historic Places (36 CFR 60.9).	Determine if the facility has a program to locate, inventory and nominate properties that includes the following: - assignment of responsibility for recognizing and maintaining cultural resources - an inventory and evaluation of all known historic resources - identification of the likelihood (based on scientific study) of the presence of other significant cultural resources - description of the facility's strategies for maintaining cultural resources and the methods used for compliance with this regulation - clear identification of the impacts on historic resources of ongoing projects and the resolutions to those impacts. Determine if the SHPO is given the opportunity to review and comment on all aspects of the program. Verify that all known historic resources have been nominated.
...	...

COMPLIANCE CATEGORY: CULTURAL & HISTORIC RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

2-6. Archaeological resources located on public lands or Indian lands cannot be excavated, removed, damaged, or otherwise altered, defaced without a permit (32 CFR 229.4(a), 229.5(b), and 229.18).	Determine if there is currently any excavation, removal, or disturbing of archaeological resources on the facility.
	
	Verify that any actions taken in relationship to archaeological resources have been permitted.
	
	Verify that the facility is following the parameters of the permit.
	
	(NOTE: A permit is not required in the following circumstances:
	- for activities being conducted on public lands under other permits, leases, licenses, or entitlements for use when those activities are exclusively for activities other than excavation and/or removal of archaeological resources even if those activities might disturb the archaeological resources
	- for the collection for private purposes any rock, coin, bullet, or mineral which is not an archaeological resource if the collection of the item does not result in the disturbance of an archaeological resource
	- excavations done by an Indian tribe or member of an Indian tribe on the lands of that tribe.)
	
	(NOTE: Federal land managers will not make information about the nature and location of any archeological resources except under the following circumstances:
	- the disclosure furthers the purposes of the *National Historic Preservation Act* without risking harm to the archeological resource or the site at which it is located
	- when the Governor of any State submits a request for the information if the request includes:
	  - the specific archeological resource or area about which information is sought
	  - the reason the information is requested
	  - the Governor's written commitment to adequately protect the confidentiality of the information.)

...	...
2-7. Prior to the start of a new undertaking, facilities are required to take into account the effects of the undertaking on property included in or eligible for the National Register of Historic Places (36 CFR 800.1).	Verify that prior to the start of a new undertaking, the impact of that undertaking on property included in or eligible for the National Register of Historic places has been investigated through the Section 106 process of consultation and documentation. Verify that the facility determines the area of potential effect for every undertaking. Determine if a MOA (Memorandum of Agreement) has been drafted and review a copy for compliance.
...	...

COMPLIANCE CATEGORY: CULTURAL & HISTORIC RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-8. The facility is required to consult with the State Historic Preservation Officer during the identification, location, and evaluation of historic properties and in assessing the effect of any undertaking on historic property (36 CFR 800.4 and 800.5).	Determine if the SHPO and staff have been consulted during all cultural resources planning including: - identification of cultural properties - research design - applying criteria of National Register - requesting a determination of eligibility from the Keeper (Chief of Registration) of the National Register when an agency and a SHPO disagree on eligibility - interaction with Advisory council on Historic Preservation (ACHP) - determination-of-effect in a single property compliance procedure.
...	...
DOCUMENTATION	

2-9. Facilities with historic properties should have a Historic Properties Management Plan (GMP).	Determine if the facility has any historic properties.
	
	Verify that the Historic Properties Management Plan has been or is being prepared with the following components:
	
	- overview
	- initial inventory
	  - identification of documented properties
	  - establishment of historic context
	  - identification of missing data
	- inventory process to locate missing data
	  - missing data goals
	  - field survey methods
	  - prioritizing investigation topics
	- protection strategies.

...	...

COMPLIANCE CATEGORY: CULTURAL & HISTORIC RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
NATIVE AMERICAN GRAVES PROTECTION **2-10.** Native American graves and artifacts are protected under Federal law. Facilities are required to take measures to identify them, protect them, and cooperate with Native American groups in returning them to their rightful owners (Native American Graves Protection and Repatriation Act of 1990 [PL 101-601]; Section 3(d), Section 5, and Section 6).	Verify that if Native American human remains, funerary objects, or other cultural items are discovered at the facility, that the notification proceeds through the appropriate command channels, and the appropriate Indian tribe, Native Hawaiian organization, or Alaskan Native Corporation or group is notified. Verify that if the discovery is the result of an activity such as construction, mining, logging, or agriculture, the activity is stopped and a reasonable effort is made to protect the item discovered. (NOTE: The activity may resume 30 days after receipt of certification that notification has been received.) Verify that if the facility museum has possession or control over holdings or collections of Native American human remains and associated funerary objects, an inventory of such items is being prepared that: - includes information on the geographical origin and cultural information of the items - is completed in consultation with tribal government and Native Hawaiian organization officials and traditional religious leaders - is scheduled for completion no later than 16 November 1995 - is made available for review at all times and stages of completion to the reviewing Committee established by the Secretary of the Interior. Verify that the facility museum supplies, upon request by an Indian tribe or Native Hawaiian organization, additional available documentation in the form of a summary of existing museum records, including inventories and catalogues, for the limited purpose of determining the geographical origin, cultural affiliation, and basic facts surrounding acquisition and accession of Native American or Native Hawaiian human remains and associated funerary objects. Verify that if a determination of cultural affiliation of any particular Native American human remains or associated funerary objects is made, that the affected Native American group is notified within 6 months of the completion of the inventory and a copy of the notice is sent to the Secretary of the Interior. Each notice shall contain information that: - identifies each Native American human remains or associated funerary objects and the circumstances surrounding its acquisition - lists the human remains or associated funerary objects that are clearly identifiable as to tribal origin - lists the Native American human remains and associated funerary objects that are not clearly identifiable as to cultural affiliation, but which are likely to be affiliated with that Indian tribe or Native Hawaiian organization.

COMPLIANCE CATEGORY: CULTURAL & HISTORIC RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
2-10. (continued)	Determine if facility museum has possession or control over unassociated funerary objects, sacred objects, or objects of cultural patrimony. If so, confirm that a written summary of such objects is prepared which contains: - a description of the scope of the collection - kinds of objects included in the collection - reference to geographical origin of the objects - description of the means and time period of acquisition - cultural affiliation of the object. Verify that completion of the summary is scheduled for no later than 16 November 1993, and is followed by consultation with tribal officials and traditional religious leaders.
...	...

INSTALLATION:	COMPLIANCE CATEGORY: CULTURAL & HISTORIC RESOURCES MANAGEMENT Federal Aviation Administration	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

Section 3

Hazardous Materials Management

Section 3

HAZARDOUS MATERIALS MANAGEMENT

A. Applicability

This section primarily addresses the proper storage and handling of chemicals and the spill contingency and response requirements related to hazardous materials. Oil, pesticides and asbestos are hazardous materials which require special management practices at FAA facilities, and are addressed in separate sections. Radioactive substances and the general category of hazardous wastes are also not included in this section. This section does not focus on individual hazardous chemicals or substances used, but deals with the generic requirements and good management practices associated with minimizing impacts on the environment due to spills or releases of hazardous materials because of improper storage and handling.

All underground storage tank regulations that apply to Hazardous Materials have been consolidated into Section 10, *Underground Storage Tank (UST) Management.*

B. Federal Legislation

- *The Occupational Safety and Health Act of 1970.* This Act, last amended in November 1990, 29 U.S. Code (USC) 651-678, is a Federal statute which governs the issues related to occupational safety and health. The purpose and policy of this Act are to assure every working man and woman in the nation safe and healthful working condition and to preserve our human resources by, among other things, providing for the development and publication of occupational safety and health standards, providing for an effective enforcement program which must include a prohibition against giving advance notice of any inspection and sanctions for any individual violating this prohibition, and providing for appropriate reporting procedures with respect to occupational safety and health which procedures will help achieve the objectives of this Act and accurately describe the nature of the occupational safety and health (29 USC 651(b)(9)(10)(12)).

- *The Hazardous Materials Transportation Act of 1975.* This Act, as last amended in November 1990, 49 U C 1801-1819, et al, is the Federal legislation which governs the transportation of hazardous materials in the nation. The policy of Congress is to improve the regulatory and enforcement authority of the Secretary of Transportation to protect the Nation adequately against the risks to life and property which are inherent in the transportation of hazardous materials in commerce (49 USC 1801).

- *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 USC 9601-11050, 10 USC 2701-2810, et al, CERCLA/SARA regulates the prevention, control, and compensation relating to environmental pollution.

- *The Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA).* 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 community. EPCRA requires the use of emergency planning and designates state and local governments as recipients for information regarding chemicals and toxins used in the community.

- The National Fire Code, *Flammable and Combustible Liquids Code NFPA 30*, prohibits the storage of Class I and Class II liquids in plastic containers in general-purpose warehousing.

C. State/Local Regulations

Hazardous materials may be regulated on the state level as well as local agencies (county/city fire departments) who may require flammable/combustible materials to meet certain storage 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. FAA Regulations/Requirements

None available at this time.

E. Key Compliance Requirements

- Hazardous Substance Release Reporting - Persons in charge of FAA facilities are required to notify 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, water or onto the land as stipulated in 40 CFR 302.

- Hazardous Materials Transportation - Facilities which ship hazardous materials offsite must comply with regulations regarding packaging, labeling and spill response. Depending on the type of hazardous materials transportation activity at the facility, certain sections of 49 CFR 171-173 will apply.

- Storage and Handling of Hazardous Materials - Facilities that store or handle hazardous materials, such as flammable/combustible materials, acids, caustics, compressed gases, oxidizers, etc., are required to comply with facility storage found in 29 CFR 1910.

- Community Right-to-Know - Facilities which use or manufacture hazardous or toxic chemicals will conform with substantive requirements of EPCRA, participate in local Emergency Planning Committees, and provide emergency notification upon release of substances regulated by the Act.

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

These definitions were obtained from the regulations previously cited in this section.

- *Aerosol* - a material which is dispensed from its container as a mist, spray, or foam by a propellant under pressure (29 CFR 1910.106(a)(1)).

- *Approved* - listed or approved by Underwriter's Laboratories, Inc., Factory Mutual Engineering Corporation, The Bureau of Mines, National Institute of Occupational Safety and Health, The American National Standards Institute, The National Fire Protection Association, or other nationally recognized agencies which list, approve, test or develop specifications for equipment to meet fire protection, health or safety requirements (29 CFR 1910.106(a)(35)).

- *Atmospheric Tank* - a storage tank which has been designed to operate at pressures from atmospheric through 0.5 psig (29 CFR 1910.106(a)(2)).

- *Automotive Service Station* - that portion of property where flammable of combustible liquids used as motor fuels are stored and dispensed from fixed equipment into the fuel tanks of motor vehicles and shall include any facilities available for the sale and service of tire, batteries, and accessories, and for minor automotive maintenance work, Major automotive repairs, painting, body and fender work are excluded (29 CFR 1910.106(a)(3)).

- *Barrel* - a volume of 42 U.S. gallons (29 CFR 1910.106(a)(33)).

- *Basement* - a story of a building or structure having one-half or more of its height below ground level and to which access for fire fighting purposes is unduly restricted (29 CFR 1910.106(a)(4)).

- *Boiling Point* - the temperature at which a liquid starts to boil when at atmospheric pressure (14.7 pounds per square inch absolute (psia), as determined by ASTM test D-86-72) (29 CFR 1910.106(a)(5)).

- *Bulk Plant* - that portion of the property where flammable or combustible liquids are received by tank vessel, pipelines, tank car, or tank vehicle, and are stored or blended in bulk for the purpose of distributing such liquids by tank vessel pipeline, car, tank vehicle, or container (29 CFR 1910.106(a)(7)).

- *Closed Container* - a container so sealed with a lid or other closing device that neither liquid and/or vapor will escape from it at ordinary temperatures (29 CFR 1910.106(a)(9)).

- *Combustible Liquid* - a liquid having a flashpoint at or above 100° F (37.8° C). Combustible liquids are categorized as Class II or Class III liquids and are further subdivided as follows (29 CFR 1910.106(a)(18)):
  1. Class II liquids have a flashpoint at or above 100 °F (37.8 °C), and below 140 °F (60 °C) except any mixture having components with flashpoints of 200 °F (93.3 °C) or higher, the volume of which makes up 99 percent or more of the total volume of the mixture.
  2. Class III A liquids have flashpoints at or above 140 °F (60 °C), and below 200 °F (93.4 °C) except any mixture having components with flashpoints of 200 °F or higher, the total volume of which make up 99 percent of more of the total volume of the mixture.
  3. Class III B liquids have flashpoints at or above 200 °F (93.4 °C).

- *Fire Area* - that portion of a building separated from the remainder by construction having a rated fire resistance of at least one hour (h) and having all communicating openings properly protected by an assembly having a fire resistance rating of at least 2 h (29 CFR 1910.106(a)(12)).

- *Flammable Aerosol* - an aerosol that is required to be labeled FLAMMABLE under the Federal Hazardous Substance Labeling Act (15 USC 1261). These aerosols are considered Class IA liquids (29 CFR 1910.106(a)(19)).

- *Flammable Liquid* - a liquid with a flashpoint below 100 ^{o}F (37.8 ^{o}C) except any mixture having components with flashpoints of 100 ^{o}F or higher, the total of which make up 99 percent or more of the total volume of the mixture. Flammable liquids are categorized as Class 1 liquids, and are further subdivided as follows (29 CFR 1910.106(a)(19)):
  1. Class 1A liquids have a flashpoint below 73 ^{o}F (22.8 ^{o}C) and a boiling point below 100 ^{o}F (37.8^{o} C).
  2. Class 1B liquids have flashpoints below 73 ^{o}F (22.8 ^{o}C) and boiling points at or above 100 ^{o}F (37.8 ^{o}C).
  3. Class 1C liquids have flashpoints at or above 73 ^{o}F (22.8 ^{o}C) and below 100 ^{o}F (37.8 ^{o}C).

- *Flashpoint* - the minimum temperature at which a liquid gives off vapor in sufficient concentration to form an ignitable mixture with air near the surface of the liquid. Flashpoints are established using several standard closed cup test methods (29 CFR 1910.106(a)(14)).

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

- *Liquid* - any material with a fluidity greater than that of 300 penetration asphalt when tested in accordance with ASTM Test D-5-73. When not otherwise identified, the term "liquid" will include both flammable and combustible liquid (29 CFR 1910.106(a)(17)).

- *Low Pressure Tank* - a storage tank which has been designed to operate at pressures above 0.5 psig but not more than 25 psig (29 CFR 1910.106(a)(21)).

- *Material Safety Data Sheet (MSDS)* - written or printed material which contains information on hazardous chemicals such as common name, physical hazards, health hazards (29 CFR 1200(c)).

- *Office Occupancy* - the occupancy or use of a building or structure or any portion thereof for the transaction of business, or the rendering or receiving of professional services (29 CFR 1910.106(a)(24)).

- *Portable Tank* - a closed container having a liquid capacity over 60 gal and not intended for fixed installation (29 CFR 1910.106(a)(25)).

- *Pressure Vessel* - a storage tank or container designed to operate at pressures above 15 psig (29 CFR 1910.106(a)(29)).

- *Protection for Exposure* - adequate fire protection for structures on property adjacent to tanks, where there are employees of the establishment (29 CFR 1910.106(a)(27)).

- *Safety Can* - an approved flammable liquid container having a spring-closing lid, spout cover and other features designed to safely relieve internal pressure and to provide safe storage for the liquid (29 CFR 1910.106(a)(29)).

- *Select Carcinogens* - any substance which meets one of the following criteria:
  - It is regulated by OSHA as a carcinogen.
  - It is listed under the category "known to be carcinogens" and the Annual Report on Carcinogens published by the National Toxicology Program (NTP).
  - It is listed under Group 1 (carcinogenic to humans) by the International Agency for Research on Cancer Monographs (IARC).
  - It is listed in either Group 2A or 2B by IARC or under the category "reasonably anticipated to be carcinogens" by NTP, and causes statistically significant tumor incidences in experimental animals under specific situations (29 CFR 1910.1450(b)).

- *Vapor Pressure* - the pressure, measured in psia exerted by a volatile liquid (29 CFR 1910.106(a)(30)).

HAZARDOUS MATERIALS MANAGEMENT PROTOCOL

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:
All Facilities	3-1 through 3-10
Personnel Training	3-11 and 3-12
Releases	3-13 through 3-16
Emergency Planning	3-17
Right-to-Know	3-18
Flammables/Combustibles Storage	
General	3-19 through 3-27
Industrial Areas	3-28 through 3-30
Tanks	3-31 through 3-35
Compressed Gas Storage	3-36 and 3-37
Acid Storage	3-38
Transportation	3-39

HAZARDOUS MATERIALS MANAGEMENT

Records to Review

- Hazardous Substance Spill Control and Contingency Plan
- Spill records
- Emergency plan documents
- Material Safety Data Sheets
- Inventory records
- Hazardous substance release reports
- Shipping papers
- Training records
- Placarding of hazardous materials

Physical Features to Inspect

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

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
3-1. Determine actions or changes since previous review of hazardous materials (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report.
...	...
3-2. Copies of all relevant Federal, FAA, state, and local regulations and guidance documents on hazardous materials should be available at the facility (GMP).	Verify that copies of the following regulations are available and kept current: - Executive Order (EO) 12088, *Federal Compliance With Pollution Control Standards.* - 29 CFR 1910, *Occupational Safety and Health Standards.* - 40 CFR 300, *National Oil and Hazardous Substances Pollution Contingency Plan.* - 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.* - NFPA, *Fire Protection Guide of Hazardous Materials.*
...	...
3-3. Facilities are required to abide by state and local regulations (EO 12088, Section 1-1).	Verify that the facility is abiding by state and local requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (NOTE: Issues typically regulated by state and local agencies include: - transportation of hazardous materials - notification requirements - response plan requirements - spill response requirements.)
...	...
3-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning hazardous materials have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT **Federal Aviation Administration**	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-5. A master listing of all hazardous materials storage sites should be maintained at the facility (GMP).	Determine the locations of all hazardous materials storage areas on the facility by interviewing staff. (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 *Hazardous Waste Management.*)
...	...
3-6. Hazardous materials storage sites should be inspected by Safety Officer (GMP).	Determine if the safety officer inspects hazardous material storage sites and which sites are inspected. Verify that corrective actions have been made when needed as noted in the safety inspection records.
...	...
3-7. Specific persons should be designated responsible for hazardous materials storage areas, and the precise nature of their responsibilities should be specified (GMP).	Verify that specific individuals have been designated responsible for hazardous materials storage areas. Verify that the individuals designated responsible for hazardous materials storage areas are aware of the precise nature of their responsibilities.
...	...
3-8. Facilities should coordinate with the local fire department concerning the types of hazardous chemicals used at the facility, the areas where they are used, what they are used for, and the quantities which are used in a given operation (GMP).	Determine if the facility has coordinated efforts with the local fire department. Determine if the department is aware of areas that are at high risk for chemical incidents.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS:**
3-9. Facilities are required to have on file a Material Safety Data Sheet (MSDS) for each hazardous chemical stored and used at the facility (29 CFR 1910.1200(b)93)(ii), 1910.1200(b)(4)(ii), 1910.1200(b)(6), 1910.1200(g)(1), and 1910.1200(g)(8)).	Verify that an MSDS is on file and readily accessible to workers on all shifts in the workplace for each hazardous material stored or used. (NOTE: These requirements do not apply to: - hazardous waste - tobacco or tobacco products - wood or wood products - articles - food, drugs, cosmetics intended for personal consumption by employees while in the workplace - any consumer product or hazardous substance as defined in the *Consumer Product Safety Act* and the *Federal Hazardous Substances Act* where the facility can demonstrate that it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater then exposure experienced by consumers.) (NOTE: This requirement applies to laboratories. It also applies to work operations where employees only handle chemicals in sealed containers which are not opened under normal conditions of use.)
...	...
3-10. Containers of hazardous chemicals in the workplace are required to be labeled, tagged, or marked with specific information (29 CFR 1910.1200(b)(3)(i), 1910.1200(b)(4)(i), 1910.1200(b)(5), and 1910.1200(f)(5) through 1910.1200(f)(7)).	Verify that all containers of hazardous chemicals in the workplace are labeled with the following information: - identity of the hazardous chemical - appropriate hazard warnings. (NOTE: The facility may use signs, placards, process sheets, batch tickets, operating procedures or other written materials instead of attached labels to individual stationary process containers as long as the alternate method identifies the containers to which it is applicable.) (NOTE: Portable containers into which hazardous chemicals are transferred from labeled containers and which are intended only for the immediate use of the employee who performs the transfer are not required to be marked.) (NOTE: These requirements do not apply to: - any pesticide as such term is defined in FIFRA, when subject to the labeling requirements of that Act and regulations issued under that Act - any food, food additive, color additive, drug, cosmetic, or medical or veterinary device as defined in the *Federal Food, Drug, and Cosmetic Act* - any consumer product or hazardous substance as defined in the *Consumer Product Safety Act* and the *Federal Hazardous Substances Act* when subject to a consumer product safety standard or labeling requirement under those Acts.) (NOTE: This requirement also applies to laboratories. It also applies to work operations where employees only handle chemicals in sealed containers which are not opened under normal conditions.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

PERSONNEL TRAINING
 	
3-11. Facilities are required to provide all employees with information about the hazardous chemicals to which they are exposed (29 CFR 1910.1200(b)(6) and 1910.1200(e)(1)).
 	
...
	Verify that there is a written hazard communication program that contains the following:
	
	- a list of the hazardous chemicals known to be present (can be done for the entire workplace or individual work areas)
	- the methods the facility will use to inform the employees of the hazards associated with nonroutine tasks and the hazards associated with chemicals contained in unlabeled pipes in their work areas
	- the methods the facility will use to ensure that each container of hazardous chemicals in the workplace is labeled, tagged, or marked with the following:
	  - identity of the hazardous chemicals contained
	  - appropriate hazard warning
	- details of employee training.
	
	(NOTE: These requirements do not apply to:
	- hazardous waste
	- tobacco or tobacco products
	- wood or wood products
	- articles
	- food, drugs, cosmetics intended for personal consumption by employees while in the workplace
	- any consumer product or hazardous substance as defined in the *Consumer Product Safety Act* and the *Federal Hazardous Substances Act* where the facility can demonstrate that it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater then exposure experienced by consumers.)
	
	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT **Federal Aviation Administration**	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS:**
3-12. Personnel working with hazardous materials are required to be trained in their use and hazards (29 CFR 1910.1200 (b)(3)(iii), 1910.1200(b)(4)(iii), 1910.1200(b)(6), and 1910.1200(h)).	Verify that employees are provided with information and trained on hazardous chemicals in their workplace at the time of initial assignment and whenever a new hazard is introduced into the workplace. Verify that employees are informed of the following: - any operations in their work areas where hazardous chemicals are present - the location and availability of the written hazard communication program, including the required lists of hazardous chemicals, and MSDSs. Verify that training includes: - methods and observations to use to detect a release - the physical and health hazards of the chemicals in the work areas - protective measures and procedures to use - an explanation of the labeling system, material safety data sheets, and how employees can obtain and use the appropriate hazard information. (NOTE: These requirements do not apply to: - hazardous waste - tobacco or tobacco products - wood or wood products - articles - food, drugs, cosmetics intended for personal consumption by employees while in the workplace - any consumer product or hazardous substance as defined in the *Consumer Product Safety Act* and the *Federal Hazardous Substances Act* where the facility can demonstrate that it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater then exposure experienced by consumers.) (NOTE: These requirements also apply to laboratories. They also apply, as necessary for protection in event of a spill or leak, to work operations where employees only handle chemicals in sealed containers which are not opened under normal conditions of use.)
...	...
RELEASES	
3-13. Absorbant materials should be available for spill and/or release cleanup in areas where hazardous materials are used or stored (GMP).	Verify that absorbant materials are available for spill cleanup.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-14. Releases in excess or equal to reportable quantities of hazardous substances shall be reported to the National Response Center immediately (40 CFR 302.1 through 302.6).	Verify that spills in excess of the reportable quantities listed in Appendix 3-1 have been reported. Verify that a procedure is in place for the notification of the National Response Center immediately after becoming aware of the release. Verify that if mixtures or solutions of hazardous substances are released, except for radionuclides, it is reported when: - 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, or - 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.)
...	...

3-15. Facilities 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 facility has any releases that are continuous and stable in quantity and rate.
	
	Verify that the following notifications have been given:
	
	- 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 h period that represents a statistically significant increase.
	
	(NOTE: Instead of the initial written report or follow-up report, the facility 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).)

...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

3-16. Facilities where an extremely hazardous chemical is produced, used or stored 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 reportable quantity or greater of an extremely hazardous substance or a CERCLA hazardous substance.
	
	(NOTE: Check Appendix 3-1 for a listing of extremely hazardous substances and look up the reportable quantities for those substances in Appendix 3-1.)
	
	Verify that a procedure is in place to provide a written follow-up emergency notification as soon as practicable after the release.
	
	(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 statistically significant increase
	  - notification of a new release
	  - notification of any change in the normal range
	- any release of a pesticide exempt by CERCLA
	- any release meeting the definition of release under CERCLA.)

...	...
EMERGENCY PLANNING	
3-17. Facilities where there are extremely hazardous substances present in amounts equal to or greater than the threshold limits found in Appendix 3-1 are required to follow specific emergency planning procedures (40 CFR 355.10 through 355.30, and Part 355 Appendix A).	Determine if the facility has any of the items listed in Appendix 3-1 in amounts equal to or greater than those listed in Appendix 3-1. Verify that the facility has notified the state emergency response commission, or Governor if there is not emergency response commission, that the facility is subject to emergency planning requirements within 60 days after the facility first becomes subject to these requirements. Verify that a representative has been designated to participate in local emergency planning process as the facility emergency response coordinator. 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. Verify that a procedure is in place to notify the local emergency planning committee of changes at the facility that are relevant to emergency planning.

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
RIGHT-TO-KNOW **3-18.** Facilities which are required to prepare or have available an MSDS for a hazardous chemical under OSHA are required to meet specific reporting requirements (40 CFR 370.20 through 370.28).	Verify that MSDSs 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: - for all hazardous chemicals present at the facility at any one time in amounts equal to or greater than 10,000 pounds (lb) - for all extremely hazardous substances present at the facility in amounts greater than or equal to 500 lb or the threshold planning quantity (See Appendix 3-1). Verify that the facility submitted MSDSs on or before 17 October 1990 (or within 3 months (mo) after the facility has become subject to these requirements), for all hazardous chemicals and extremely hazardous substances. Determine if instead of submitting MSDSs the following has been submitted: - 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 MSDSs are provided within 3 mo after the discovery of significant new information concerning the hazardous chemical. Verify that a Tier I or Tier II form has been submitted on or before 1 March 1990 (or 1 arch 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: - all hazardous chemicals present at the facility at any one time in amounts equal to or greater than 10,000 lb (4540 kg) during the preceding year - extremely hazardous substances present at the facility in amounts greater than or equal to 500 lb (227 kg - approx 55 gals) or the threshold planning quantity (TPQ) whichever is lower.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

FLAMMABLES/ COMBUSTIBLES STORAGE	(NOTE: The requirements pertaining to the handling, storage and use of flammable/combustible liquids with a flashpoint below 200 °F outlined through 29 CFR 1910.106 (checklist items 3-19 through 3-35) do not apply to the following:
	- bulk transportation of flammable/combustible liquids
	- storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment
	- storage of flammable and combustible liquids on farms
	- liquids without a flashpoint that may be flammable under some conditions, such as halogenated hydrocarbons and mixtures containing halogenated hydrocarbons
	- mists, sprays, or foams, except in flammable aerosols
	- the following facilities when they meet National Fire Protection Association Standards:
	  - drycleaning plants
	  - manufacture of organic coatings
	  - solvent extraction plants
	  - stationary combustion engines and gas turbines (29 CFR 1910.106(j)).)

General	
3-19. Specific good management practices should be considered when storing and handling flammable/combustible materials (GMP).	Verify that the following good management practices are followed: - there are no positive sources of ignition (open flames, welding, *radial heat, mechanical sparks*) in the immediate area - items are not stored against pipes or coils producing hea - paint drums that are stored horizontally are rolled a half turn every 90 days - containers of paint are palletized prior to storage - aerosol containers are stored in well-ventilated areas. Verify that containers are stored and handled such that: - open flame devices are not in use in the storage area - combustible materials, other than wood pallets used in the storage of flammable/combustibles, are not stored in the storage facility - handling is done so as to avoid damaging the label - materials received without a date of manufacture label are marked with the shipping document date - leaking containers are removed from the storage are immediately - containers are stored so that they are issued or used in the order of dates of manufacture, with the material being the oldest used first - there are no open containers.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-20. Drums and other containers of less than 60 gal individual capacity and portable tanks less than 660 gal individual capacity used to store flammable or combustible materials are required to meet specific standards (29 CFR 1910.106(d)(1) and 1910.106(d)(2)).	Verify that flammable and combustible liquid containers meet the constraints outlined in Appendix 3-2 except that glass or plastic containers of no more than 1 gal capacity may be used for a Class IA or IB flammable liquid if: - the liquid would be rendered unfit for its intended use by contact with metal or would excessively corrode a metal container - the user's process either would require more than 1 pint of a Class IA liquid or more than 1 quart of a Class IB liquid of a single assay lot to be used at one time, or would require the maintenance of an analytical standard liquid of a quality which is not met by the specified standards of the liquids available, and the quantity of the analytical standard liquid required to be used in any one control process exceeds one-sixteenth the capacity of the container allowed under Appendix 3-2 for the class of liquid. Verify that each portable tank has one or more devices installed in the top with sufficient emergency venting capacity to limit internal pressure under fire exposure conditions to 10 psig or 30 percent of the bursting pressure of the tank, whichever is greater. (NOTE: These standards do not apply to: - storage of containers in service stations, Class I or Class II liquids in the fuel tanks of a motor vehicles, aircraft, boat, or portable or stationary engine - flammable or combustible paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days.)
...	...
3-21. Flammable or combustible liquids shall not be stored in ways that limit the use of exits, stairways, or areas normally used for the safe egress of people (29 CFR 1910.106(d)(5)(i)).	Verify that exits or common traffic routes are not blocked. (NOTE: These standards do not apply to: - storage of containers in service stations, Class I or Class II liquids in the fuel tanks of a motor vehicles, aircraft, boat, or portable or stationary engine - flammable or combustible paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days.)
...	...
3-22. Storage cabinets used for the storage of flammable/combustible liquids must meet specific requirements (29 CFR 1910.106(d)(3)).	Verify that storage cabinets meet the following: - no more than 60 gal of Class I or Class II liquids nor any more than 120 gal of Class III liquids are stored in the cabinet - the cabinets are fire-resistant - cabinets are constantly closed and are conspicuously labeled FLAMMABLE - Keep Fire Away.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-23. Storage cabinets used for the storage of flammable/combustible liquids should meet specific requirements (GMP).	Verify that storage cabinets meet the following: - materials within the cabinet are segregated - there are no open containers within the cabinet - all containers in the cabinet are labeled.
...	...
3-24. Inside flammable/ combustible storage rooms must meet certain specifications (29 CFR 1910.106(d)(4)).	Verify that the facility's flammable/ combustible storage facility meet the following: - the walls meet fire resistance test NFPA 251-1969 - a 4 inch (in.) raised sill or ramp is provided to adjacent rooms or buildings, or the floor of the storage area is 4 in. lower than the surrounding floors - an open grated trench that drains to a safe area is in the building if a sill or ramp is not present - liquid tight wall/floor joints exist - self-closing fire doors exist (NFPA 80) - the electrical wiring and equipment meet NFPA 70 requirements - the storage in the rooms meet the requirements in Appendix 3-3 - there is either gravity or mechanical exhaust ventilation system - the exhaust system provides for six changes of air in the room per hour - mechanical exhaust systems are controlled by a switch outside the door and have exhaust outlets on exterior walls - for gravity ventilation, the fresh air intake is on exterior walls - there is one clear aisle at least 3 feet (ft) wide - containers over 30 gal capacity are not stacked one upon the other - wooden shelving is at least 1 in. thick - dispensing is done by an approved pump or self-closing faucet.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-25. The storage of flammable or combustible liquids in warehouses or storage buildings shall meet specific requirements (29 CFR 1910.106 (d)(5)(vi)).	Verify that the following requirements are met: - if the storage facility is located 50 ft or less from a building or line of adjoining property that may be built upon, the exposing wall is a blank wall having a fire-resistance rating of at least 2 h - any quantity of liquids may be stored as long as the storage arrangements outlined in Appendix 3-4 are met - containers are separated by pallets or dunnage when necessary to provide stability and prevent excess stress on container walls - portable tanks which are stored over one tier high are designed to nest securely - no pile is closer than 3 ft to the nearest beam, chord, girder, or other obstruction - piles are 3 ft below sprinkler deflectors or discharge points of water spray - aisles are at least 3 ft wide when necessary for access to doors, windows, or standpipe connections.
...	...
3-26. Flammable/combustible materials stored outside of buildings must meet certain storage and handling criteria (29 CFR 1910.106(d)(6)).	Verify that outdoor flammable/combustible storage meets the following: - no more than 1100 gal of flammable/combustible liquids is stored adjacent to buildings located on the same premises unless 10 ft or more exists between buildings and the nearest flammable container - the storage area is graded to divert spills or is surrounded by a curb at least 6 in. high - drains terminate in a safe location - the storage area is protected against tampering and kept free of wastes and other combustible materials - all containers bear contents, labels, and hazard markings - total quantity and arrangement of liquids outside a building complies with the requirements in Appendix 3-4. (NOTE: These standards do not apply to - storage of containers in service stations, Class I or Class II liquids in the fuel tanks of a motor vehicles, aircraft, boat, or portable or stationary engine - flammable or combustible paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-27. Areas where flammables/combustibles are stored must meet certain fire protection standards (29 CFR 1910.106 (d)(7)).	Verify that all flammable/combustible storage locations meet the following: - there is at least one 12-B rated portable fire extinguisher is located outside and within 10 ft of the door opening into any room for storage - there is at least one 12-B rated portable fire extinguisher is located within 10 to 25 ft of any Class I or Class II liquid storage area outside of a storage room, but inside a building - fire extinguishing sprinklers or systems meet the standards in 29 CFR 1910.159 - no smoking or open flame is permitted within 50 ft and signs are posted - incompatible materials are not stored together - no water reactive materials are stored in the same room with flammable/combustible liquids. (NOTE: These standards do not apply to - storage of containers in service stations, Class I or Class II liquids in the fuel tanks of a motor vehicles, aircraft, boat, or portable or stationary engine - flammable or combustible paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Industrial Areas	(NOTE: Items 3-28 through 3-30 pertain to industrial areas where the use of flammable or combustible liquid is incidental to the principal business or where flammable or combustible liquids are handled or used only in unit physical operations such as drying, evaporating, filtering, distillation, and similar operations which do not involve chemical reactions.)
...	...

3-28. Areas where flammable/combustible materials are stored, dispensed, or used in industrial plants shall meet specific guidelines (29 CFR 1910.106(e)(4) through 1910.106(e)(9)).	Verify that the following provisions are met:
	- portable fire extinguishers and fire control equipment shall be in place in quantity and type as needed for the hazards of operation and storage at the site
	- adequate precautions shall be taken to prevent sources of ignition at the site
	- Class I liquids shall not be dispensed into containers unless nozzles and containers are electrically interconnected
	- operations such as welding and cutting for repairs to equipment shall be done under the supervision of an individual in responsible charge
	- maintenance and operating practices shall control leakage and prevent the accidental escape of flammable or combustible liquids:
	  - adequate aisles shall be maintained
	  - combustible waste material and residues shall be kept to a minimum, stored in covered metal containers, and disposed of daily
	  - the grounds area around the buildings and unit operating areas shall be kept free of weeds, trash or other unnecessary combustibles
	- tank vehicle and tank car loading or unloading facilities are separated from aboveground tanks, warehouses, and other plant buildings or nearest line of adjoining property by a distance of 25 ft for Class I liquids and 15 ft for Class II and III liquids.

...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

3-29. Incidental storage of flammable/combustible liquids in industrial areas must conform to certain requirements (29 CFR 1910.106(e)(2)).	Verify that flammable and combustible liquids are stored in closed containers.
	
	Verify that the storage areas meet the requirements outlined in 29 CFR 1910.106(d)(3) through 1910.106(d)(4) as listed in checklist item 3-20 and checklist item 3-22 except that:
	
	- the quantity of liquid that can be located outside of an inside storage room or storage cabinet in a building or in anyone fire area of a building shall not exceed:
	  - 25 gal of Class IA liquids in containers
	  - 120 gal of Class IB, IC, II, or III liquids in containers
	  - 660 gal of Class IB, IB, II, or III liquids in a single portable tank
	- where large quantities of flammable or combustible liquids are needed, storage may be in tanks.
	
	Verify that areas where flammable/combustible liquids are transferred from one container to another container are separated from other operations in the building by an adequate distance or by construction having fire resistance.
	
	Verify that drainage or other means is provided to contain spills and adequate natural or mechanical ventilation is present.
	
	Verify that the following practices are done at the point of final use:
	
	- flammable liquids are kept in covered containers when not actually in use
	- where flammable/combustible liquids are used or handled means are provided to dispose promptly and safely of spills and leaks
	- Class I liquids are only used where there are no open flames or other sources of ignition
	- flammable/combustible liquids are drawn from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self closing valve. Transferring by means of air pressure on the container or portable tanks is prohibited.

...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-30. Those areas where flammable/combustible liquids are used in unit operations such as mixing, drying, evaporating, filtering, or distillation are required to meet specific operating standards (29 CFR 1910.106 (e)(3)).	Verify that the the following parameters are met: - these areas are located so that each building or unit of equipment is accessible from at least one side for fire fighting - areas where unstable liquids are handled or small scale unit chemical processes are carried on shall be separated from the remainder of the area by a fire wall of 2 h minimum fire resistance rating - emergency drainage systems direct leakage and fire protection water to a safe location - emergency drainage systems, if connected to public sewers or discharged into public waterways, are equipped with traps or a separator - when Class I liquids are being used, ventilation is provided at a rate of not less than 1 $ft^3/min/ft^2$ of solid floor area through either natural or mechanical means - equipment is designed to limit flammable vapor-air mixtures.
...	...
Tanks	
3-31. Tanks used for the storage of flammable/combustible liquids are required to meet specific design and construction standards (29 CFR 1910.106(b)(1)).	Verify that tanks are built of steel unless: - the tank is installed underground - the properties of the liquid being stored requires materials other than steel be used - the tank is designed according to specifications embodying principles recognized as good engineering design for the materials used - it is an unlined concrete tank that stores flammable or combustible liquids having a gravity of 40 $^{\circ}$ API or heavier. Verify that tanks located above ground or inside buildings are of noncombustible construction. (NOTE: Tanks designed for underground service not exceeding 2000 gal capacity may be used above ground and low-pressure tanks and pressure vessels may be used as atmospheric tanks.) Verify that atmospheric tanks are not used for the storage of a flammable or combustible liquid at a temperature at or above its boiling point. Verify that the normal operating pressure of a low pressure tank does not exceed the design pressure of the tank.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-32. Outside above-ground tanks used for the storage of flammable/ combustible liquids are required to be installed according to specific parameters (29 CFR 1910.106(b)(2)(i) through 1910.106(b) (2)(ii)).	Verify that there is a minimum distance of 3 ft between any two tanks. Verify that the distance between any two adjacent tanks is not less than one-sixth the sum of their diameters. (NOTE: When the diameter of once tank is less than half the diameter of the adjacent tank, the distance between the two tanks shall not be less than one-half the diameter of the smaller tank.) Verify that where unstable flammable or combustible liquids are stored, the distance between the tanks is not less than one-half the sum of their diameters. Verify that when tanks are compacted in three or more rows or in an irregular pattern, greater spacing or other means is provided for firefighting access. Verify that there is a minimum distance of 20 ft between a liquified petroleum gas container and a flammable or combustible liquid storage tank. (NOTE: In the case of flammable of combustible liquid tanks operating at pressure exceeding 2.5 psig or equipped with emergency venting which will permit pressures to exceed 2.5 psig spacing of 3 ft or the use of the formula concerning one-sixth of diameters may be used.) Verify that means such as diversion curbs or grading are provided to prevent the accumulation of flammable or combustible liquids under adjacent LPG containers. Verify that if flammable combustible liquid storage tanks are within a diked area, LPG containers are outside the diked area and at least 10 ft away from the centerline of the wall of the diked area. (NOTE: The requirement concerning LPG containers and diked areas does not apply if LPG containers of 125 gal or less capacity are installed adjacent to fuel oil supply of 550 gal or less capacity.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
3-33. Tanks for the storage of flammable/ combustible liquids are required to meet specific containment requirements (29 CFR 1910.106(b)(2)(vii)).	Verify that the area surrounding a tank or a group of tanks is either provided with drainage or diked as follows: - drainage systems terminate in vacant land or other area or in an impounding basin having a capacity not smaller than that of the largest tank served - diked areas have a volumetric capacity of not less than the greatest amount of liquid that can be released from the largest tank within the diked area, assuming a fuel tank. Verify that walls of diked areas are of earth, concrete, steel, or solid masonary designed to be liquid tight. Verify that earthen walls 3 ft or more in height have a top that is no less than 2 ft wide. Verify that the walls of the diked area are restricted to an average height of 6 ft above interior grade. Verify that there are no loose combustible materials, empty or full drums or barrels within the diked area.
...	...
3-34. In locations where flammable vapors may be present from storage tanks, precautions are required to be taken to prevent ignition (29 CFR 1910.106(b)(6)).	Verify that sources of ignition such as open flames, smoking, welding and cutting, hot surfaces, sparks, and radiant heat are avoided.
...	...
3-35. Tanks used for the storage of flamable/ combustible liquids are required to be strength tested before being placed into service (29 CFR 1910.106(b)(7)).	Verify that the tank is marked with a American Society of Mechanical Engineers (ASME) code stamp, American Petroleum Institute (API) monogram, or the label of the Underwriters Laboratory as evidence of having had a strength test.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Compressed Gas Storage	
3-36. The in-plant storage, handling, and utilization of all compressed gases in cylinders, portable tanks, rail tankers, or motor vehicles must be done according to the Compressed Gas Association Pamphlet P-1-1965 (29 CFR 1910.101).	Verify that compressed gas cylinders and tanks have safety relief devices.
...	...
3-37. Compressed gases should be handled according to specific procedures and practices (GMP).	Verify that the following practices and procedures are followed: - oxygen cylinders are free from grease or oil - numbers of markings that are stamped on the cylinders are not altered or defaced - additional markings are not applied to cylinders without approval - empty cylinders are stored separately but in the same manner as full cylinders - valves on empty cylinders are closed - NO SMOKING signs are posted in and around compressed gas storage sheds.
...	...
Acid Storage	
3-38. Bulk storage of acids should meet certain storage and handling criteria (GMP).	Verify that bulk acid storage sites meet the following: - buildings are one story in height, preferably of nonflammable construction - there are permanent louvered openings at floor and ceiling levels or other gravity ventilation method - there is safety equipment available and operating (eye wash, deluge shower, self-contained breathing apparatus, protective clothing) - the building is heated to prevent freezing (if applicable) - different acids are stored in separate spaces or noncombustible sealed barriers at least 3 ft high between acids - NO SMOKING signs are posted - automatic sprinkler protection is provided - workers are provided with protective safety equipment and a copious, flowing supply of fresh, clean water for first aid.
...	...

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
TRANSPORTATION **3-39.** Transportation of hazardous materials should be done in a manner that prevents spills to the environment, exposure risks to personnel and promotes safe handling practices (GMP). ...	Determine if Agency personnel transport hazardous materials on and/or offsite. Verify that precautions are taken when transporting including the following: - MSDS sheets are available in case of an accident - personnel are trained in how to handle the materials being transported - materials are closed when being transported - vehicles are placarded to indicate the types of materials being transported as indicated in Appendix 3-5. (NOTE: The regulations found in Title 49, Subchapter C of the CFR detail requirements for the transportation of hazardous materials. 49 CFR 171.1(c) stipulates that these requirements apply when materials are being transported in commerce, not when they are being transported for internal use and purposes.) ...

Appendix 3-1

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 MSDSs must be developed under Occupational Safety and Health Act 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 threshold planning quantities (TPQ), is found in 40 CFR 355.

2. CERCLA Hazardous Substances (RQ) Chemicals - Releases of which are subject to reporting under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or "Superfund") of 1980. Such releases are also subject to reporting under Section 304 of Title III. CERCLA hazardous substances, and their reportable quantities (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
U.S. Environmental Protection Agency (USEPA)
WH-562A
401 M Street, SW
Washington, DC 20640
Phone: (800) 535-0262

Key to Symbols in the Consolidated Chemical List

\# - Indicates that the reportable quantity (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.

\+ - USEPA 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.	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

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.	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-Diaminoanole			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

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.	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 6-dinitrophenoll			x		139-65-1
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

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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

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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

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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

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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

Chemical Name	Extremely Has. Sub. 40 CFR 355 (lb)	Has Sub RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Has Wastes which are Has. Mat.	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

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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

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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

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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 3-1 (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.	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

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.	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

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.	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 dodecylbenzene 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

Chemical Name	Extremely Haz. Sub. 40 CFR 355 (lb)	Has Sub RQ 40 CFR 302.4 (lb)	Toxic Chemicals 40 CFR 372.65	Has Wastes which are Haz. Mat.	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

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.	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-(phenylisocyanate)(MBI)			x		101-68-8
Methylmercuric dicyanamide	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)chloropentafluoroethane (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

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.	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

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.	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-methyi	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

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.	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

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.	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 hydrochloride	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.	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

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.	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(Camphechlor)		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

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.	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

Appendix 3-2

Maximum Allowable Capacity of Containers And Portable Tanks (29 CFR 1910.106(d)(2), Table H-12)

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

Appendix 3-3

Storage in Inside Rooms
(29 CFR 1910.106(d)(4), Table H-13)

Fire Protection Provided[1]	*Fire Resistance*	*Maximum Size*	*Total Allowable Quantities (gals/ft² floor area)*[2]
Yes	2 h	500 ft^2	10
No	2 h	500 ft^2	4
Yes	1 h	150 ft^2	5
No	1 h	150 ft^2	2

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

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

Appendix 3-4

Storage of Flammable/Combustible Liquids
(29 CFR 1910.106(d)(5) and 1910.106(d)(6), Table H-14 through H-17)

Flammable/Combustible Materials
Indoor Container Storage

Class Liquid	Storage Level	Protected Storage Maximum per Pile	Unprotected Storage Minimum per Pile
A	Ground and upper floors	2750 (50)	600 (12)
	Basement	Not permitted	Not permitted
B	Ground and upper floors	5500 (100)	1375 (25)
	Basement	Not permitted	Not permitted
C	Ground and upper floors	16,500 (300)	4125 (25)
	Basement	Not permitted	Not permitted
II	Ground and upper floors	16,500 (300)	4125 (75)
	Basement	5500 (100)	Not permitted
III	Ground and upper floors	55,000 (1000)	13,750 (250)
	Basement	8250 (450)	Not permitted

(Numbers in parentheses indicate corresponding number of 55 gal drums.)

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

NOTE 2: Aisles will be provided so that no container is more than 12 ft from an aisle. Main aisles will be at least 8 ft wide and side aisles at least 4 ft wide.

NOTE 3: Each pile shall be separated from the others by at least 4 ft.

Flammable/Combustible Materials
Outdoor Container Storage

Class	Maximum per pile	Distance between piles	Distance to property line that can be built upon	Distance to street, alley or public way
	(gal)	(ft)	(ft)	(ft)
IA	1100	5	20	10
IB	2200	5	20	10
IC	4400	5	20	10
II	8800	5	10	5
III	22,000	5	10	5

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

NOTE 2: Within 200 ft of each container, there will be a 12 ft wide access way to permit approach of fire control apparatus.

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

NOTE 4: When total quantity stored does not exceed 50 percent of maximum per pile, the distance in columns 4 and 5 may be reduced 50 percent, but not less than 3 ft.

Flammable/Combustible Materials
Indoor Portable Tank Storage

Class Liquid	Storage Level	Protected Storage Maximum per Pile (gal)	Unprotected Storage Minimum per Pile (gal)
IA	Ground and upper floors	Not permitted	Not permitted
	Basement	Not permitted	Not permitted
IB	Ground and upper floors	20,000	2000
	Basement	Not permitted	Not permitted
IC	Ground and upper floors	40,000	5500
	Basement	Not permitted	Not permitted
II	Ground and upper floors	40,000	5500
	Basement	20,000	Not permitted
III	Ground and upper floors	60,000	22,000
	Basement	20,000	Not permitted

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

NOTE 2: Aisles will be provided so that no container is more than 12 ft from an aisle. Main aisles will be at least 8 ft wide and side aisles at least 4 ft wide.

NOTE 3: Each pile shall be separated from each other by at least 4 ft.

Flammable/Combustible Materials
Outdoor Portable Tank Storage

Class	Maximum per pile	Distance between piles	Distance to property line that can be built upon	Distance to street, alley public way
	(gal)	(ft)	(ft)	(ft)
IA	2200	5	20	10
IB	4400	5	20	10
IC	8800	5	20	10
II	17,600	5	10	5
III	44,000	5	10	5

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

NOTE 2: Within 200 ft of each container, there will be a 12 ft wide access way to permit approach of fire control apparatus.

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

NOTE 4: When total quantity stored does not exceed 50 percent of maximum per pile, the distance in columns 4 and 5 may be reduced 50 percent, but not less than 3 ft.

Appendix 3-5

Placarding Guidelines

The following table specifies placards that should be used for the transportation of ANY QUANTITY of the listed hazardous material.

Hazardous Materials

Classed or Described As	*Placards*
Class A Explosives	EXPLOSIVES A
Class B Explosives	EXPLOSIVES B
Poison A	POISON GAS
Flammable Solid	FLAMMABLE SOLID

(NOTE: Any of the above substances that are dangerous when wet should also have the placard: DANGEROUS WHEN WET, in addition to their primary placard.)

The following table specifies placards that should be used for the transportation of 1000 lb or more of the listed hazardous materials.

Hazardous Materials

Classed or Described As	*Placards*
Class C Explosives	FLAMMABLE
Nonflammable Gas	NONFLAMMABLE GAS
Nonflammable Gas (Chlorine)	CHLORINE
Nonflammable Gas (Fluorine)	POISON
Nonflammable Gas (Oxygen, pressurized liquid)	OXYGEN
Flammable Gas	FLAMMABLE GAS
Combustible Liquid	COMBUSTIBLE
Flammable Liquid	FLAMMABLE
Flammable Solid	FLAMMABLE SOLID
Oxidizer	OXIDIZER
Organic Perioxide	ORGANIC PERIOXIDE
Poison B	POISON
Corrosive Material	CORROSIVE
Irritating Material	DANGEROUS

1. Placards should be affixed on both sides, rear and front, of the motor vehicle.

2. Place placards clear of ladders, pipes, and tarps.

3. Placards should be at least 3 in away from advertising and markings.

4. The DANGEROUS placards may be used when a motor vehicle contains two or more classes of hazardous materials requiring different placards. The DANGEROUS placard may be used in place of the separate placards for each class.

5. Portable tanks having a rated capacity of 1000 gal or more must be placarded.

6. Cargo tanks having any quantity of hazardous material must be placarded.

INSTALLATION:	COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT Federal Aviation Administration	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

Section 4

Hazardous Waste Management

Section 4

HAZARDOUS WASTE MANAGEMENT

A. Applicability

This section applies to FAA facilities that generate or transport any type of hazardous waste. Federal regulations establish different regulatory requirements based on the amount of hazardous waste generated.

The Federal government also regulates the treatment, storage, and disposal of hazardous waste. These requirements have not been included in this section since they are activities not done by FAA facilities.

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. Specifically, RCRA prohibited the placement of bulk or noncontainerized liquid hazardous waste or free liquids containing hazardous waste into a landfill. It also prohibited the land disposal of specified wastes and disposal of hazardous waste through underground injection within 1/4 mile 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 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 (FOTW).

C. State/Local Regulations

Many states have met USEPA requirements in 40 CFR 271 and have been authorized to manage their own state programs. RCRA encourages states to develop their own hazardous waste statutes and to operate regulatory programs in lieu of the Federal USEPA managed program. Many of the states have adopted the USEPA regulations by reference or have promulgated regulations which are identical to the USEPA regulations; while other states have promulgated regulations stricter than the Federal RCRA. 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 section 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. FAA Regulations

- None at this time.

E. Key Compliance Requirements

- Generator Requirements - Responsibilities of FAA facilities are based on the amount of waste being generated in 1 month (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 kg of hazardous waste or 1 kg of acutely hazardous waste in a 1 mo time period. They also do not accumulate onsite more than 1000 kg of waste at any one time. When either the volume of waste produced in 1 mo exceeds 100 kg or more than 1000 kg of waste has accumulated onsite, the facility is required to comply with the more stringent standards applicable to a Small Quantity Generator (SQG).
    2. An SQG produces between 100 and 1000 kg of hazardous waste in a month. The waste cannot accumulate onsite for more than 180 days unless the waste is transported more than 200 miles to a TSD facility. In that situation, the waste can accumulate for 270 days. But at no time is there to be more than 6000 kg of waste accumulated at the facility. When the volume of waste generated exceeds 1000 kg, the accumulation time onsite is exceeded, or more than 6000 kg of waste is onsite, the facility 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 of hazardous waste in a month.

(NOTE: Using water, which weighs approximately 8 lb/gallon (gal) (3.67 kg/gal) as a basis of measurement, 100 kg would equal about 28 gal (one-half of a 55 gal drum), 1000 kg would equal about 273 gal (almost five, 55 gal drums).

Whether the facility is a CESQG, an SQG, or a Generator/LQG determines the type of records the facility 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 FAA facility is required to test or use prior knowledge of its solid waste to determine if it has hazardous characteristics. Every FAA facility 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.

- Transport Requirements - Containers of hazardous waste shipped offsite must be labeled identifying the waste and its hazard class.

- Accumulation Point Management - An accumulation point is an area in or near the workplace where hazardous waste is accumulated/stored before being turned in for disposal. Storage in these areas is temporary and the permissible length of time for accumulation depends on what size generator the facility is.

- Satellite Accumulation Point Management - A satellite accumulation point is where no more than 55 gal of a hazardous waste or 1 quart of acute hazardous waste is accumulated. The satellite accumulation point is under the control of one operator. When the 55 gal limit is reached the operator has 3 days to move the waste to a 90 day storage area or a permitted Treatment Storage Disposal Facility (TSDF).

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

These definitions were obtained from the previously cited regulations.

- *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).

- *Acute Hazardous Waste* - any waste listed under 40 CFR 261.31 - 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).

- *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).

- *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 treatment, storage, or disposal facility 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).

- *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).

- *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 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 treatment, storage, or disposal facility 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 man-made 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 on 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 on 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).

- *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 Part 261, Subpart D and to each characteristic identified in Part 261, Subpart C (40 CFR 260.10).

- *EPA Identification Number* - the number assigned by USEPA to each generator, transporter, and treatment, storage, or disposal facility (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 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 (e.g. one or more landfills, surface impoundments, or combination of them) (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 Part 261, or whose act first causes a hazardous waste to become subject to regulation (40 CFR 260.10). (NOTE: This typically refers to a facility producing hazardous waste in quantities greater than 1000 kg/mo.)

- *Good Management Practice* - 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 4-1 (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 Part 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).

- *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
    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. comingling with another waste or material under uncontrolled conditions because the commingling conditions produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mist, fumes, or gases, or flammable fumes or gases (40 CFR 260.10).

- *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).

- *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).

- *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).

- *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 placement in a concrete vault or bunker intended for disposal purposes (40 CFR 268.2).

- *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).

- *Large Quantity Generator (LQG)* - see *Generator.*

- *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 (e.g., 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).

- *Management or Hazardous Waste Management* - 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 twelve-digit number assigned to the manifest to the generator plus a unique 5 digit number assigned to the Manifest by the generator for recording and reporting purposes (40 CFR 260.10).

- *Movement* - that hazardous waste transported to a facility in an individual vehicle (40 CFR 260.10).

- *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 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).

- *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).

- *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).

- *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 definitions 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 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 Ground-Water 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 ground-water 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).

- *Representative Sample* - a sample of a universe or whole (e.g., waste pile, lagoon, groundwater) which can be expected to exhibit the average properties of the universe or whole (40 CFR 260.10).

- *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).

- *Run-off* - 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 that generates less than 1000 kg or hazardous waste in a calendar month but more than 100 kg (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 storage, treatment, or disposal facilities; 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).

- *Tank* - a stationary device designed to contain an accumulation of hazardous waste that is constructed primarily of nonearthen materials (e.g., wood, concrete, steel, plastic) which provide structural support (40 CFR 260.10).

- *Tank System* - a hazardous waste storage or treatment tank and its associated ancillary equipment and containment system (40 CFR 260.10).

- *Transport Vehicle* - a motor vehicle or rail car used used for the 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
    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).

- *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 Mariana 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).

- *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).

	REFER TO WORKSHEET ITEMS:
All Facilities	4-1 through 4-6
Personnel Training Requirements	4-7 and 4-8
All Generators	
General	4-9 through 4-14
Satellite Accumulation Points	4-15
Conditionally Exempt Small Quantity Generators (CESQGs)	4-16 through 4-19
Small Quantity Generators (SQGs)	
General	4-20 through 4-23
Containers	4-24 through 4-29
Container Storage Areas	4-30 through 4-32
Tank Systems Storage	4-33 through 4-35
Large Quantity Generators (LQGs)	
General	4-36 through 4-43
Personnel Training	4-44 and 4-45
Containers	4-46 through 4-51
Container Storage Areas	4-52 through 4-54
Tank Systems Storage	4-55 through 4-65
Containment Buildings	4-66 through 4-72
Transportation	4-73 through 4-77
Land Disposal of Restricted Wastes	4-78 through 4-87

Records to Review

Generator

- 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

Physical Features to Inspect

- Accumulation points
- Vehicles used for transport
- Storage facilities (including drums)

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
4-1. Determine actions or changes since previous review of hazardous waste (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report.
...	...
4-2. Copies of all relevant Federal, FAA, state, and local regulations and guidance documents on hazardous waste should be available at the facility (GMP).	(NOTE: State may obtain partial 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.) Verify that copies of the following regulations are available and kept current: - 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 268, *Land Disposal Restriction.* - *State hazardous waste management regulations.* Determine if facility environmental staff are familiar and knowledgeable of regulatory requirements.
...	...
4-3. Facilities are required to abide by state and local hazardous waste regulations (Federal Facilities Compliance Act, Sec. 102(a)(3)).	Verify that the facility is abiding by state and local hazardous waste requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (NOTE: Issues typically regulated by state and local agencies include: - additional manifesting requirements - more frequent reporting requirements - transportation - identification of special waste or waste categories - regulation of specific substances as hazardous waste such as: medical, pathological, and infectious waste; used oil, explosives; used batteries - SQG and CESQG requirements - disposal requirements - construction and operation of storage and disposal facilities.)

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning hazardous waste have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...
4-5. Material resources should be procured and used in a way that minimizes waste production (GMP).	Verify that the facility has a plan to recycle, reuse material, and substitute less hazardous products to greatest extent possible.
...	...
4-6. 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. Verify that the individuals designated responsible for hazardous waste storage areas are aware of the precise nature of their responsibilities.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Personnel Training Requirements	
4-7. 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. Verify that the training program includes the following: - 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. Verify that an annual review of initial training is provided. Verify that employees do not work unsupervised until training is completed. Verify specifically that accumulation point managers and hazardous waste handlers have been trained.
...	...
4-8. Training records must be maintained for all generator staff who manage hazardous waste (GMP).	Examine training records and verify they include the following: - 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 years (yr) after employment at the facility. Verify that records are transferred with employees.
...	...

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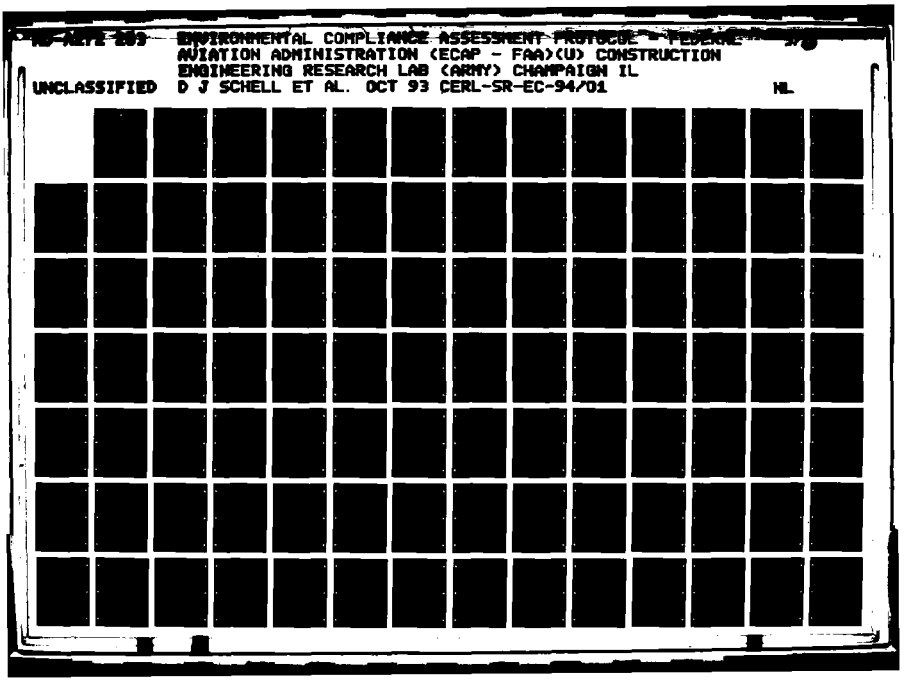

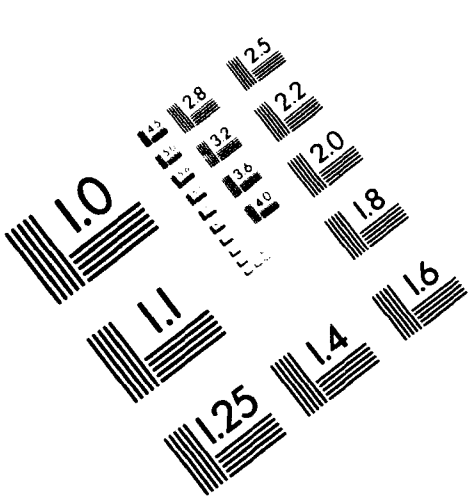

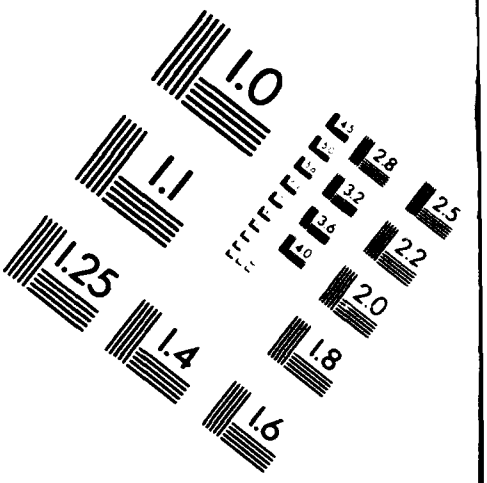

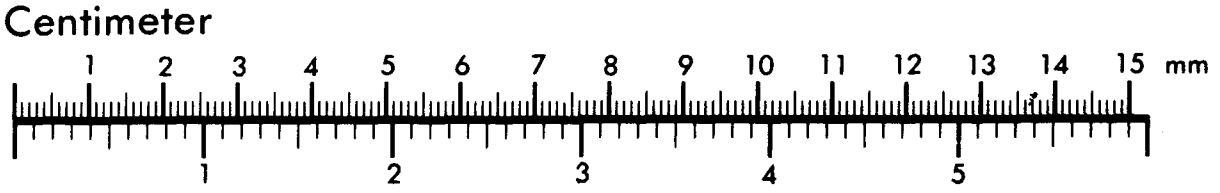

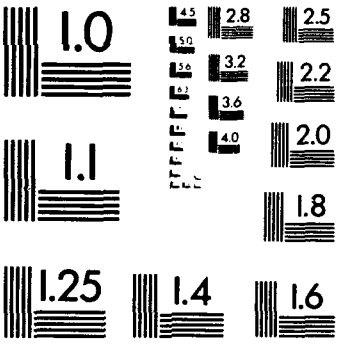

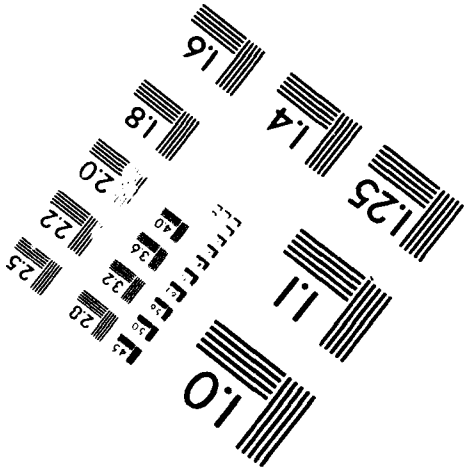

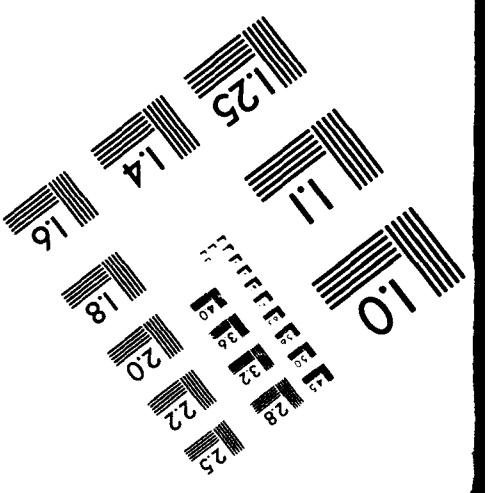

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COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL GENERATORS **General** **4-9.** Facilities that generate solid wastes must determine if the wastes are hazardous wastes (40 CFR 261.3, 261.24 and 262.11).	Determine if there is a hazardous waste inventory describing all the waste streams and a hazardous waste analysis plan identifying and characterizing the facility hazardous waste streams. (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 facility were identified and classified. Determine if the facility followed USEPA criteria for identifying the characteristics of hazardous waste and USEPA's listed wastes in 40 CFR 261. Determine whether the facility 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. (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 facilities 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 part 280 (See *UST MANAGEMENT*) - 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

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-9. (continued)	- 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 ignitability, corrosivity, and reactivity. Verify that wastes are tested for toxicity characteristics or are previously identified as toxic (see Appendix 4-2). Determine if wastes contain contaminants in greater concentrations than the Toxicity Characteristics listed in Appendix 4-3. Verify that wastes which exceed toxicity characteristics are handled as hazardous wastes. Verify that all data, including quality assurance data is maintained and kept available for reference or inspection.
...	...
4-10. Facilities that generate hazardous wastes must test their wastes tor use prior knowledge to determine if it is a restricted from land disposal (40 CFR 268.7).	Determine whether the generator tests for restricted wastes. Determine if the facility generates restricted wastes by reviewing test results (See Appendix 4-4). (NOTE: Use the Land Disposal section questions for generators of these wastes in addition to the questions in this section.)
...	...
4-11. A facility must not offer its hazardous waste to transporters or to treatment, storage or disposal facilities that have not received an USEPA ID No. (40 CFR 262.12(c)).	Examine records pertaining to transporter or TSDF contract awards; verify that all transporters of hazardous wastes or TSDFs have an USEPA ID No.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-12. 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. Verify that copies are kept for 3 yr. (NOTE: Reporting for exports of hazardous waste is not required.) (NOTE: This does not apply to CESQG.)
...	...
4-13. Facilities 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. (NOTE: Periods of retention for manifests may be extended automatically during the course of any unresolved enforcement action.)
...	...
4-14. 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 TSD.
...	...
Satellite Accumulation Points **4-15.** All generators may accumulate as much as 55 gal of hazardous waste or one quart 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. 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. Verify that the containers are marked HAZARDOUS WASTE or other appropriate identification. (NOTE: See Appendices 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: - 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.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS (CESQGs)
 	
4-16. Generators of no more than 100 kg per month 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:
	
	- no more than 100 kg of hazardous waste is generated in a calendar month
	- total onsite accumulation does not exceed more than 1000 kg of hazardous waste
	- no more than 1 kg of acute hazardous waste (See Appendix 4-5) is generated in a calendar month, or
	- no more than a total of 100 kg 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 offsite TSDF, either of which are one of the following:
	
	- permitted
	- in 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 it waste prior to beneficial use or reuse, or legitimate recycling or reclamation.
	
	(NOTE: If a hazardous waste generator meets the requirements for being a CESQG, they are not required to meet any of the standards outlined in 40 CFR parts 262 through 266 (except 262.11, 268, and 270).
	
	(NOTE: If a facility mixes its waste with used oil, the mixture is subject to the requirements in Subpart G of Part 279 if it is destined to be burned for energy recovery, *Petroleum, Oil, and Lubricant (POL) Management.*)
	
	(NOTE: Quantities of acute hazardous waste greater than listed amounts are required to be handled according to the standards in 40 CFR Parts 262 through 266, 268, and Parts 270 and 124.)

...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-17. 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) of residue remains. Verify that for containers or inner liners if the container is less than or equal to 110 gal that no more than 3 percent by weight of total container capacity remains. Verify that for containers or inner liners when the container is greater than 110 gal no more than 0.3 percent by weight of the total container capacity remains. Verify that for containers that held a compressed gas the pressure in the container approaches atmospheric. 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: - 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.
...	...
4-18. Containers at CESQGs should be managed in accordance with good management practices (GMP).	Verify the following by inspecting storage areas: - 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 3 feet (ft) of aisle space is provided between rows of containers.
...	...
4-19. 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. (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.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
SMALL QUANTITY GENERATORS (SQGs) **General**	
4-20. Generators of more than 100 kg but less than 1000 kg of hazardous waste per month may qualify as an 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. Verify that no more than 1000 kg of hazardous waste is generated in any month. Verify that the onsite accumulation time does not exceed 180 days. (NOTE: The 180 day time period is extended to 270 days if the waste must be transported more than 200 miles to a TSD facility.) Verify that no more than 6000 kg is allowed to accumulate at the facility. Verify that containers are marked with the date accumulation began and the words HAZARDOUS WASTE. Verify that the containers and the areas where containers are stored meet the requirements outlined in the questions applying to SQGs (Containers, Container Storage Areas, and Tank Systems Storage). (NOTE: When an SQG exceeds the quantity generation or amount accumulation he becomes subject to either LQG requirements or all TSDF requirements. When an SQG exceeds storage time limitation, it becomes subject to full TSDF regulations.)
...	...
4-21. SQGs that generate, transport, or handle hazardous wastes must obtain an USEPA ID No. (40 CFR 262.12(a), 262.12(b), and 265.11).	Examine documentation from USEPA for the facilities generator ID Nos. Verify that correct ID No. is used on all appropriate documentation (i.e., manifests).
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-22. 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. (NOTE: The requirement to prepare a manifest does not apply if: - the waste is reclaimed under contractual agreement and: - 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.) 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. Verify that exception reports are kept for at least 3 yr. Verify that records of test results, waste analyses, and determinations are kept for 3 yr. (NOTE: Period of retention of records is extended automatically during the course of any unresolved enforcement action.)
...	...
4-23. SQGs are required to have an emergency coordinator and emergency response planning (40 CFR 262.34(d)(5)).	Verify that the facility has an emergency coordinator. Verify that emergency information is posted next to the telephone: - 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.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Containers	
4-24. 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 of residue remains. Verify that for containers or inner liners if the container is less than or equal to 110 gal that no more than 3 percent by weight of total container capacity remains. Verify that for containers or inner liners when the container is greater than 110 gal no more than 0.3 percent by weight of the total container capacity remains. Verify that for containers that held a compressed gas the pressure in the container approaches atmospheric. 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: - 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 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. Verify that waste is transferred to a new container or managed in another appropriate manner when necessary.
...	...
4-26. 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, in particular, check that strong caustics and acids are not stored in plastic drums.
...	...
4-27. 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). Verify that handling and storage practices do not cause damage to the containers or cause them to leak.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-28. The handling of incompatible wastes, or incompatible wastes and materials in containers at SQGs must comply with safe management 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: - 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. 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.
...	...
4-29. 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: - 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 3 ft of aisle space is provided between rows of containers.
...	...
Container Storage Areas	
4-30. 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. (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.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-31. 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: - 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. 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. 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. Verify that the hospital is familiar with the site and the types of injuries that could result in an emergency.
...	...
4-32. 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. (NOTE: This includes accumulation points.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

Tank Systems Storage
 	
4-33. 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 facility is an SQG that stores or treats wastes in tanks and verify that:
	
	- 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 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:
	
	- 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.
	
	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-34. 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: - 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 National Fire Protection Association's *Flammable and Combustible Liquids Code* are maintained. Verify that incompatible waste, or incompatible wastes and materials, are not placed in the same tank system unless minimum safety requirements are met. 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.
...	...
4-35. 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.
...	...
LARGE QUANTITY GENERATORS (LQG)	
General	
4-36. An LQG that generates, transports, or handles hazardous wastes must obtain a USEPA ID No. (40 CFR 262.12(a), 262.12(b), 264.11, and 265.11).	Examine documentation from USEPA for the facilities generator ID No. Verify that correct ID No. is used on all appropriate documentation (i.e., manifests).
..	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-37. 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 accumulation point manager. Verify that: - the recorded start date indicates no container or tank has been 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 outlined in the questions applying to LQGs (Containers, Container Storage Areas, Tank System Storage, and Containment Buildings). (NOTE: A generator who meets these standards is exempt from meeting the closure requirements outlined in 40 CFR 265.110 through 265.150 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.)
...	...
4-38. 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: - 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. 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. 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. Verify that the hospital is familiar with the site and the types of injuries that could result in an emergency.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-39. 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 facilities 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. Verify that the plan includes the following: - 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 facility and also have been submitted to organizations which may be called upon to provide emergency services. Verify that the contingency plan is routinely reviewed and updated, specially 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.
...	...
4-40. Each LQG must have an emergency coordinator on the facility 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 facility or on call with responsibility for coordinating all emergency response measures. 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.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-41. 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 facility. Verify that the emergency coordinator is required to follow these emergency procedures: - immediately activate facility alarms or communication systems and notify appropriate facility, state, and local response parties - identify the character, exact source, amount, and a 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.
...	...
4-42. LQG facility 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 facility operating records. Verify that written reports have been submitted to the USEPA regional administrator within 15 days after the incident.
...	...
4-43. Facilities 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. Verify that exception reports are kept for 3 yr. (NOTE: Periods of retention for reports may be extended automatically during the course of any unresolved enforcement action.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Personnel Training	
4-44. All facility 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. Verify that the training program includes the following: - 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. Verify that an annual review of initial training is provided. Verify that employees do not work unsupervised until training is completed. Verify specifically that accumulation point managers and hazardous waste handlers have been trained.
...	...
4-45. Training records must be maintained for all facility staff who manage hazardous waste (40 CFR 265.1(d) and 265.16(e)).	Examine training records and verify they include the following: - 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. Verify that records are transferred with employees.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Containers	
4-46. 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, all wastes are removed that can be removed using common practices and no more than 2.5 cm of residue remains. Verify that for containers or inner liners if the container is less than or equal to 110 gal, no more than 3 percent by weight of total container capacity remains. Verify that for containers or inner liners when the container is greater than 110 gal no more than 0.3 percent by weight of the total container capacity remains. Verify that for containers that held a compressed gas the pressure in the container approaches atmospheric. 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: - 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.
...	...
4-47. 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. Verify that waste is transferred to a new container or managed in another appropriate manner when necessary.
...	...
4-48. 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, in particular, check that strong caustics and acids are not stored in plastic drums.
...	...
4-49. 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). Verify that handling and storage practices do not cause damage to the containers or cause them to leak.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-50. 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: - 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. 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.
...	...
4-51. 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: - 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 3 ft of aisle space is provided between rows of containers.
...	...
Container Storage Areas	
4-52. 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. (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.)
...	...
4-53. Containers holding ignitable or reactive waste must be located 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.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-54. 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 to look for leaking containers and signs of deterioration of containers.
...	...
Tank System Storage	
4-55. 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) and 40 CFR 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: - 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. (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.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-56. 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: - 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 hours (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. Verify that secondary containment for tanks includes one or more of the following: - 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.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-57. 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: - 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. Verify that vault systems meet the following criteria: - 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: - 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.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-58. Tank ancillary equipment at LQGs must also be provided with secondary containment (40 CFR 262.34(a)(1)(ii), 265.190(a), and 265.193 (f)).	Verify that ancillary equipment, except for the following, has secondary containment: - 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 - 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. (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.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-59. 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: - 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 facility develops a schedule and procedure for an assessment of the overall condition by an independent, qualified, registered, professional engineer. Verify that the facility maintains a record of the results of testing and assessments. 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. (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.)
...	...
4-60. 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 was installed according to specific standards (40 CFR 262.34 (a)(1)(ii) and 265.192).	Determine if the facility has any new tank systems. 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. Verify that the facility keeps on file the written assessments from the individuals required to certify the tank and supervise the installation of the tank.
...	...
4-61. 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. Verify that appropriate measures are taken to prevent overfill, including: - spill prevention controls - overfill prevention controls - maintenance of sufficient freeboard to prevent overtopping by wave, wind action or precipitation for uncovered tanks.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-62. 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: - 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 National Fire Protection Association's *Flammable and Combustible Liquids Code* are maintained. Verify that incompatible waste, or incompatible wastes and materials, are not placed in the same tank system unless minimum safety requirements are met. 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.
...	...
4-63. 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. Determine if the following inspections are conducted at least once a day: - 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. Verify that all sources of impressed current are inspected and/or tested every other month. Verify that inspections are documented.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-64. 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:
	- 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 form 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.
	
	Verify that a report is submitted within 30 days.
	
	(NOTE: Releases of 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.

...	...
4-65. 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 facility has closed any tank systems. Verify that all waste residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with waste have been removed or decontaminated. Verify that if it is not possible and/or practicable to remove or decontaminate all soils, the facility closes the tank and performs post-closure care as is required for landfills.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Containment Buildings	

4-66. 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:
	- 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.

...	...
4-67. 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: - 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.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

4-67. (continued)	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:
	
	- 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
	- 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/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 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 264.193(d)(1) (see checklist item 4-59)
	- it meets the requirements of 264.193(b) and 264.193(c)(1 - 2) (see checklist item 4-59.)

...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS:**
4-68. 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. Verify that the following operational procedures are done: - 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. Verify that there is a written description of procedures to ensure that waste does not remain in the building for more than 90 days. Verify that there is documentation that the waste does not remain for more than 90 days.
...	...
4-69. 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 registered professional engineer.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-70. 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. Verify that when a leak is discovered: - 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 registered professional engineer is also submitted.
...	...
4-71. 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. Verify that measures are taken to prevent the release of liquids or wet materials into areas without secondary containment. 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.
...	...
4-72. 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 facility has closed a containment building recently. 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. Verify that the containment building is closed in accordance with closure and post-closure requirements for TSDFs as outlined in the questions regarding ALL TSDFs - Documentation and ALL TSDFs - Closure. Verify that if it is found that not all contaminated subsoils can be practicably removed or decontaminated, the facility is closed and landfill postclosure requirements are implemented.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
TRANSPORTATION	
4-73. Transporters of hazardous waste that is required to be manifested must have an USEPA identification Number 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, and 263.22(a)).	(NOTE: These requirements do not apply to the onsite transportation of hazardous waste.) Determine if the facility transports hazardous waste offsite using their own vehicles or a contractor. Verify that the transporter has a USEPA identification numbers. Verify that all waste accepted for transport is accompanied by a manifest. Verify that prior to transport, the transporter signs and dates the manifest and returns a copy to the generator prior to leaving the facility. Verify that the transporter retains a copy of the manifest after delivery. Verify that manifests are kept on file for 3 yr. (NOTE: Special issues involved in the transportation of hazardous waste by rail or water are not addressed in this manual.)
...	...
4-74. Before transporting hazardous waste or offering hazardous waste for transportation offsite in the United States, the facility 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. Verify that containers are properly constructed and contain no leaks, corrosion, or bulges by inspecting a sample of containers awaiting transport. Examine endseams for minor weeping that indicates drum failure. Verify labeling and marking on each container is compatible with the manifests. 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: - "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.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-75. 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 clean-up action so that the discharge does not present a hazard. Verify that transporters give notice to the National Response Center and report in writing as required by 49 CFR 171.15 and 49 CFR 171.16.
...	...
4-76. The facility 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 facility. Determine if drivers are trained in spill control procedures. Determine if provisions have been made for securing wastes in vehicles when transporting.
...	...
4-77. 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 facility has a transfer facility. Verify the following: - 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 good management practice. (NOTE: Storage for more than 10 days will require a TSD permit.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

LAND DISPOSAL OF RESTRICTED WASTES
 	
4-78. Facilities 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:
	
	- 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
	- 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 *Clean Water Act* 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.)
	
	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-79. 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 then 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.
...	...
4-80. 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. (NOTE: Appendix 4-8 lists extract concentrations for the constituents of wastes F001 through F005 as a supplement to Appendix 4-7.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS:**
4-81. 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: - the USEPA hazardous waste number - treatment standards - the manifest number associated with the shipment - for hazardous debris, both the contaminants subject to treatment and the 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: - the USEPA hazardous waste number - 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: - the USEPA hazardous waste number - 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.)
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-82. 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. (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: - the plan is based on a detailed chemical and physical analysis of representative sample of the prohibited waste being treated - the plan is based on a detailed chemical and physical analysis of - 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.)
...	...
4-83. 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 facility is using generator knowledge to determine whether a waste meets LDR restriction, the supporting data used in making this determination is retained in the facility operating record. Verify that if the facility has determined whether a waste is restricted using appropriate test methods, the waste analysis data is retained. 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 installations files stating that the generated waste is excluded. 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. Verify that SQGs with tolling agreement retain the agreement and copies of notification and certification for at least three yr after the agreement expires.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-84. 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. 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: - USEPA hazardous waste number - 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. (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.)
...	...
4-85. 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. Verify that the facility is testing waste as specified in the facilities waste analysis plan.
...	...

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
4-86. 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: - 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 number - 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. 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.
...	...

4-87. 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:
	
	- the generator is storing the wastes in tanks, containers, or containment buildings onsite only for the purpose of accumulating enough quantity of 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.
	
	(NOTE: A TSDF may stored the land disposal restricted wastes for up to one yr if they can prove that the reason for storage is to accumulate such quantities of hazardous waste as are necessary to facilitate proper treatment and 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 *Special Pollutants Management*) and are removed from storage within one yr of the date it was first placed into storage.

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 Number	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 or 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, 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, trichloro-fluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures or 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 EPA 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 or 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)

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- t = toxic waste
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- 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 EPA 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 tetra-, 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 lengt' ranging from one to and including five, with varying amounts and positions of chlorine substitution.	(t)

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- 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 EPA 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 EPA hazardous waste Nos. F020, F021, F022, F023, F026 and F027.	(t)
F032	wastewaters (except those that have not come into 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)

* 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 EPA Hazardous Waste Number	Hazardous Waste	Hazard Code*
F034	wastewaters (except those that have 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 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 chromium. 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)
F037	petroleum refinery primary oil/water/solids separation sludge--Any sludge	(t)

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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 EPA Hazardous Waste Number	Hazardous Waste	Hazard Code*
F037 (cont)	generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineis. 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 non-contact 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 reamin 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 EPA 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 non-contact 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 reamin 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 EPA 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 reamin 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)

EPA 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

EPA 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

EPA 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 adsorbent 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

EPA 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

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 Number	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 Number	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 Number	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)

USEPA Hazardous Waste Number	Substance
U143	2-butenoic acid, 2-methyl-, 7-[(2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy)methyl]-2,3,5,7s-yrytshyfto-1-pyrrolizin-1-yl ester, [1S-[alpha(Z),7(2S,3R), 7aalpha]]-
U031	n-Butyl alcohol (i)
U136	cacodylic acid
U032	calcium chromate
U238	carbamic acid, ethyl ester
U178	carbamic acid, methylnitroso-ethyl ester
U097	carbamic chloride, dimethyl-
U114	carbamodithioic acid, 1,2-ethanediylbis-, salts and esters
U062	carbamothioic acid, bis(1-methylethyl)-S-(2,3-dichloro-2-propenyl) ester
U215	carbonic acid, dithallium(1+)salt
U033	carbonic difluoride
U156	carbonochlorodic acid, methyl ester (i,t)
U033	carbon oxyfluoride (r,t)
U211	carbon tetrachloride
U034	chloral
U035	chlorambucil
U036	chlordane, alpha and gamma isomers
U026	chlomaphazine
U037	chlorobenzene
U039	p-chloro-m-cresol
U041	1-chloro-2,3-epoxypropane
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

USEPA Hazardous Waste Number	Substance
U197	2,5-cyclohexadiene-1, 4-dione
U056	cyclohexane (i)
U129	cyclohexane 1,2,3,4,5,6-hexachloro-, (1alpha, 2alpha, 3beta, 4alpha 6beta
U057	cyclob anone (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

USEPA Hazardous Waste Number	Substance
U099	1,2-dimethylhydrazine
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

USEPA Hazardous Waste Number	Substance
U115	ethylene oxide (i,t)
U116	ethylenethiourea
U076	ethylidene dichloride
U118	ethyl methacrylate
U119	ethyl methanesulfonate
U120	fluoranthene
U122	formaldehyde
U123	formic acid (c,t)
U124	furan (i)
U125	2-furancarboxaldehyde (i)
U147	2,5-furandione
U213	furan, tetrahydro- (i)
U125	furfural (i)
U124	furfuran (i)
U206	glucopyranose, 2-deoxy-2 (3-methyl-3-nitrosoureido)-
U126	glycidylaldehyde
U163	guanidine, N-methyl-N'-nitro- N-nitroso-
U127	hexachlorobenzene
U128	hexachlorobutadiene
U130	hexachlorocyclopentadiene
U131	hexachloroethane
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

USEPA Hazardous Waste Number	Substance
U148	maleic hydrazide
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-

USEPA Hazardous Waste Number	Substance
U167	1-naphthalenamine
U168	2-naphthalenamine
U026	naphthalenamine, N,N'-bis (2-chloroethyl)-
U165	naphthalene
U047	naphthalene, 2-chloro-
U166	1,4-naphthalenedione
U236	2,7-naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-bis(azo)bis(5-amino-4-hydroxy)-, tetrasodium salt
U166	1,4-Naphthoquinone
U167	alpha-naphthylamine
U168	beta-naphthylamine
U217	nitric acid, thallium(1+) salt (2-chloromethyl)-
U169	nitrobenzene (i,t)
U170	p-nitrophenol
U171	2-nitropropane (i)
U172	n-nitrosodi-n-butylamine
U173	n-nitrosodiethanolamine
U174	n-nitrosodiethylamine
U176	n-nitroso-n-ethylurea
U177	n-nitroso-n-methylurea
U178	n-nitroso-n-methylurethane
U179	n-nitrosopiperidine
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-

USEPA Hazardous Waste Number	Substance
U089	phenol, 4,4'-(1,2-diethyl-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)

USEPA Hazardous Waste Number	Substance
U083	propylene dichloride
U148	3,6-pyridazinedione, 1,2-dihydro-
U196	pyridine
U191	pyridine, 2-methyl-
U237	2,4(1H,3H)-pyrimidinedione, 5-[bis(2-chloroethyl)amino]-
U164	4(1H)-pyrimidinone, 2,3-dihydro-6-methyl 2-thioxo-
U180	pyrrolidine, 1-nitroso--
U200	reserpine
U201	resorcinol
U202	saccharin and salts
U203	safrole
U204	selenious acid
U204	selenium dioxide
U205	selenium sulfide
U205	selenium sulfide SeS2 (r,t)
U015	l-serine, diazoacetate (ester)
see F027	silvex (2,4,5-tp)
U206	streptozotocin
U103	sulfuric acid, dimethyl ester
U189	sulfur phosphide (r)
U232	2,4,5-T
U207	1,2,4,5-tetrachlorobenzene
U208	1,1,1,2-tetrachloroethane
U209	1,1,2,2-tetrachloroethane
U210	tetrachloroethylene
see F027	2,3,4,6-tetrachlorophenol
U213	tetrahydrofuran (i)
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

USEPA Hazardous Waste Number	Substance
U228	trichloroethylene
U121	trichloromonofluoromethane
U230	2,4,5-trichlorophenol
U231	2,4,6-trichlorophenol
U234	1,3,5-trinitrobenzene (r,t)
U182	1,3,5-trioxane, 2,4,6-trimethyl-
U235	tris(2,3-dibromopropyl)phosphate
U236	trypan blue
U237	uracil mustard
U176	urea, n-ethyl-n-nitroso-
U177	urea, n-methyl-n-nitroso-
U043	vinyl chloride
U248	Warfarin, when present at concentrations of .3% or less
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, page 11804.

Appendix 4-4

Land Disposal Restricted Wastes and Their Effective Dates (40 CFR 268, Appendix VII)

40 CFR 268, Appendix II

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

Waste Code	Waste Category	Effective Date
F002	SQGs, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids. F002!All others!8 November 1986 F003!T{ 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

Waste Code	Waste Category	Effective Date
K002	All	8 August 1990
K003	All	8 August 1990
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

Waste Code	Waste Category	Effective Date
K038	All	8 June 1989
K039	All	8 June 1989
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

Waste Code	Waste Category	Effective Date
K101 (organics)	Wastewater	8 August 1988
K101 (metals)	Wastewater	8 August 1990
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

Waste Code	Waste Category	Effective Date
P016	All	8 August 1990
P017	All	8 August 1990
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

Waste Code	Waste Category	Effective Date
P072	All	8 August 1990
P073	All	8 August 1990
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

Waste Code	Waste Category	Effective Date
U007	All	8 August 1990
U008	All	8 August 1990
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

Waste Code	Waste Category	Effective Date
U061	All	8 August 1990
U062	All	8 August 1990
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

Waste Code	Waste Category	Effective Date
U114	All	8 August 1990
U115	All	8 August 1990
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

Waste Code	Waste Category	Effective Date
U164	All	8 August 1990
U165	All	8 August 1990
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

Waste Code	Waste Category	Effective Date
U219	All	8 August 1990
U220	All	8 August 1990
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

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(I) salt
P109	Tetraethyldithiopyrophosphate
P110	Tetraethyl lead
P111	Tetraethylpyrophosphate
P112	Tetranitromethane (r)
P062	Tetraphosphoric acid, hexaethyl ester
P113	Thallic oxide
P113	Thallium(III) oxide
P114	Thallium(I) selenite
P115	Thallium(I) 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	Acid sludge
Alkaline caustic liquids	Acid and water
Alkaline cleaner	Battery acid
Alkaline corrosive liquids	Chemical cleaners
Alkaline corrosive battery acid	Electrolyte, acid
Caustic wastewater	Etching acid liquid or solvent
Lime sludge and other corrosive alkalies	Pickling liquor and other corrosive acids
Lime wastewater	Spent acid
Lime and water	Spent mixed acid
Spent caustic	Spent sulfuric acid

Potential Consequences: Heat generation, violent reaction.

Group 2-A	Group 2-B
Aluminum	Any waste in Group 1-A or 1-B
Beryllium	
Calcium	
Lithium	
Magnesium	
Potassium	
Sodium	
Zinc powder	
Other reactive metals and metal hydrides	

Potential Consequences: Fire or 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, or 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, or 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.

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, or 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 CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (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 numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (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 numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (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-)	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 numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (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 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- (CAS 53-96-3) 0.059 (2)	140 (1)	
Acetylaminofluorene (CAS 107-02-8)	0.29 (2)	NA
Acrolein (CAS 107-13-1)	0.24 (2)	84 (1)
Acrylontrile (CAS 309-00-2)	0.021 (2)	0.066 (1)
Aldrin		
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)
4-Bromophenyl phenyl ether (CAS 101-55-3)	0.055 (2)	15 (1)

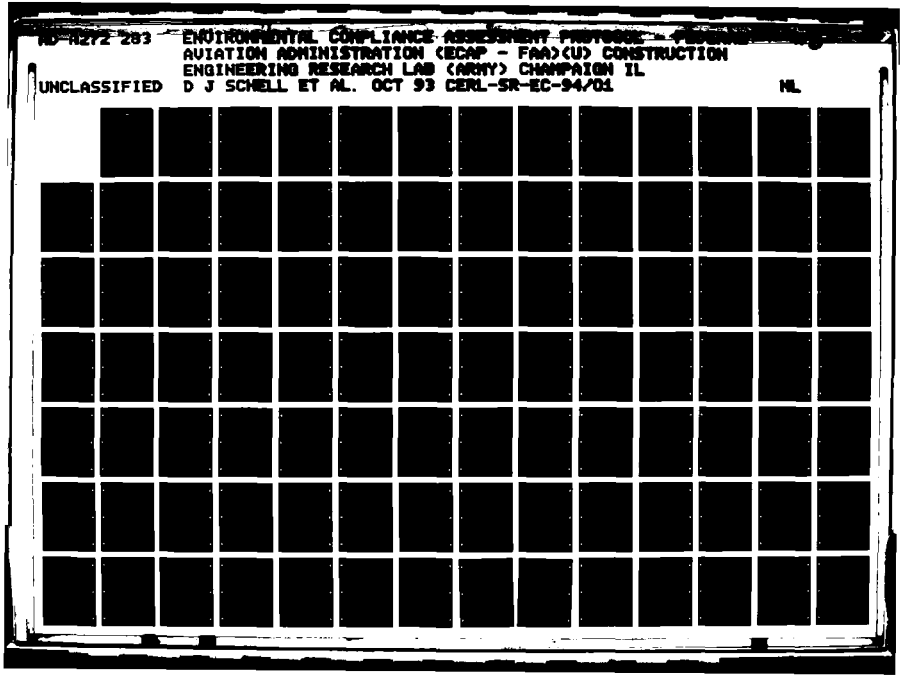
Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
n-Butyl alcohol (CAS 71-36-3)	5.6 (2)	2.6 (1)
Butyl benzyl phthalate (CAS 85-68-7)	0.017 (2)	7.9 (1)
2-sec-Butyl-4,6-dinitrophenol (CAS 88-85-7).	0.066 (2)	2.5 (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)
2,6-Dichlorophenol (CAS 87-65-0)	0.044 (2)	14 (1)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
1,2-Dichloropropane	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)
Isodrin (CAS 465-73-6)	0.021 (2)	0.066 (1)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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)	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)
Tetrachlorodibenzo-furans	0.000063 (2)	0.001 (1)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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 (CAS 85-01-8)	0.031 (1)	1.5 (1)
Pyrene (CAS 129-99-0)	0.028 (1)	1.5 (1)
Toluene (CAS 108-88-3)	0.028 (1)	28 (1)
Xylenes (total)	0.032 (1)	33 (1)
Lead (CAS 7439-92-1)	0.037	NA

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
K002*, K003*, and K004*		
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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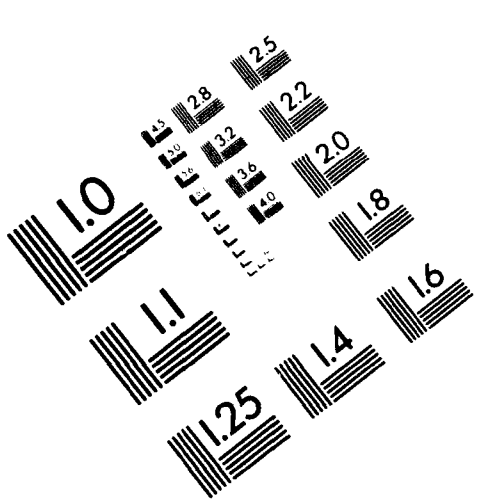

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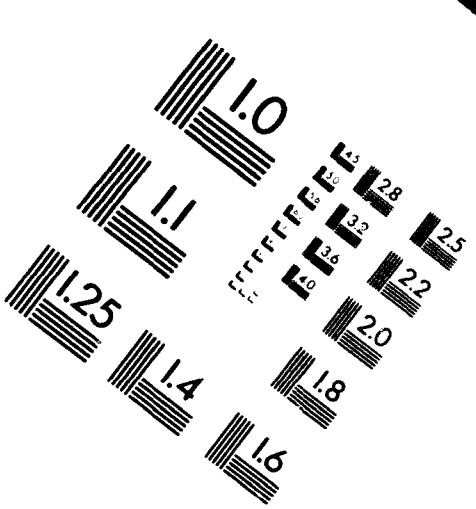

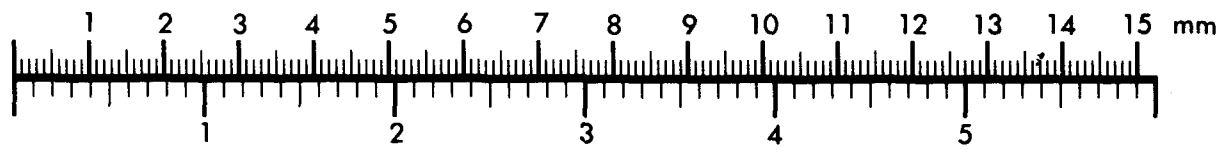

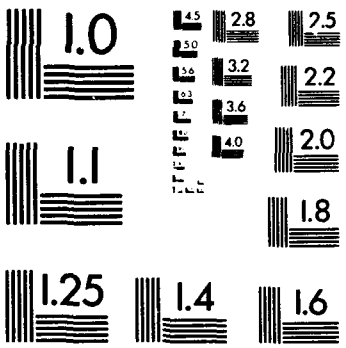

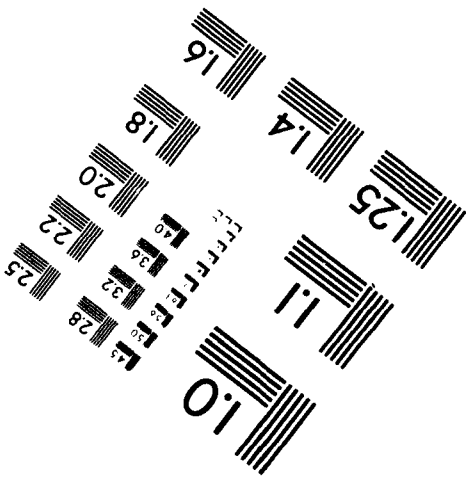

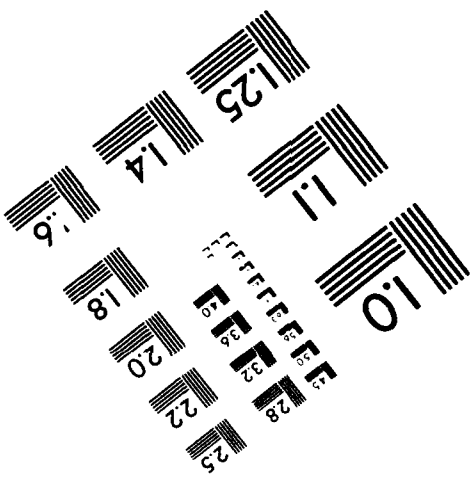

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Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
K016		
Hexachlorobenzene (CAS 118-74-1)	0.033 (1)	28 (1)
Hexachlorobutadiene (CAS 87-68-3)	0.007 (1)	5.6 (1)
Hexachlorocyclopentadiene (CAS 77-47-4). 0.007 (1)	5.6 (1)	
Hexachloroethane (CAS 67-72-1)	0.033 (1)	28 (1)
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)
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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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)
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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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)
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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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 (CAS 100-41-4)	0.011 (1)	14 (1)
Fluorene (CAS 86-73-7)	0.005 (1)	NA
Naphthalene (CAS 91-20-3)	0.033 (1)	42 (1)
Phenanthrene (CAS 85-01-8)	0.039 (1)	34 (1)
Phenol (CAS 108-95-2)	0.047 (1)	3.6 (1)
Pyrene (CAS 129-00-0)	0.045 (1)	36 (1)
Toluene (CAS 108-88-3)	0.011 (1)	14 (1)
Xylene(s)	0.011 (1)	22 (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
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 5-32-8)	0.047 (1)	12 (1)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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 (CAS 100-41-4)	0.011 (1)	14 (1)
Naphthalene (CAS 91-20-3)	0.033 (1)	42 (1)
Phenanthrene (CAS 85-01-8)	0.039 (1)	34 (1)
Phenol (CAS 108-95-2)	0.047 (1)	3.6 (1)
Pyrene (CAS 129-00-0)	0.045 (1)	36 (1)
Toluene (CAS 108-88-3)	0.011 (1)	14 (1)
Xylene(s)	0.011 (1)	22 (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 (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 (CAS 117-81-7)	0.047 (1)	12 (1)
Bis(2-ethylhexyl)phthalate (CAS 75-15-0)	0.043 (1)	7.3 (1)
Chrysene (CAS 2218-01-09)		
Di-n-butyl phthalate (CAS 105-67-9)	0.06 (1)	3.6 (1)
Ethylbenzene (CAS 100-41-4)		
Fluorence (CAS 86-73-7)	0.011 (1)	14 (1)
Naphthalene (CAS 91-20-3)	0.05 (1)	
Phenanthrene (CAS 85-01-8)	0.033 (1)	42 (1)
Phenol (CAS 108-95-2)	0.039 (1)	34 (1)
Pyrene (CAS 129-00-0)	0.047 (1)	3.6 (1)
Toluene (CAS 108-88-3)	0.045 (1)	36 (1)
Xylene(s)	0.011 (1)	14 (1)
Cyanides(total) (CAS 57-12-5)	0.011 (1)	22 (1)
Chromium(total) (CAS 7440-47-32)	0.028 (1)	1.8 (1)
Lead (CAS 7439-92-1)	0.2	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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
p-Cresol (CAS 106-44-5)	0.011 (1)	6.2 (1)
2,4-Dimethylphenol (CAS 105-67-9)	0.033 (1)	NA
Ethylbenzene (CAS 100-41-4)	0.011 (1)	14 (1)
Naphthalene (CAS 91-20-3)	0.033 (1)	42 (1)
Phenanthrene (CAS 85-01-8)	0.039 (1)	34 (1)
Phenol (CAS 108-95-2)	0.047 (1)	3.6 (1)
Toluene (CAS 108-88-3)	0.011 (1)	14 (1)
Xylenes	0.011 (1)	22 (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
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)
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

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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	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)
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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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 (CAS 91-20-3)	0.028 (1)	3.4 (1)
Phenanthrene (CAS 85-01-8)	0.028 (10	3.4 (1)
Toluene (CAS 85-01-8)	0.008 (1)	0.65 (1)
Xylenes	0.014 (1)	0.07 (1)
Lead (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)
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	6.0 (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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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
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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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)		
Arsenic (CAS 7440-38-2)	0.79	NA
P013* (Barium cyanide)		
Cyanides (Total)	1.9	110
Cyanides (Amenable)	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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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)
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

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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*** (Phenyimercury acetate)		
Mercury (CAS 7439-97-6)	0.030	NA
P094		
Phorate (CAS 298-02-2)	0.025	0.1 (1)
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

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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
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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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)	
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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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)
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 (CAS 85-01-8)	0.031	1.5 (1)
Pyrene (CAS 129-00-0)	0.028	1.5 (1)
Toluene (CAS 108-88-3)	0.028	28 (1)
Xylenes (Total)	0.032	33 (1)
Lead (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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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)
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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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
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 (20	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)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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)
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

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
U151*** Mercury (CAS 7439-97-6)	0.030	NA
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 numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (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 1,1,2,2-Tetrachloroethane (CAS 79-34-5)	0.057 (2)	42 (1)
U210 Tetrachloroethylene (CAS 127-18-4)	0.056 (2)	5.6 (1)

Waste Codes Regulated Hazardous Constituent with applicable CAS numbers	Concentrations Wastewaters (mg/L) Notes	 Non-wastewaters (mg/kg) Notes
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	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
U247 Methoxyxhlor (CAS 72-43-5)	0.25 (2)	0.18 (1)

*See also Table CCWE in 40 CFR 268.41

**See also Table 2 in 40 CFR 268.42

***See also Table CCWE in 40 CFR 268.41 and Table 2 in 40 CFR 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 CFR 264 Subpart O or 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 CFR 268.7.
2. Based on analysis of composite samples.
3. As analyzed using SW-846 Method 9010 or 9012; sample size 10 gram; distillation time: 1 h and 15 minutes (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/L) 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% total organic carbon (TOC).

c Wastewaters that contain > 1% TOC solvent-containing solids, solvent-containing sludges, and solvent-contaminated soils.

INSTALLATION:	COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT Federal Aviation Administration	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

Section 5

Natural Resources Management

Section 5

NATURAL RESOURCES MANAGEMENT

A. Applicability

This section applies to all FAA Southern Region Airways facilities. This section integrates the requirements of regulations pertaining to the protection of natural resources and endangered and threatened species into a single document.

B. Federal Regulations

- *The National Environmental Policy Act (NEPA) of 1970.* The purpose of this Act, 42 U.S. Code (USC) 4321-4370c, as last amended in November 1990 was to to declare a national policy which will encourage productive and enjoyable harmony between man and his environment. Additional it provides for the promotion of efforts which will 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 is 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)).

- *Endangered Species Act (ESA) of 1973.* The purpose of this Act, (16 USC 1531-1547, et al, last amended in October, 1988), is to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions for protection of endangered species (16 USC 1531(b)).

  Under ESA, the policy of Congress is that all Federal departments and agencies must seek to conserve endangered species and threatened species and must use their authorities in furtherance of the purposes of this Act. Further, Federal agencies must cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered species (16 USC 1531(c)).

- *Wild and Scenic Rivers Act of 1986.* This Act, (16 USC 1271-1287, last amended in May 1991), outlines the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, must be preserved in free-flowing condition, and that they and their immediate environments must be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and fulfill other vital national conservation purposes (16 USC 1271).

  The purpose of this Act is to implement the declared policy of Congress by instituting a national wild and scenic rivers system, by designing the initial components of that system, and by prescribing the methods by which and standards to which additional components may be added to the system from time to time (16 USC 1272).

- *Farmland Protection Policy Act of 1981.* Within this Act, (7 USC 4201-4209, last amended in December 1991), Congress declares that:
  - Federal actions, in many cases, result in the conversion of farmland to nonagricultural uses where alternative actions would be preferred
  - the Department of Agriculture is the agency primarily responsible for the implementation of Federal policy with respect to U.S. farmland, assuring the maintenance of the agricultural production capacity of the United States
  - the Department of Agriculture and other Federal agences should take steps to assure that the actions of the Federal government do not cause U.S. farmland to be irreversibly converted to nonagricultural uses in cases in which other national interests do not override the importance of the protection of farmland nor otherwise outweigh the benefits of maintaining farmland resources (7 USC 4201(a)).

  The purpose of this Act is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland (7 USC 4201(b)).

- *The Fish and Wildlife Coordination Act of 1946.* This Act, last amended in July 1965, 16 USC 666c, is the Federal legislation which coordinates programs and activities regarding the conservation and rehabilitation of fish and wildlife in the United States. For the purpose of conserving and rehabilitating fish and wildlife resources, the Secretary of the Interior is authorized to:
    1. provide assistance to, and cooperate with, Federal, state, and public or private agencies and organizations in the development, protection, rearing, and stocking of all species of wildlife, resources, and their habitat, in controlling loses of the same from disease or other causes, in minimizing damages from overabundant species, in providing public shooting and fishing areas, including easements across public lands for access to, and in carrying out other measures necessary to effectuate the purposes of this Act
    2. make surveys and investigations of the wildlife of the public domain, including lands and waters or interests acquired or controlled by any Federal agency
    3. accept donations of land and contributions of funds in furtherance of the purposes of this Act (16 USC 661).

Unless provided for otherwise, whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license, such department or agency first must consult with the U.S. Fish and Wildlife Service, Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular state where the impoundment, diversion, or other control facility is to be constructed, with a view to the conservation of wildlife resources by preventing loss of and damage to such resources as well as providing for the development and improvement thereof in connection with such water resource development (16 USC 662(a)).

Federal agencies authorized to construct or operate water-control projects are authorized to modify or add to the structures and operations of such projects, the construction of which has not been substantially completed on the date of enactment of this Act, and to acquire lands in accordance with this Act, in order to accommodate the means and measures for such conservation of wildlife resources as an integral part of such projects: Provided, that for projects authorized by a specific Act of Congress before the date of enactment of this Act, such modification or land acquisition must be compatible with the purposes for which the project was authorized (16 USC 662(c)).

The Act requires that any report submitted to Congress by a Federal agency in support of a recommendation for authorization of any new project for the control or use of water (including any new division of such project or new supplemental works on such project) must include an estimation of the wildlife benefits or losses to be derived from such, including benefits to be derived from measures recommended specifically for the development and improvement of wildlife resources, the cost of providing wildlife benefits, the part of the cost of joint-use facilities allocated to wildlife, and the part of such costs, if any, to be reimbursed by non-Federal interests (16 USC 662(f)).

Unless exempted, whenever the waters of any stream or other body of water are impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, adequate provision must be made for the use, together with any areas of land, water, or interests therein, acquired or administered by a Federal agency in connection with, for the conservation, maintenance, and management of wildlife resources thereof, and its habitat thereon, including the development and improvement of such wildlife resources under section 662 of this Act (16 USC 663(a)). The use of such waters, land, or interests therein for wildlife conservation purposes must be in accordance with general plans approved jointly by the:

1. head of the particular agency exercising primary administration in each instance
2. Secretary of the Interior
3. head of the agency exercising the administration of the wildlife resources of the particular state where the waters and ares lie (16 USC 663(b)).

- *The Migratory Bird Treaty Act of 1918.* This Act, last amended in December 1989, 16 USC 703-711, is a Federal law which enforces international conventions for the protection of migratory birds and game animals to which the U.S. is a party. Unless permitted by regulations, it is unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or in part, of any such bird or any part, nest, or egg thereof, included in the terms of the conventions for the protection and conservation of migratory birds and game mammals between the United States and the USSR, the United States and Mexico, and the United States and Japan (16 USC 703).

Under the Act, it is also unlawful to ship, transport, or carry, by any means whatever, from one state, territory, or district to or through another state, territory, or district, or to or through a foreign country, any bird, or any part, nest, or egg thereof, captured, killed, taken, shipped, transported, or carried at any time contrary to the laws of the state, territory, or district in which it was captured, killed, or taken, or from which it was shipped, transported, or carried (16 USC 705).

- *The Executive Order (EO) 11990.* This Order, The Protection of Wetlands, 24 May 1977, 42 F.R. 26961, as amended by EO 12608, 9 September 1987, 52 F.R. 34617, is a presidential order which implements the National Environmental Policy Act of 1969. Under this EO each Federal agency must provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for
  1. acquiring, managing, and disposing of Federal lands and facilities
  2. providing Federally undertaken, financed, or assisted construction and improvements
  3. conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities (Section 1(a)).

  Each agency, to the extent permitted by law, must avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that:
  1. there is no practical alternative to such construction
  2. the proposed action includes all practical measures to minimize harm to wetlands which may result from such use.

  In making this finding the head of the agency may take into account economic, environmental and other pertinent factors (Section 2(a)).

  Each agency must also provide opportunity for early public review of any plans or proposals for new construction in wetlands (Section 2(b)).

- *The Convention on Wetlands of International Importance Especially as Waterfowl Habitat.* This Convention was created on 2 February 1971, in Ramsar, amended by Paris Protocol of 12 March 1982, and entered into force for the United States on 18 December 1986. Those countries which are Contracting Parties to the convention agreed that:
  - wetlands constitute a resource of great economic, cultural, scientific and recreational value, the loss of which would be irreparable
  - the encroachment on and loss of wetlands now and in the future should be stemmed

- waterfowl in their seasonal migration should be regarded as an international resource
- conservation of wetlands and their flora and fauna can be ensured by combining farsighted national policies with coordinated international action.

Each country must designate suitable wetlands within its territory for inclusion in a *List of Wetlands of International Importance* (hereafter "the List") which is maintained by the bureau established under this Convention. The boundaries of each wetland must be precisely described and also delimited on a map and they may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than 6 meters (m) at low tide lying within the wetlands, especially where these have importance as waterfowl habitat (Article 2, paragraph 1).

Each country must promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening (Article 4, paragraph 1).

The contracting countries must promote the training of personnel competent in the fields of wetland research, management and wardening (Article 4, paragraph 4).

- *The EO 11988. This EO, Floodplain Management*, 24 May 1977, 42 F.R. 26951, as amended by EO 12148, 20 July 1979, 44 F.R. 43239, is a presidential order which implements the Environmental Policy Act of 1969, the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973.

  Each agency must provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for:

  1. acquiring, managing, and disposing of Federal lands and facilities
  2. providing Federally undertaken, financed, or assisted construction and improvements
  3. conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities (Section 1).

Each agency must evaluate the potential effects of any actions it may take in a floodplain in order to

- ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management
- prescribe procedures to implement the policies and requirements of this Order.

Each agency must take floodplain management into account when formulating or evaluating any water and land use plans, and must require land and water resources use appropriate to the degree of hazard involved. Agencies must include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the license, permits, loan or grants-in-aid programs that they administer (Section 2(c)).

Agencies responsible for Federal real property and facilities must take the following additional actions:

1. The regulations and procedures established under Section 2(d) of this Order require, at a minimum, the construction of Federal structures and facilities to be consistent with standards, criteria, and the intent of those issued under the National Flood Insurance Program. They may deviate only to the extent that the standards of the Flood Insurance Program are demonstrably inappropriate for a given type of structure or facility.
2. If, after compliance with the requirements of this Order, new construction of structures or facilities are to be located in a floodplain, accepted flood-proofing and other flood protection measures must be applied to new construction or rehabilitation. To achieve flood protection, agencies must, wherever practicable, elevate structures above the base flood level rather than filling in land (Section 3(a)(b)).

- *The Coastal Zone Management Act of 1972.* This Act, lasted amended in November 1990, 16 USC 1451-1464, is the Federal legislation which governs the preservation and management of coastal waters in the nation. In relation to coastal zones, the national policy is to:
  1. preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations
  2. encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic, and aesthetic values as well as the needs for compatible economic development

3. encourage the preparation of special area management plans which provide for increased specificity in protecting significant natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, including those areas likely to be affected by land subsidence, sea level rise, or fluctuating water levels of the Great Lakes, and improved predictability in governmental decision-making
4. encourage the participation and cooperation of the public, state and local governments, and interestate and other regional agencies, as well as of the Federal agencies having programs affecting the coastal zone, in carrying out the purposes of this Act
5. encourage coordination and cooperation with and among the appropriate Federal, state, and local agencies, and international organizations where appropriate, in collection, analysis, synthesis, and dissemination of coastal management information, research results, and technical assistance, to support state and Federal regulation of land use practices affecting the coastal land ocean resources of the United States
6. respond to changing circumstances affecting the coastal environment and coastal resource mangement by encouraging states to consider such issues as ocean uses potentially affecting the coastal zone (16 USC 1452).

- *The Federal Noxious Weed Act of 1970.* This Act, last amended in September 1988, 7 USC 2803 and 2809, states that no person is permitted to move any noxious weed identified in a regulation into or through the United States or interestate, unless such movement is:
    1. from Canada, or authorized under general or specific permit from the Secretary [of Agriculture]
    2. made in accordance with such conditions as the Secretary may prescribe in a permit and in regulations to prevent the dissemination into the U.S., or interstate, of such noxious weeds (42 USC 2803).

- Public Law 86 -717 requires that projects be developed and maintained to encourage, promote, and assure adequate and dependable future resources, including supplies of forest products. The forest lands will be administered to increase the value of project lands for recreation and wildlife, and to promote ecological conditions by following accepted conservation practices.

- Section 404 of the *Clean Water Act (CWA)* (33 USC 1344) requires that all discharges of dredged and fill material in the waters of the United States, including wetlands, must meet the requirements of USEPA's 404(b)(1) guidelines (40 CFR 230) and obtain water quality certification from the state (33 USC 1341) unless exempted by Congress through implementation of Section 404(r).

C. State/Local Regulations

States develop lists for their local endangered species in addition to the Federal lists.

States develop regulations and good management practices (GMPs) for the protection of surface waters, coastal zones, wetlands, and the prevention of non-point source pollution. States also establish regulations governing hunting and fishing activities.

D. FAA Regulations/Requirements

- None at this time.

E. Key Compliance Requirements

- EA/EIS - Management actions that will significantly impact the quality of the human environment may require an Environmental Impact Statement (EIS) or an Environmental Assessment (EA).

- Cooperative Agreements - Facilities will maintain liaison with agencies through cooperative agreements. These agreements assist in developing and implementing well coordinated, multiple-use natural resources programs.

- Endangered Species - The Department of the Interior officially designates the Federal list of endangered species of those species that he determines to be in danger of extinction throughout all or a significant portion of its range.

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

- *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 (50 CFR 402.02):
    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, or grants-in-aid
4. actions directly or indirectly causing modifications to the land, water, or air.

- *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 threatened or endangered species (50 CFR 404.02).

- *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 considerations or protection. Specific areas outside 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 a 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 Department of Interior (50 CFR 81.1).

- *Environmental Assessment* - 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 environmental impact statment or a finding of no significant impact (40 CFR 1508.9).

- *EIS (Environmental Impact Statement)* - a detailed statement by the responsible official on (40 CFR 1508.11):
    1. the environmental impact of the proposed action
    2. any adverse environmental effects which cannot be avoided should the proposal be implemented
    3. alternatives to the proposed action
    4. the relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity, and
    5. any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

- *FNSI (Finding of No Significant Impact)* - a document that briefly presents the reasons why an action, not otherwise excluded, does not need an EIS (40 CFR 1508.13).

- *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 reproduction, numbers, or distribution of that species (50 CFR 402.02).

- *NOI (Notice Of Intent)* - means a notice that an EIS will be prepared and considered. It should contain (40 CFR 1508.22):
    1. a description of the proposed action and possible alternatives
    2. the proposed scoping process and schedule
    3. the name and address of the person who can give more information.

- *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 Department of Interior (50 CFR 81.21).

NATURAL RESOURCES MANAGEMENT PROTOCOL

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:
All Facilities	5-1 through 5-4
Land Management	
General	5-5 through 5-7
Floodplains/Wetlands	5-8 and 5-9
Endangered/Threatened Species	5-10 and 5-11
Migratory Birds	5-12
Environmental Impacts	5-13 through 5-25

NATURAL RESOURCES MANAGEMENT

Records to Review

- Environmental Impact Documentation
- Fish and Wildlife Cooperative Agreement
- Forest Management Plan
- Grounds Maintenance Contracts
- Agricultural and Grazing Lease Contracts

Physical Features to Inspect

- Construction sites (erosion control, runoff, sedimentation, and landscaping)
- Facilities constructed in the past 2 years (yr) (erosion and landscaping)
- Wildlife habitat and land and water resources (condition and management)
- Equipment which could damage wildlife, its habitat, or land and water resources (use and control)
- Grounds Maintenance areas (beautification and 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)
- Shorelines

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
5-1. Determine actions or changes since previous review of natural resources management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report.
...	...
5-2. Copies of all relevant Federal, FAA, state, and local regulations and guidance documents on natural resources management should be available at the facility (GMP).	Verify that copies of the following regulations are available and kept current: - EO 12088, *Federal Compliance With Pollution Control Standards.* - 7 CFR 658, *Farmland Protection Policy Act.* - 40 CFR 1500-1508, *Council on Environmental Quality.* - 50 CFR 17, *Endangered and Threatened Wildlife and Plants.* - 50 CFR 402, *Interagency Cooperation-Endangered Species Act 1978, as amended.* - State and local regulations.
...	...
5-3. Facilities are required to abide by state and local regulations (EO 12088, Section 1-1).	Verify that the facility is abiding by state and local requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (NOTE: Issues typically regulated by state and local agencies include: - endangered and threatened species lists - hunting and trapping restrictions - erosion control requirements - wetlands management - floodplains designation and management - wild and scenic rivers - coastal zones management.)
...	...
5-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning natural resources have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
LAND MANAGEMENT	
General	
5-5. A protective vegetative cover or other measures should be provided to control dust and erosion damage to land. (GMP).	Determine if the facility has been surveyed to locate areas where bare soil is exposed and current or potential erosion requires correction. Determine if there is an erosion problem at shorelines. Verify that remedial actions have been initiated.
...	...
5-6. 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 facility is not moving noxious without a permit. (NOTE: A list of noxious weeds is in Appendix 5-1.)
...	...
5-7. A survey of past actions and activities at the facility, as well as current natural resources, should be done and appropriate sampling and testing initiated to identify potentially contaminated sites (GMP).	Determine if the facility has had previous spills or actions occur that could lead to possible facility contamination. Verify that actions have been taken to ascertain the extent of contamination.
...	...
Floodplains/Wetlands	
5-8. Floodplains and wetlands should be identified and protected (GMP).	Verify that floodplains and wetlands are identified and protected by reviewing the Operational Management Plan (OMP). Verify that activities in floodplains are conducted in accordance with the National Permit. Verify that proper permits are obtained for activities in floodplains.
...	...

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-9. Department of the Army 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 facility has wetlands. Verify that any activities involving dredging and filling wetlands are permitted by the Army Corps of Engineers. (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.)
...	...
ENDANGERED/ THREATENED SPECIES	
5-10. Facilities with federally designated endangered and threatened species must carry out programs for their conservation (50 CFR 402.01(a), 402.10, and 402.12).	Verify that a survey has been done to determine if the facility has any threatened or endangered species and is reflected in the OMP or equivalent management plans. Verify that consultations have been held with U.S. Fish and Wildlife Service (FWS) and state conservation agency. Verify that measures have been initiated to maintain threatened and endangered species by checking records of FWS consultations/opinions received. Verify that action has been taken to comply with FWS requirements if a jeopardy biological opinion has been given.
...	...
5-11. All facilities must review proposed actions and activities to ensure that they are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat (50 CFR 402.01(a) and 40 CFR 1500).	Verify that the following documents are considered in the review process: - 40 CFR 1500-1508, *Council on Environmental Quality.* - 50 CFR 17, *Endangered and Threatened Wildlife and Plants.* - 50 CFR 402, *Interagency Cooperation-Endangered Species Act 1973, as amended.* - 50 CFR 450, *Endangered Species Exemption Process: General Provisions.* - 50 CFR 451, *Endangered Species Exemption Process: Application Procedures.*
...	...

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
MIGRATORY BIRDS	
5-12. 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 facility is on a migratory bird path. Verify that prior to killing birds for any reason, it is determined whether they are migratory birds. Verify that if actions are taken with regard to migratory birds, the facility has a permit to do so. (NOTE: Exemptions from the permit requirement are available for the following: - captive-reared and properly marked mallard ducks - captive-reared and properly marked migratory waterfowl.)
...	...
ENVIRONMENTAL IMPACTS	
5-13. 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. Verify that early cooperative consultation among agencies is also a part of new project development. Verify that the facility identifies environmental effects and values in adequate detail so they can be compared to economic and technical analysis. 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.
...	...
5-14. An EA must be produced, under certain circumstances, to determine if an EIS is necessary (40 CFR 1501.1(b) and 1508.9).	Determine if an EA has been completed and submitted to the Director for review before any contract for action is entered into or action is begun unless: - the action normally requires an EIS - the action does not normally require an EIS or an EA (a categorical exclusion). Verify that the assessment was prepared according to agency policies. (NOTE: Title 40 CFR 1501.3 states that Agencies will adopt procedures to indicate when an EA is required to be done.)
...	...

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-15. 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 that normally requires an environmental impact statement including: - the adoption of new Agency programs or regulations - technological developments - broad actions - the EA indicates it is necessary. (NOTE: Federal Agencies are required to develop policies indicating what types of actions require an EIS.)
...	...
5-16. 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) and 1508.13).	Verify that FNSIs include the following information: - 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. 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: - the proposed action is, or is closely similar to, one which normally requires the preparation of an EIS by the Agency - the nature of the proposed action is without precedence.
...	...
5-17. 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 an EIS the includes Agencies other than their own. Determine who the lead agency is. (NOTE: Federal, state, or 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 Federal agency and which are the cooperating agencies. Verify that if the facility is a lead agency it: - requests the participation of each cooperating agency in the NEPA process at the earliest possible time - uses 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.
...	...

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-18. 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. 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. Verify that for projects directly undertaken by a Federal Agency, the EIS is prepared at the feasibility analysis stage. Verify that a preliminary draft is prepared from the "scoping" procedure with the following format: - 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: adequately summarizes the statement, stressing major conclusions, areas of controversy, and issues to be resolved - table of contents - purpose of and need for action: briefly specifies the underlying purpose and need to which the facility is responding in proposing the alternatives, including the proposed action - alternatives including the proposed action: explores and objectively evaluates all reasonable alternatives, identifies preferred alternative, and explains reasoning - affected environment: describes the area(s) to be affected or created by the alternatives under consideration - 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.
...	...

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-19. 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: - invited 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 Agency regulations - 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 environmental assessments and other environmental impact statements 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.
...	...

5-20. Public involvement is a required part of the EIS process (40 CFR 1506.6).	Verify that the Agency made a diligent effort to involve the public including:
	- 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.

...	...

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-21. *After* the preparation of the draft EIS, the Agency 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. Verify that prior to preparing the final EIS, comments were requested from the following: - 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. Verify that comments were requested from the public.
...	...
5-22. 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: - 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.
...	...
5-23. 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: - 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 Council on Environmental Quality (CEQ).
...	...

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
5-24. At the time of a decision, Agencies are required to prepare a concise public record of decision (40 CFR 1505.2).	Verify that the record states what the decision was and: - 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.
...	...
5-25. When implementing the decision, the Agency 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. Verify that appropriate conditions are included in grants, permits, or other approvals. Verify that funding is based on actions of mitigation. Verify that results of relevant monitoring are made available upon request.

Appendix 5-1

Noxious Weeds
(7 CFR 360.200)

(a) 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 salvinia)
Salvinia biloba Raddi	(giant salvinia)
Salvinia herzogii de la Sota	(giant salvinia)
Salvinia molesta D.S. Mitchell	(giant salvinia)
Sparganium erectum Linnaeus	(exotic burreed)
Stratiotes aloides Linnaeus	(water-aloe)

(b) Parasitic weeds:

Aeginetia spp.
Alectra spp.
Cuscuta spp. (dodders)
other than following species:
Cuscuta americana Linnaeus
Cuscuta applanata Engelmann
Cuscuta approximata Babington
Cuscuta attenuata Waterfall
Cuscuta boldinghii Urban
Cuscuta brachycalyx (Yuncker) Yuncker
Cuscuta californica Hooker & Arnott
Cuscuta campestris Yuncker
Cuscuta cassytoides Nees ex Engelmann
Cuscuta ceanothii Behr
Cuscuta cephalanthii Engelmann
Cuscuta compacta Jussieu
Cuscuta corylii Engelmann
Cuscuta cuspidata Engelmann
Cuscuta decipiens Yuncker
Cuscuta dentatasquamata Yunker
Cuscuta denticulata Engelmann
Cuscuta epilinum Weihe

Cuscuta epithymum (Linnaeus) Linnaeus
Cuscuta erosa Yuncker
Cuscuta europaea Linnaeus
Cuscuta exalta Engelmann
Cuscuta fasciculata Yuncker
Cuscuta glabrior (Engelmann) Yuncker
Cuscuta globulosa Bentham
Cuscuta glomerata Choisy
Cuscuta gronovii Willdenow
Cuscuta harperi Small
Cuscuta howelliana Rubtzoff
Cuscuta indecora Choisy
Cuscuta jepsonii Yuncker
Cuscuta leptantha Engelmann
Cuscuta mitriformis Engelmann
Cuscuta nevadensis I. M. Johnston
Cuscuta obtusiflora Humboldt, Bonpland, & Kunth
Cuscuta occidentalis Millspaugh ex Mill & Nauttall
Cuscuta odontolepis Engelmann
Cuscuta pentagona Engelmann
Cuscuta planiflora Tenore
Cuscuta plattensis A. Nelson
Cuscuta polygonorum Engelmann
Cuscuta rostrata Shuttleworth ex Engelmann
Cuscuta runyonii Yuncker
Cuscuta salina Engelmann
Cuscuta sandwichiana Choisy
Cuscuta squamata Engelmann
Cuscuta suaveolens Seringe
Cuscuta suksdorfii Yuncker
Cuscuta tuberculata Brandegee
Cuscuta umbellata Humboldt, Bonpland, & Kunth
Cuscuta umbrosa Beyrich ex Hooker
Cuscuta vetchii Brandegee
Cuscuta 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 dugesii (S. Watson) Munz
Orobanche fasciculata Nuttall
Orobanche ludoviciana Nuttall
Orobanche multicaulis Brandegee
Orobanche parishii (Jepson) Heckerd
Orobanche pinorum Geyer ex Hooker
Orobanche uniflora Linnaeus
Orobanche valida Jepson
Orobanche vallicola (Jepson) Heckard

Striga spp. (witchweeds)

(c) Terrestrial weeds:

Ageratina adenophora (Sprengel) King & Robinson	(crofton weed)
Alternanthera sessilis (Linnaeus) R. Brown ex de Candolle	(sessile joyweed)
Asphodolus fistulosus Linnaeus	(onionweed)
Avena sterilil Linnaeus (including *Avena ludoviciana* Durieu)	(animated oat, wild oat)
Borreria alata (Aublet) de Candolle	
Carthamus ozyacantha 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, anual conchgrass)
Drymaria arenarioides Humboldt & Bonpland ex Roemer & Schultes	(lightning weed)
Emex australis Steingeil	(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)
Inperata cylindrica (Linnaeus) Raeuschel	(cogongrass)
Ipomoea triloba Linnaeus	(little bell, aiea morning-glory)
Ischaemum rugosum Salisbury	(murainograss)
Leptochloa chinensis (Linnaeus) Nees	(Asian sprangletop)
Lycium ferocissimim 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 Linneaus 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 caligastana Burkart	
Prosopis campestris Griseback	
Prosopis castellanosii Burkart	
Prosopis denudans Bentham	
Prosopis elate (Burkart) Burkart	

Prosopis farcta (Solander ex Russell) Macbride
Prosopis feroz Grisebach
Prosopis fiebrigii Harms
Prosopis hassleri Harms
Prosopis humilis Gillies 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 Federal Aviation Administration	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

Section 6

Pesticide Management

Section 6

PESTICIDE MANAGEMENT

A. Applicability

This section applies to FAA facilities which use, store or handle pesticides. Pesticides are regulated on the Federal level (U.S. Environmental Protection Agency (USEPA)) and the state level.

B. Federal Legislation

- *The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).* This Act, as last amended in December 1991, 7 U.S. Code (USC) 136-136y, deals with the sale, distribution, transportation, storage, and use of pesticides. The 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)).

Although specific state regulations are not included in this section, all major areas that are typically regulated on the state level are included here in a generic manner.

C. State/Local Requirements

State pesticide regulatory programs are to be at least as stringent as FIFRA. State and local programs typically contain regulations which are tailored to an industry or activity which is prevalent or particularly sensitive in a state. State and local pesticide regulations in many cases provide more stringent standards or specifically identify a requirement which may be qualitatively regulated under the Federal program.

State and local pesticide programs generally include regulations which address 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, storage facilities
- operational requirements for selected application methods
- recordkeeping and applicator certification requirements.

D. FAA Regulations/Requirements

- None at this time.

E. Key Compliance Requirements

- Certification - Certification must be obtained for specific pest management activities (40 CFR 171.3). Contractors used for pest management must have current state certification for the types of applications to be performed.

- Recordkeeping and Reporting - The certification status of applicators should be compiled in a list showing certification expiration dates.

- Health Monitoring - Facilities shall schedule, perform, and record the results of physical examinations for all persons involved in restricted use pesticide storage or applications.

- Mixing, and Personnel Facilities - Facilities are required to provide some separation for select components of the pest management program. Pest management chemicals shall be stored separate from other operations areas. 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).

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

These definitions were obtained from Federal Regulations previously cited in this section.

- *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 on the front panel the signal word CAUTION (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* - this is utilized 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 on the front panel the signal word DANGER (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 will 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 intended for use as a plant regulator, defoliant, or disinfectant; and is further categorized into the following (40 CFR 165.1):
  - *Excess pesticides* - pesticides that cannot be legally sold pursuant to the Act or that are to be discarded.
  - *Organic pesticides* - carbon-containing substances used as pesticides, excluding metallo-organic compounds.
  - *Inorganic pesticides* - noncarbon-containing substances used as pesticides.
  - *Metallo-organic pesticides* - a class of organic pesticides containing one or more metal or metalloid atoms in the structure.

- *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* - this 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* - this may be authorized in an emergency condition to control the introduction or spread of any pest new to or not theretofore 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:
  - a significant economic loss
  - a significant risk to endangered species, tnreatened species, beneficial organisms, or the environment (40 CFR 166.2).

- *Toxicity Category* - required warnings and precautionary statements are based on the Toxicity Category of the pesticide. The assigned category is based on the 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 on the front panel the signal word WARNING (see 40 CFR 156.10 for listing of indicators necessary to meet specific criteria of toxicity categories) (40 CFR 156.10(h)).

PESTICIDE MANAGEMENT PROTOCOL

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:
All Facilities	6-1 through 6-8
Pesticide Applications	6-9 through 6-14
Storage	6-15 through 6-25
Mixing/Formulation	6-26
Disposal	6-27 through 6-31

PESTICIDE MANAGEMENT

Records to Review

- Records of pesticides purchased by the facility (purchase orders, inventory)
- Pesticide application records
- Description of the facility's pest control program
- Certification status of pesticide applicators
- Pesticide disposal manifests

Physical Features to Inspect

- Personnel Protection Equipment
- Pesticide Application Equipment
- Pesticide Storage areas, including storage containers

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
6-1. Determine actions or changes since previous review of pesticides management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report. (NOTE: The term *pesticides* in this protocol refers to insecticides, rodenticides, fungicides, herbicides, and other pest control chemicals (see the definition in the introduction).)
...	...
6-2. Copies of all relevant Federal, Agency, state, and local regulations and guidance documents on pesticide management should be available at the facility (GMP).	Verify that the following documents are maintained and kept current at the facility: - Executive Order (EO) 12088, *Federal Compliance With Pollution Control Standards.* - 29 CFR 1910, *Occupational Safety and Health Standards.* - 40 CFR 152, *Pesticide Registration and Classification Procedures.* - 40 CFR 165, *Regulations for the Acceptance of Certain Pesticides and Recommended Procedures for the Storage and Disposal 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.* - 50 CFR 402, *Interagency cooperation - Endangered Species Act of 1973, as amended.* - State pesticide regulations.
...	...
6-3. Facilities are required to abide by state and local pesticide regulations (EO 12088, Section 1-1).	Verify that the facility is abiding by state and local requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (NOTE: Issues typically regulated by state and local agencies include: - applicator certification - restricted use pesticides - application procedures - banned pesticides - disposal methods.)
...	...
6-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning pesticides have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-5. Facilities are required to dispose of or store any pesticide, pesticide container, or pesticide residue according to specific restrictions (40 CFR 165.7).	Verify that pesticide, pesticide container, and/or pesticide residues are stored and/or disposed of such that: - 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 - water dumping or ocean dumping would not occur.
...	...
6-6. Spills of pesticides should be contained and reported in accordance with the Spill Plan (GMP).	Determine if the facility has had any spills of pesticides. Verify that pesticide spills are addressed in the Oil and Hazardous Materials Spill Plan.
...	...
6-7. Security measures must assure that only authorized persons can access pesticide storage, mixing, and preparation areas (GMP).	Verify that a climb-resistant fence completely encloses facility. Verify that vehicles used to transport pesticides have locking compartments.
...	...
6-8. Pesticide storage, mixing and preparation facilities must provide facilities and procedures to ensure safety of personnel (29 CFR 1910.133).	Determine if ventilation system is specifically provided for all indoor pesticide mixing/preparation areas. Verify that an emergency deluge shower and eyewash station are located to provide immediate access to all personnel performing mixing. Verify that personal protective clothing and equipment is provided and used by pest management personnel. The following equipment depends upon magnitude and type of operations: - 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.
...	...

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PESTICIDE APPLICATIONS	
6-9. Persons applying restricted use pesticides must be certified to apply restricted use pesticides (40 CFR 171.9).	Determine if pesticide applicators are trained and/or certified. Verify that training recertification is scheduled and performed as required to maintain certification and that certification is relevant to the pest management activities undertaken. Verify the certification status of contractors used for pest management. (NOTE: Check the list of restricted-use pesticides in Appendix 6-1.)
...	...
6-10. Personnel routinely applying any pesticides should be trained in safety procedures and application procedures (GMP).	Determine if personnel at the facility routinely apply pesticides. Verify that personnel is trained in appropriate handling and use procedures.
...	...
6-11. Health monitoring should provided for government personnel applying restricted-use pesticides (GMP).	Verify that all pest management personnel have received baseline physical examinations within 30 days of starting pest management work. Verify that pest management personnel receive additional physical examinations once each year. Verify that cholinesterase tests are given to pest management personnel working regularly with pesticides which contain organophosphates or N-alkyl-carbamates.
...	...
6-12. Public safety should be ensured when applying or using pesticides (GMP).	Verify the elimination of hazardous exposure to the general public by checking for the following: - 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.
...	...
6-13. Records should be maintained of each application of a pesticide, whether performed by hired labor or contract, and retained at the project office (GMP).	Verify that records are kept on file for a minimum of 2 years (yr).
...	...

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-14. Facilities must ensure that the use of pesticides does not jeopardize the existence of threatened or endangered species (50 CFR 402.01).	Determine if surveys have been conducted to identify the presence of threatened or endangered species in areas where pesticides are used. Determine what measures are taken to ensure that threatened or endangered species are not affected. Verify that applications are made according to label instructions regarding the protection of endangered species. (NOTE: Refer to the information on endangered species in the section titled *Natural Resources Management.*)
...	...
STORAGE	(NOTE: Storage areas must also meet the general requirements for the storage of hazardous materials found in 29 CFR 1910.106, see the section titled *Hazardous Materials Management*).
6-15. A spill containment system constructed of impervious materials should provide containment for pesticide storage, mixing, preparation and management areas (GMP).	Verify that there is curbing around the required areas. Determine if there are drains and cracks in floors. Determine if pest management shop personnel are familiar with spill response procedures. Verify that spill response procedures are written and understood by staff.
...	...
6-16. Storage facilities for pesticides should have ventilation at a rate of 10 air changes per hour (h) (GMP).	Verify that storage facilities for pesticides have ventilation at a rate of 10 air changes per h.
...	...
6-17. Storage facilities for pesticides should have separate drainage systems and fire extinguishers (GMP).	Verify that fire extinguishers are installed near the door of pesticide storage rooms. Verify that the drainage systems are separated from the regular systems.
...	...

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-18. Storage facilities for pesticides and excess pesticides classes as highly toxic or moderately toxic which are required to be labeled with DANGER, POISON, WARNING, or the skull and crossbones symbol should meet specific structural requirements (GMP).	Verify that storage is in a dry, separate room, building, or covered area where fire protection is provided. Verify, that when relevant and practicable, the entire storage facility is secured by a climb-proof fence and the doors and gates are kept locked. Verify that pesticides are not stored near food or feed. (NOTE: These GMPs are based on guidelines found in 40 CFR 165.10.)
...	...
6-19. The storage of pesticides and excess pesticides classed as highly toxic or moderately toxic which are required to be labeled with DANGER, POISON, WARNING, or the skull and crossbones symbol should meet specific operational requirements (GMP).	Verify that pesticide containers are stored with the label plainly visible. Verify that all containers are in good condition. Verify that the lids and bungs on metal or rigid plastic containers are tight. Verify that the pesticides are segregated. Verify that a complete inventory is kept indicating the number and identity of containers in a storage unit. Verify that containers are regularly inspected for corrosion and leaks and that absorbent material is available for spill cleanup. Verify that diluted oil based pesticides are stored separately from other materials since they are flammable. Verify that excess pesticides and containers are segregated. (NOTE: These GMPs are based on guidelines found in 40 CFR 165.10.)
...	...
6-20. Pesticide storage areas should be inspected quarterly by certified applicator personnel and safety and fire prevention officer (GMP).	Verify that pesticide storage areas are inspected quarterly.
...	...

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-21. Pest management programs which use pesticides classed as highly toxic or moderately toxic and are required to bear the signal words DANGER, POISON, WARNING, or the skull and crossbones symbol on the label should have decontamination facilities (GMP).	Determine if facilities are available for personnel decontamination and where they are located. Determine if facilities are available for the decontamination of equipment, including vehicles which have been used for pesticide applications. Verify that berms, curbing, surfaces and catchment drains which are used to impound wash water resulting from decontamination are impervious. Verify that drains impound wash water and do not connect to sanitary sewer or storm water systems. Verify that the procedure for disposal of wash water resulting from decontamination activities is the same as for excess pesticides.
...	...
6-22. Storage of pesticides and excess pesticides that are classed as highly toxic or moderately toxic and are required to be labeled DANGER, POISON, WARNING, or the skull and crossbones should meet specific requirements (GMP).	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: - 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 - verifying that the spill management system is in existence. Verify that an environmental monitoring system exists for facilities which do not have spill management system when the facility handles large quantities of pesticides and is located near sensitive environmental receptor. Reviewer should: - note approximate quantity of pesticides and location of sensitive environmental receptors. - check whether groundwater, or surface water, or air monitoring program exists to determine any effects caused by pesticide storage, mixing and preparation. - inspect facility operations and layout to determine if operations are likely to allow runoff of water which may have contacted pesticides. Verify that, when needed, drainage from the site is contained by natural or artificial barriers or dikes.
...	...

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-23. Facilities which store/use pesticides that are classed as highly toxic or moderately toxic and are required to bear the signal words DANGER, POISON, WARNING, or the skull and crossbones symbol should provide facilities and procedures to ensure the safety of personnel (GMP).	Verify that no food consumption, drinking, smoking, or tobacco use is undertaken in any area where pesticides are present. Verify that the following practices are performed in pest management operations: - 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 - a stock of protective clothing is available - self-contained breathing apparatus and impermeable suits are available when handling pesticides which present the potential of being absorbed through the skin - inspections are made once a month to determine if any pesticide containers are leaking - pesticide containers are inspected for leakage prior to handling - unauthorized persons are not allowed in storage areas.
...	...
6-24. Pesticide storage facilities and equipment which contain or use pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or the skull and crossbones symbol should have signs and safety procedures posted (GMP).	Verify that signs which read DANGER POISON and PESTICIDE STORAGE are placed on or near entries to storage facilities. Verify that safety precautions and accident prevention measures are posted. Verify that an inventory of pesticides is displayed outside of the storage facility identifying all chemicals in storage. Verify that mobile equipment used for pesticide applications is labeled CONTAMINATED WITH PESTICIDES and not removed from the site unless thoroughly decontaminated.
...	...

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-25. Where large quantities of pesticides classed as highly toxic or moderately toxic and are labeled DANGER, POISON, WARNING, or the skull and crossbones symbol are being stored, or other conditions warrant, the local fire department, hospitals, public health officials, and police department should be notified in writing that pesticides are being stored (GMP).	Verify that notification has been submitted and includes a statement of the hazards that pesticides may present during a fire. Verify that a floor plan of the storage facility indicating the location of the different pesticide classifications has been submitted to the fire department. Verify that the fire chief has the home telephone numbers of the person(s) responsible for the pesticide storage facility.
...	...

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
MIXING/ FORMULATION	
6-26. Mixing/ formulation areas should meet specific standards (GMP).	Determine if the facility has any mixing/formulation areas. Verify that enclosed mixing areas have a local exhaust ventilation with a minimum face velocity of 100 linear ft/minute (min) to control toxic vapors. Verify that drainage systems are separate from the regular system.
...	...
DISPOSAL	
6-27. Organic pesticides, except organic mercury, lead, cadmium, and arsenic compounds should be disposed of according to specific procedures (GMP).	Determine if the facility uses organic pesticides. Verify that the organic pesticides are disposed of through incineration at an incinerator which meets the air quality standards for for gaseous emissions or in a specially designated landfill if incineration is not available or by another approved method. (NOTES: Municipal solid waste incinerators may be allowed to be used to incinerate pesticides and pesticide containers if they meet criteria of the state.) (NOTE: These GMPs are based on guidelines found in 40 CFR 165.8 and 165.9.)
...	...
6-28. Metallo-organic pesticides, except organic mercury, lead, cadmium, or arsenic compounds should be disposed of according to specific procedures (GMP).	Determine if the facility uses metallo-organic pesticides. Verify that metallo-organic pesticides are subjected to an appropriate chemical or physical treatment to recover the heavy metals from the hydrocarbon structure prior to disposal. Verify that metallo-organic pesticides are disposed of through incineration at an approved incinerators or in a specially designated landfill or by another approved method. (NOTE: These GMPs are based on guidelines found in 40 CFR 165.8 and 165.9.)
...	...

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-29. Organic mercury, lead, cadmium, arsenic, and all inorganic pesticides should be disposed of according to specific procedures (GMP)	Determine if the facility uses organic mercury, lead, cadmium, arsenic, or any inorganic pesticides. Verify that these pesticides are converted to a nonhazardous compound and the heavy metal resources are recovered. Verify that if chemical deactivation facilities are not available, these pesticides are encapsulated and buried in a specially designated landfill and records sufficient to permit location and retrieval are maintained. Determine if an alternative method of disposal has been approved. (NOTE: These GMPs are based on guidelines found in 40 CFR 165.8 and 165.9.)
...	...

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
6-30. Containers should be disposed of according to their classification as either a Group I, Group II, or Group III container (GMP).	Determine which of the following types of containers the facility has on-site: - 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 an incinerator or buried in a specially designated landfill. (NOTE: Small quantities of Group I containers may be burned in open fields by the user of the pesticide when allowed by the state.) Verify that Group II containers are triple rinsed. Verify that Group II containers in good condition are returned to the manufacturer, formulator, or drum reconditioner to reuse with the same chemical class of pesticides. Verify that Group II containers which are going to be transported to a facility for recycle as scrap metal or for disposal are punctured. Determine if rinsed Group II containers are crushed and disposed of in a landfill according to state or local requirements. Verify that unrinsed Group II containers are disposed of in a specially designated landfill or incinerated. Verify that Group III containers which are not rinsed are encapsulated and disposed of in a specially designated landfill. (NOTE: Group III containers which are rinsed may be disposed of in a sanitary landfill.) (NOTE: These GMPs are based on guidelines found in 40 CFR 165.8 and 165.9.)
...	...
6-31. Pesticide residues and rinse liquids should be added to spray mixtures or disposed of according to their pesticide type (GMP).	Verify that pesticide residues or rinse liquids are reused. Verify that if they are not reused they are disposed of according to their pesticide type. (NOTE: These GMPs are based on guidelines found in 40 CFR 165.8 and 165.9.)

INSTALLATION:	COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT Federal Aviation Administration	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

Section 7

Petroleum, Oil, and Lubricant (POL) Management

Section 7

POL MANAGEMENT

A. Applicability

This section applies to FAA facilities which store, transport, dispose of, or utilize petroleum-based fuels, oils, or lubricants (POL). The section presents review action items which respond to regulations, procedures, and organizational mechanisms designed to prevent or limit the accidental release of POL materials to surface water, groundwater, or soils.

This section covers POL management of bulk storage tanks, organizational tanks, pipeline delivery systems, truck fill stands, and immediate operating storage areas. POL materials addressed include petroleum, diesel fuel, and lubricating oils. The storage of POL materials in underground storage tanks (USTs) is addressed in Section 10, titled *Underground Storage Tank (UST) Management.*

B. Federal Legislation

- *The Water Quality Improvement Act of 1974.* This Act is the primary Federal law governing the discharge of oil into navigable waters. It prohibits 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 a sludge or emulsion to be deposited beneath the surface of the water.

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

C. State/Local Regulations

Many states and some major metropolitan and regional planning agencies have developed legislation and implemented regulations which closely parallel the Federal regulations. Some, however, may differ in important ways, and the evaluator should obtain copies of the state or local requirements for the Oil and Hazardous Substances Contingency Plan (OHSCP) and Spill Prevention, Control, and Countermeasure (SPCC) plan, 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.

D. FAA Regulations/Requirements

- None at this time.

E. Key Compliance Requirements

- Petroleum Product Environmental Release Reporting - FAA facilities are required to notify USEPA and appropriate state agencies when a release of a reportable quantity of POL material enters a navigable water (40 CFR 302).

- 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.

- Spill Prevention and Response (SPR) Plan - FAA facilities which operate POL facilities are required to prepare an 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 three years (yr) and modified within six 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). The SPCC plan may be combined with the required OHSCP (40 CFR 300) into a comprehensive SPR plan.

- Spill Response Training - All FAA 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).

- Used Oil - 40 CFR 279 addresses the storage, transportation and burning of used oil.

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

These definitions were obtained from the various Federal and FAA regulations cited previously in this section.

- *Container* - any portable device in which materials is stored, transported, treated, disposed of, or otherwise handled (40 CFR 279.1).

- *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).

- *Daily Discharge* - the discharge of a pollutant measured during a calendar day or any 24-hour (h) period that reasonably represents the calendar day for purposes of sampling (40 CFR 122.2).

- *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).

- *Do-It-Yourself Used 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).

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

- *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).

- *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).

- *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 Tank* - 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).

- *Offshore Facility* - any facility of any kind located in, on, or under any of the navigable waters of the United States, and any facility or any kind that is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel (40 CFR 110.2 and 33 CFR 153.103).

- *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 and 33 CFR 153.103).

- *Onshore Facility* - any facility (including but not limited to, motor vehicles and rolling stock,) of any kind located in, on, or under any land within the United States, other than submerged land (40 CFR 110.2 and 33 CFR 153.103).

- *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).

- *Pipeline* - all parts of an onshore pipeline facility through which oil moves, including, but not limited to, line pipe, valves, and other appurtences 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).

- *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 storm water (40 CFR 122.2 and 40 CFR 401.11(d)).

- *Processing* - means chemical or physical operations designed to produce from used oil, or to make used oil more amenable for 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).

- *Public Vessel* - a vessel owned or bare-boat chartered and operated by the United States, or by a State or political subdivision thereof, or by a foreign nation, except when such vessel is engaged in commerce (40 CFR 110.2 and 33 CFR 153.103).

- *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).

- *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)

- *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).

- *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).

- *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).

- *Spill Prevention, Control, and Countermeasure (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).

- *Tank* - 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).

- *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 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 meet 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 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 persons 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).

- *Vessel* - every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water other than a public vessel (40 CFR 110.2).

- *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).

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

POL MANAGEMENT PROTOCOL

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:
All Facilities	7-1 through 7-6
SPCC Plan	7-7 through 7-14
Discharges/Spills	7-15 and 7-16
Storage/Containment	7-17 through 7-21
Pipelines	7-22 through 7-30
Used Oil	7-31
Used Oil Generators:	
General	7-32 through 7-36
Containers and Tanks	7-37 through 7-48
Used Oil Collection Centers and Aggregation Points	7-49 through 7-51
Used Oil Transportation	7-52 through 7-60
Used Oil Burners	7-61 through 7-67
Used Oil Marketing	7-68 through 7-72
Used Oil Dust Suppression	7-73

POL MANAGEMENT

Records to Review

- Records of all spills, leaks, and associated site assessment/cleanup activities (for 3 yr)
- Official correspondence with state implementing agency
- SPR Plan
- Records of spill response training programs
- Records of all spills, leaks, and associated site assessment/cleanup activities (for 3 yr)

Physical Features to Inspect

- Refueling facilities, including:
    - Aboveground and belowground storage tanks and dikes
    - Venting
    - Fill pipe
    - Gauges
- Oil Separators
- Oil and Hazardous Substance Site

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
7-1. Determine actions or changes since previous review of POL management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report.
...	...
7-2. Copies of all relevant Federal, Agency, state, and local regulations and guidance documents on POL management should be available at the facility (GMP).	Verify that copies of the following regulations are available and kept current: - Executive Order (EO) 12088, *Federal Compliance With Pollution Control Standards.* - 40 CFR 110, *Discharge of Oil.* - 40 CFR 112, *Oil Pollution Prevention.* - 40 CFR 266, *Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities.* - 40 CFR 279, *Standards for the Management of Used Oil.* - Appropriate state and local regulations.
...	...
7-3. Facilities are required to abide by state and local regulations (EO 12088, Section 1-1).	Verify that the facility is abiding by state and local requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (NOTE: Issues 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 - used oil.)
...	...
7-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning petroleum, oils, and lubricants have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-5. Facilities 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.
...	...
7-6. Petroleum products which are not utilized for their intended purpose should be reclaimed, recovered, and disposed of as waste (GMP).	Verify that containers are properly marked and in good condition at accumulation points. Verify that used crankcase oils/ lubricants are being collected at motor pools and vehicle maintenance shops. Determine if contaminated used crankcase oil is regulated as hazardous and disposed of according to applicable Resource Conservation and Recovery Act (RCRA) regulations. Verify that mixed petroleum liquids which are contaminated by halogenated contaminants or industrial chemicals are disposed of as hazardous waste according to applicable RCRA regulations.
...	...
SPCC PLAN	

7-7. Facilities which store, transport, or dispense petroleum products are required to prepare an SPCC plan (40 CFR 112.3).	Verify that the facility has an SPCC plan.
	
	(NOTE: Facilities 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 Department of Transportation.
	- both of the following criteria are met:
	  - the underground buried storage capacity of the facility is 42,000 gal or less of oil
	  - the storage capacity which is not buried at the facility is 1320 gal of oil or less and no single container exceeds a capacity of 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.)

...	...

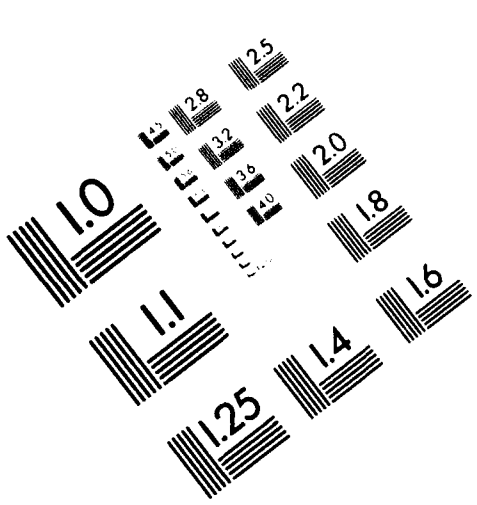
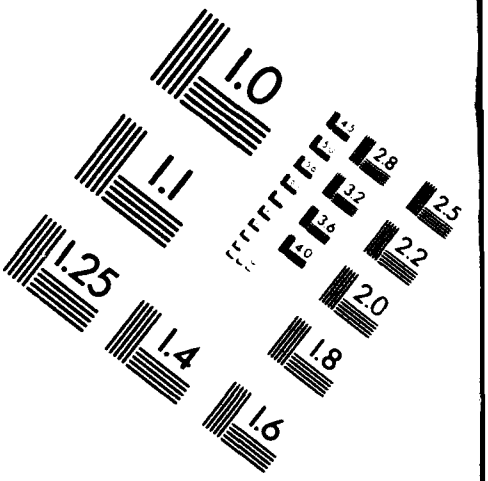
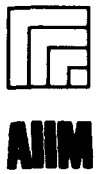
COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:

7-8. 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:
	
	- command approval
	- spill reporting procedures
	- pre-spill 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:
	
	- general information about the facility including:
	  - name
	  - type of function
	  - location of facility drainage patters
	  - 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 oi flow
	  - total quality of oil that could be spilled as a result of major failure.

...	...

7-9. 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.
	
	(NOTE: Facilities 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 Department of Transportation.
	- both of the following criteria are met:
	  - the underground buried storage capacity of the facility is 42,000 gal or less of oil
	  - the storage capacity which is not buried at the facility is 1320 gal of oil or less and no single container exceeds a capacity of 660 gal (40 CFR 112.1(d)(2).)

...	...

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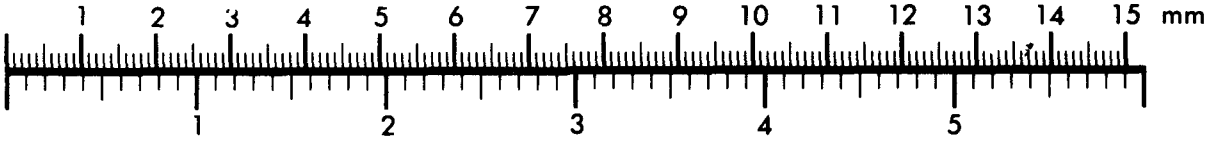

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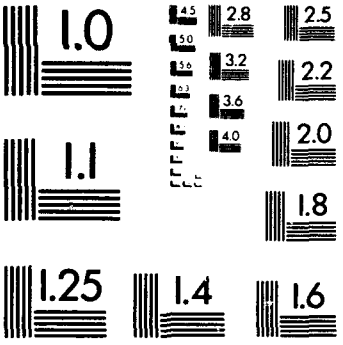

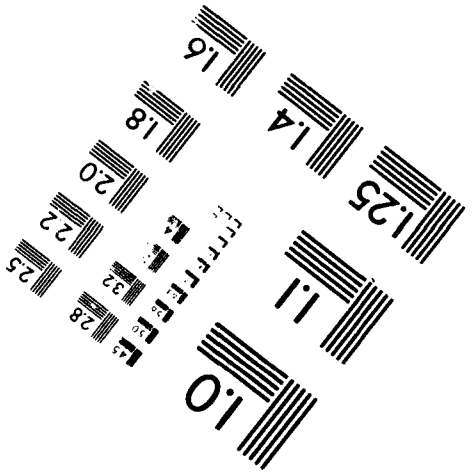
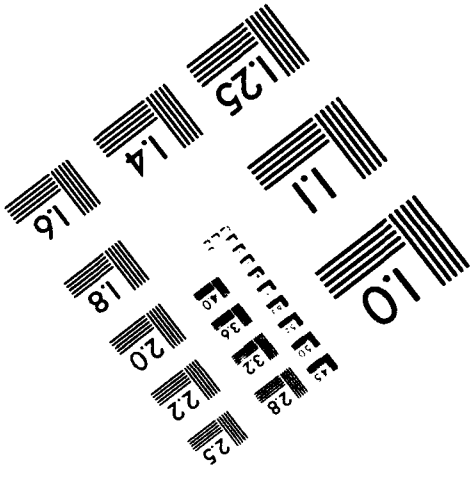

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COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-10. The SPCC plan must be reviewed and/or amended under specific circumstances (40 CFR 112.4 and 112.5(a)).	Verify that the plan was amended if there was a material change in facility design, construction, operations, or maintenance that alters the potential for an oil spill. Verify that the plan was sent to the USEPA for review if: - there was a discharge of more than 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. (NOTE: Facilities 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 Department of Transportation. - both of the following criteria are met: - the underground buried storage capacity of the facility is 42,000 gal or less of oil - the storage capacity which is not buried at the facility is 1320 gal of oil or less and no single container exceeds a capacity of 660 gal (40 CFR 112.1(d)(2).)
...	...
7-11. 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. (NOTE: Facilities 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 Department of Transportation. - both of the following criteria are met: - the underground buried storage capacity of the facility is 42,000 gal or less of oil - the storage capacity which is not buried at the facility is 1320 gal of oil or less and no single container exceeds a capacity of 660 gal (40 CFR 112.1(d)(2).)
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-12. A copy of the SPCC plan is required to be available at sites that are normally attended at least 8 h/day 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. (NOTE: If personnel is 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.)
...	...
7-13. All facility personnel involved with the management and handling of oil and hazardous substances must take part in periodic training in spill prevention and response (40 CFR 112.7(e)(10)).	Verify that proper training has been conducted by reviewing training records and interviewing the staff. Verify that training addresses the procedures to follow when a spill occurs, such as: - notification - containment - safety practices.
...	...
7-14. As a good management practice, the OHSCP and SPCC plan should specify the conduct of periodic spill response exercises (GMP).	Review spill response exercise files for verification of compliance with stated frequency requirements.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DISCHARGES/ SPILLS	
7-15. Discharges of oil into or upon the navigable waters of the United States or adjoining shorelines or into 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. (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. (NOTE: If direct reporting to the NRC is not practicable reports may be made to the Coast Guard or USEPA predesignated On-Scene Coordinator.) (NOTE: Discharges of oil from a properly functioning vessel engines are not considered harmful but discharges of oil from a vessel's bilge are not allowed.)
...	...
7-16. Facilities are not allowed to add dispersants or emulsifiers to oils that are discharged (40 CFR 110.8).	Verify that facilities do not add dispersants or emulsifiers to discharges.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
STORAGE/ CONTAINMENT **7-17.** Appropriate containment and/or diversionary structures, and cleanup equipment to prevent discharged petroleum products from reaching navigable water course is required to be readily available at facility (40 CFR 112.7(c)).	Determine that at onshore facilities one of the following prevention systems or an equivalent is used: - absorbent material - dikes, berms, or retaining walls sufficiently impervious to contain spilled oil - curbing devices - culverting gutters or other drainage systems - weirs, booms, or other barriers - spill diversion ponds - retention ponds. Verify that each oil storage area has the following items: - adequacy of material types and quantities - accessibility of storage location - condition of equipment. Verify that at offshore facilities (see definitions), one of the following, or an equivalent is available: - curbing, drip pans - sumps and collection systems. (NOTE: Facilities 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 Department of Transportation. - both of the following criteria are met: - the underground buried storage capacity of the facility is 42,000 gal or less of oil - the storage capacity which is not buried at the facility is 1320 gal of oil or less and no single container exceeds a capacity of 660 gal (40 CFR 112.1(d)(2).)
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

7-18. All bulk storage tanks (over 660 gal) should be provided with a secondary means of containment for the entire contents of the largest single tank plus sufficient freeboard to allow for precipitation (40 CFR 112.7(e)(2)(ii)).	Verify that adequate containment is provided for bulk storage tanks in the storage area and at remote tanks.
	
	Verify that diked areas are impervious enough to contain spilled oil.
	
	(NOTE: Dikes, containment curbs, and pits are commonly employed for this purpose, but they may not always be appropriate. An alternative system could consist of a complete drainage trench enclosure arranged so that a spill could terminate and be safely contained in an in-plant catchment basin or holding pond.)
	
	(NOTE: Facilities 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 Department of Transportation.
	- both of the following criteria are met:
	  - the underground buried storage capacity of the facility is 42,000 gal or less of oil
	  - the storage capacity which is not buried at the facility is 1320 gal of oil or less and no single container exceeds a capacity of 660 gal (40 CFR 112.1(d)(2).)

...	...
7-19. Drainage of rainwater from diked areas must be controlled by a valve which is closed when not in active use (40 CFR 112.7(e)(1) and 112.7(e)(2)(iii)).	Verify that valves are closed when not in use by inspecting drainage valves at diked areas. Verify that drainage valves are attended when opened to drain diked/bermed area by interviewing personnel. Determine if operating personnel understand the meaning of a harmful discharge as described in 40 CFR 110.6. Inspect records for any drainage water which was inspected to determine if it would represent a harmful discharge.
...	...
7-20. Drainage water which is determined to contain petroleum products in harmful quantities must be treated prior to 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 and reported by interviewing onsite personnel.

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-21. Aboveground storage tanks are subject to periodic integrity testing (40 CFR 112.7(e)(2)(vi)).	Verify that periodic leak tests have been conducted (a decrease in converted fuel volume equal to or greater than 1/4 inch (in.) constitutes a suspected leak) and check the results of these tests. Determine if leaking tanks have been repaired or replaced. (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.)
...	...
PIPELINES	
7-22. Buried piping at a transfer facility, pumping station, or in-plant processing facility is required to 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 that buried fuel piping is properly protected from corrosion by examining records and interviewing personnel. Verify that methods are appropriate and correctly applied if cathodic protection is used. Verify that detected leaks and failures are being reported.
...	...
7-23. All above and below ground fuel piping systems at transfer facilities, pumping stations, and in-plant processing facilities must be regularly examined and any suspected leaks should be investigated immediately (40 CFR 112.7(e)(3)(iv)).	Verify that regular inspections have been conducted by examining records and interviewing personnel. Verify that above ground 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. Verify that confirmed leaks have been reported and leaking pipes repaired or replaced.
...	...
7-24. Off-facility pipelines should be inspected regularly (GMP).	Determine if inspections are performed by examining records. Verify that detected leaks and failures have been reported and leaking pipes repaired or replaced by interviewing personnel.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-25. Facilities with onshore oil pipelines that, because of location, could reasonably be expected to cause substantial harm, or significant and substantial harm to the environment by discharging oil into or on any navigable waters of the United States or adjoining shorelines are required to prepare a response plan (49 CFR 194.3 and 194.101 through 194.107).	Verify that the response plan includes: - a statement indicating which sections in a response zone can be expected to cause significant and substantial harm to the environment if there is a discharge of oil into or on the navigable water or adjoining shorelines - indications of the worst case discharge - immediate notification procedures - spill detection and mitigation procedures - the name address and phone number of an oil spill response organization - response activities and response resources - training procedures - equipment testing - schedules for drills - plan updating procedures - an appendix for each response zone indicating all the above general information in a way that is tailored to that response zone. Verify that the response plan is in English and if necessary, any other language understood by personnel responsible for carrying out the plan. (NOTE: Significant and substantial harm can be expected if the line is greater than 6 5/8 in. in outside nominal diameter, greater than 10 miles (mi) in length and the line section: - has experienced a release greater than 1000 barrels in the previous 5 yr - has experienced two or more reportable releases in the previous 5 yr - contains any electric resistance welded pipe, manufactured prior to 1970, operated at maximum operating pressure that corresponds to a stress level greater than 50 percent of the specified minimum yield strength of the pipe - is located within a 5-mi radius of potentially affected public drinking water intakes and could reasonably be expected to reach the intake - is located within 1 mi radius of potentially affected environmentally sensitive areas, and could reasonably be expected to reach these areas.) (NOTE: The requirement to submit a response plan is effective 18 February 1993. After 18 August 1993, the onshore pipeline must be operated according to the details outlined in the response plan.)

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-25. (continued)	(NOTE: A response plan is not required for the following facilities: - a pipeline that is 6 5/8 in. or less in outside nominal diameter, is 10 mi or less in length, and all the following conditions apply: - the pipeline has not experienced a release greater than 1000 barrels within the previous 5 yr - the pipeline has not experienced at least two reportable releases within the previous 5 yr - the pipeline contains any electric resistance welded pipe, manufactured prior to 1970, does not operate at a maximum operating pressure that corresponds to a stress level greater than 50 percent of the specified minimum yield strength of the pipe - the pipeline is not in proximity to navigable waters, public drinking water intakes, or environmentally sensitive areas - a line section that is greater than 6 5/8 in. in outside nominal diameter and is greater than 10 mi in length, where the operator determines that it is unlikely that the worst case discharges from any point on the line section would adversely affect, within 12 h after the start of discharge, any navigable waters, public drinking water intakes, or environmentally sensitive areas - a line section that is 6 5/8 in. or less in outside nominal diameter and is 10 mi or less in length, where the operator determines that it is unlikely that the worst case discharge from any point on the line section would adversely affect, within 4 h after the initiation of the discharge, any navigable waters, public drinking water intakes, or environmentally sensitive areas.)
...	...
7-26. Copies of the response plan are required to be submitted to the USEPA Research and Special Programs Administration (RSPA) (49 CFR 194.119(a) through 194.119(d)).	Verify that two copies were submitted to the following: Pipelines Response Plans Officer Research and Special Programs Administration Department of Transportation 400 Seventh St. SW Washington D.C. 20590-0001. Verify that the RSPA approved the response plan.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-27. If RSPA does not approve a response plan for a pipeline identified as expected to cause significant and substantial harm to the environment, the operator must submit certification to the RSPA by 18 July 1993 that the operator has obtained, through contract or other means, the necessary personnel and equipment to respond to a worst case discharge or a substantial threat of a discharge (49 CFR 194.119(e)).	Determine if the facility has an approved response plan. Verify that if there is not an approved response plan, the necessary certification has been submitted.
...	...
7-28. Copies of the response plan are required to be kept at specific locations (49 CFR 194.111).	Verify that a copy of the complete response plan is at the operator's headquarters and a copy is provided to each responsible individual. Verify that a copy of the core portion of the plan and relevant response zone appendices for each line section whose pressure may be affected by the operation of a particular pump station is provided at the pump station. Verify that a copy of the core portion of the plan and relevant response zone appendices is kept at locations where response activities might be conducted.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-29. Training is required for the implementation of the response plan (49 CFR 194.117).	Verify that training is conducted such that all personnel know: - their responsibilities under the plan - the names and addresses and procedures for contacting the operator on a 24-h basis and an qualified individual. Verify that reporting personnel know: - the content of the information summary - the toll free number of the National Response Center - the notification process. Verify that personnel engaged in response activities know: - the characteristics and hazards of oil discharged - the conditions that are likely to worsen emergencies and appropriate corrective actions - the steps needed to control any accidental discharge of oil and to minimize the potential for fire, explosion, toxicity, or environmental damage - the proper firefighting procedures and use of equipment, fire suits and breathing apparatus. Verify that training records exist for each individual that has been trained, specifically: - records for operator personnel are at the operator's headquarters - records for personnel engaged in response are maintained as determined by the operator. (NOTE: This training does not take the place of emergency response training requirements as found in 29 CFR 1910.120.)
...	...
7-30. Pipeline response plans are required to be reviewed every 3 yr from the date of submission and modified to address new or different operating conditions or information (49 CFR 194.121).	Verify that the plan is reviewed every 3 yr.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
USED OIL	
7-31. Depending on the constituents of the used oil, (see Appendix 7-1), 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 7-1 are generated at the facility. Verify that used oil is handled according to its classification as one of the following: - a hazardous waste - used oil that falls under the requirements of 40 CFR 279 in checklist items 7-32 through 7-73 - used oil that is not subject to the requirements of 40 CFR 279 and neither is it a hazardous waste unless testing indicate 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	
7-32. Used oil generators that detect a release (other than a 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: - 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.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-33. 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. Verify that the following parameters are met: - 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 MBtu/h - the combustion gases from the heater are vented to the ambient air.
...	...

7-34. Except in specific circumstances, used oil generators must ensure that their used oil is transported only by transporters who have USEPA ID Nos. (40 CFR 279.24).	Determine if the installation is transporting used oil or contracting the transportation of used oil.
	
	Verify that the transporter has a USEPA ID No. except when:
	
	- 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.

...	...
7-35. 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 : - 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.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-36. 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.
...	...
Containers and Tanks	
7-37. 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. Verify that used oil is transferred to a new container or managed in another appropriate manner when necessary.
...	...
7-38. 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.
...	...
7-39. 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). Verify that handling and storage practices do not cause damage to the containers or cause them to leak.
...	...
7-40. Containers of used oil at used oil generators should be managed in accordance with good management practices (GMP).	Inspect containers and storage areas to determine the following: - containers are not stored more than two high and have pallets between them - at least 3 feet (ft) of aisle space is provided between rows of containers.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-41. 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: - 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.
...	...
7-42. 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: - 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. Verify that secondary containment for tanks includes one or more of the following: - a liner (external to the tank) - a vault - a double-walled tank - an equivalent approved device.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-43. 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: - 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: - 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: - 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.
...	...
7-44. 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: - 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.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-45. Tank systems at used oil generators that are required to have secondary containment but 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: - 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 facility 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 facility maintains a record of the results of testing and assessments.
...	...
7-46. 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. 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. Verify that the facility keeps on file the written assessments from the individuals required to certify the tank and supervise the installation of the tank.
...	...
7-47. 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. Verify that appropriate measures are taken to prevent overfill, including: - spill prevention controls - overfill prevention controls - maintenance of sufficient freeboard to prevent overtopping by wave, wind action, or precipitation for uncovered tanks.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-48. 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: - 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 National Fire Protection Association's *Flammable and Combustible Liquids Code* are maintained. Verify that incompatible waste, or incompatible wastes and materials, are not placed in the same tank system unless minimum safety requirements are met. 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.
...	...
USED OIL COLLECTION CENTERS AND AGGREGATION POINTS	
7-49. 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 questions regarding used oil generator containers and tanks.
...	...
7-50. Used oil collection centers are required to be licensed/permitted and operated according to specific standards (40 CFR 279.31).	Determine if the facility operates a used oil collection center. Verify that the collection center meets the requirements for used oil generators outlined in the questions regarding used oil generator containers and tanks. Verify that the collection center is registered/licensed/permitted/ recognized by a state/county/municipal government to manage used oil.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-51. 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 questions regarding used oil generator containers and tanks.
...	...
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 from the initial generator to a regulated generator, collection center, aggregation point, processor/refiner, or burner.)
...	...
7-52. 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 used oil that is contaminated with hazardous waste is transported as a hazardous waste according to the standards in the *Hazardous Waste Management* section. (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.)
...	...
7-53. 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.
...	...
7-54. Used oil transporters are required to have a USEPA ID No. (40 CFR 279.42).	Verify that if the facility is transporting used oil, it has a USEPA ID No.
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-55. 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: - another used oil transporter if the transporter has a USEPA ID No. - a used oil processing/re-refining facilities with a USEPA ID No. - an off-specification used oil burner facility with a USEPA ID No. - an on-specification used oil burner facility. Verify that Department of Transportation (DOT) labeling, packaging, and placarding requirements are met.
...	...
7-56. 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: - notification of authorities (National Response Center) - containment of the discharge - submit a written report to the DOT - cleanup.
...	...
7-57. 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: - 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.
...	...
7-58. 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: - name and address of the generator, transporter, or processor/re-refiner who provided the used oil for transport - USEPA ID Nos. - 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: - 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.

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-59. 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 questions regarding used oil generator containers and tanks. Verify that containers and above ground storage tanks used to store used oil have secondary containment that meets the following minimum requirements: - 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. Verify that fill pipes used to transfer used oil into underground storage tanks at transfer facilities are labeled USED OIL.
...	...
7-60. 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: - 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	

7-61. 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 facility burns use oil fuel for the purpose of energy recovery.
	
	Verify that off-specification used oil fuel is only burned for energy recovery in one of the following:
	
	- 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.)

...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-62. Used oil burners are required to have a USEPA ID No. (40 CFR 279.60(a) and 279.62).	Verify that the facility has a USEPA ID No. (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.)
...	...
7-63. 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. Verify that copies of analyses are maintained for 3 yr.
...	...
7-64. 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 questions regarding used oil generator containers and tanks. Verify that containers and above ground storage tanks used to store used oil have secondary containment that meets the following minimum requirements: - 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. Verify that fill pipes used to transfer used oil into underground storage tanks at used oil burners are labeled USED OIL. (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.)
...	...
7-65. 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: - 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.)

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-66. 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: - 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. (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.)
...	...
7-67. 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. Verify that the certification is maintained for 3 yr from the date of the last shipment received. (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.)
...	...
USED OIL MARKETING	
7-68. Used oil fuel marketers may only initiate a shipment of off-specification used oil to a used oil burner who has a 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 facility is marketing off-specification used fuel oil. 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.)
...	...

COMPLIANCE CATEGORY: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
7-69. Generators, transporters, processor/re-refiners, or burners must determine if the fuel oil is 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. Verify that records of analyses are maintained for 3 yr. (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.)
...	...
7-70. Used oil fuel marketers are required to have a USEPA ID No. (40 CFR 279.70(b) and 279.73).	Verify that the facility has a USEPA ID No. (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.)
...	...
7-71. 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: - 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: - 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. (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: POL MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
7-72. Before a used oil generator, transporter, or 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. 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.
...	...
USED OIL DUST SUPPRESSION	
7-73. 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 facility.

Appendix 7-1

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), and 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 hazrdous 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 on-site by the generaotor 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 ^{o}F minimum
Total halogens	4000 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), and 279.10(f) through 279.10(h))

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: POL MANAGEMENT Federal Aviation Administration	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

Section 8

Solid Waste Management

Section 8

SOLID WASTE MANAGEMENT

A. Applicability

This section addresses the collection, storage and disposal of solid waste at FAA facilities. Regulations for constructing new landfills and/or managing collection equipment are not included.

Solid waste is considered to be nonhazardous trash, rubbish, garbage, bulky wastes, liquids or sludges generated by any facility's operations and activities. The handling and disposal of asbestos waste materials are addressed in Section 9, *Special Pollutants Management.*

Recycling activities are also included in this section because they are considered a form of solid waste management

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 state standards, 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 *Resource Conservation and Recovery Act of 1976*, as amended. This 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, Public Law (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 utilization 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 Solid Waste Disposal Act of 1965*, as amended. This Act requires that Federal facilities comply with all Federal, state, interstate, and local requirements concerning the disposal and management of solid wastes. These requirements include permitting, licensing, and reporting. 40 CFR 240 regulates incinerators processing a minimum of 50 tons/day. 40 CFR 241 covers the land disposal of solid wastes. 40 CFR 243 addresses the requirements for the storage and collection of solid waste materials. 40 CFR 244, 40 CFR 245, and 40 CFR 246 deal with beverage containers, resource recovery, and source separation, respectively.

- *The Hazardous and Solid Waste Amendments of 1984* are the most recent addition to the bank of Federal laws regulating the disposal of solid wastes. These Amendments added a number of previously unlisted materials to the growing list of materials defined as hazardous. Some of these included chlorinated dioxins and dibenzofurans, solvents, refining wastes, chlorinated aromatics, lithium batteries, paint production wastes, and a large number of similar compounds and waste materials.

- *The Occupational Safety and Health Act of 1970.* This Act, last amended in November 1990, 29 USC 651-678, is a Federal statute which governs the issues related to occupational safety and health. Regulations promulgated under OSHA in 29 CFR 1910.1030(d) address the issue of handling medical and pathological wastes, specifically the disposal of sharps.

C. State/Local Regulations

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 U.S. Environmental Protection Agency (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. Many states have also instigated categories of special wastes which cannot be placed in landfills or dumps, or may only be disposed of under specific circumstances.

D. FAA Regulations/Requirements

- None at this time.

E. Key Compliance Requirements

- Waste Collection, Source Separation and Recycling - FAA facilities are required to comply with state and local regulations and requirements governing the separation of wastes into residual value and the recycling of those materials.

- Use of Properly Permitted Offsite Landfills - FAA facilities have the responsibility for the proper disposal of solid waste generated by FAA operations. This responsibility includes assurance that offsite landfills which receive FAA solid wastes are licensed and are operated in compliance with the conditions of those permits.

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

- *Blood* - human blood, human blood components, and products made from human blood (29 CFR 1910.1030(a)).

- *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).

- *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 nonmanufacturing 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).

- *Contaminated* - the presences of the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface (29 CFR 1910.1030(a)).

- *Contaminated Sharps* - any contaminated object that can penetrate the skin, including but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires (29 CFR 1910.1030(a)).

- *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).

- *Decontamination* - the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface of item is rendered safe for handling, use, or disposal (29 CFR 1910.1030(a)).

- *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 no consumed (7 CFR 330.400(b)).

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

- *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*** grades 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).

- *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).

- *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).

- *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 utilized 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).

- *Regulated Wastes* - liquid or semi-liquid blood or other potentially infectious materials, contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling, contaminated sharps, and pathological and microbiological wastes containing blood or other potentially infectious materials (29 CFR 1910.1030(a)).

- *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).

- *Runoff* - the portion of precipitation that drains from an area as surface flow (40 CFR 241.101).

- *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 semiliquid suspension of settled solids deposited from waste waters or other fluids in tanks or basins (40 CFR 240.101).

- *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).

- *Universal Precautions* - an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens (29 CFR 1910.1030(a)).

- *Vector* - a carrier, usually an arthropod, that is capable of transmitting a pathogen from one organism to another (40 CFR 240.202).

SOLID WASTE MANAGEMENT PROTOCOL

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:
All Facilities	8-1 through 8-4
Storage/Collection	8-5 through 8-11
Recycling	8-12 and 8-13
Land Disposal Sites Other Than MSWLFs:	
Specific wastes	8-14 through 8-17
Operations	8-18 through 8-36
Closure	8-37
Site Criteria for New Landfills	8-38 through 8-41
Disposal of Refuse from Outside the United States	8-42
Medical Waste	8-43 through 8-48

SOLID WASTE MANAGEMENT

Records to Review

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

Physical Features to Inspect

- Areas where nonhazardous waste is disposed
- Construction debris areas
- Waste receptacles

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
8-1. Determine actions or changes since previous review of solid waste management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report.
...	...
8-2. Copies of all relevant Federal, FAA, state, and local regulations and guidance documents on solid waste management should be available at the facility (GMP).	Verify that copies of the following regulations are available and kept current: - Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards.* - 7 CFR 330, *Federal Plant Pest Regulations, General, Plant Pests, Soil, Stone and Quarry Products, Garbage.* - 29 CFR 1910.1030, *Bloodborne Pathogens.* - 40 CFR 240, *Guidelines for the Thermal Processing of Solid Waste.* - 40 CFR 241, *Guidelines for the Land Disposal of Solid Wastes.* - 40 CFR 243, *Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste.* - 40 CFR 258, *Criteria for Municipal Solid Waste Landfills.* (NOTE: A consolidated listing of approved test methods should also be maintained at the facility such as *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* USEPA Publication SW-846, Document #PB87-120-291.)
...	...
8-3. Facilities are required to abide by state and local solid waste regulations (EO 12088, Section 1-1).	Verify that the facility is abiding by state and local solid waste requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (NOTE: Issues typically regulated by state and local agencies include: - license or permit requirements for existing onsite landfills - requirements for filing a closure plan for onsite landfills specifying monitoring and inspection procedures - design and operation specifications for solid waste receptacles - disposal of solid waste offsite only at licensed or permitted facilities - 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 facility heating plant operations before sale or disposal - handling and disposal of medical, pathological, and infectious waste - recycling requirements - disposal of household wastes - yard waste - used tires.)
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine whether any new regulations concerning solid waste have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...
STORAGE/ COLLECTION	
8-5. Facilities are required to store all solid wastes and materials separated for recycling according to specific guidelines (40 CFR 243.200-1).	(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.) Verify that all solid wastes are stored so as not cause a fire, health or safety hazard. Verify that all solid waste containing food wastes are stored in covered or closed containers which are nonabsorbent, leakproof, durable, easily cleaned, and designed for safe handling. Verify that solid waste containers are of an adequate size and number to contain all waste generated between collections. 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. Verify that reusable containers are capable of being serviced without the collector coming into contact with the waste.
...	...
8-6. All facilities 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.
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-7. All collection equipment is required to meet specific criteria (40 CFR 243.202-1(b) and 243.202-1(d)).	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. Verify that equipment used in the compaction, collection, and transportation of solid waste or materials separated for recycling are constructed, operated, and maintained adequately. Verify that the following types of equipment meet that standards established by the American National Standards Institute: - 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.
...	...
8-8. All facilities 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. Verify that bulky wastes are collected at a minimum of once every 3 months (mo). Verify that all wastes are collected with sufficient frequency to inhibit the propagation or attraction of vectors and the creation of nuisances.
...	...
8-9. Facilities are required to collect solid wastes in a safe, efficient manner (40 CFR 243.204-1).	Verify that solid wastes or materials separated for recycling are collected in a safe efficient manner. Verify that the collection vehicle operator immediately cleans up any spillage caused by his operations.
...	...
8-10. Facility industrial shop waste receptacles should be inspected quarterly to verify that hazardous wastes are not being deposited (GMP).	Verify that receptacles were inspected by reviewing records and interviewing personnel. Verify that corrective actions were taken where indicated. Verify that hazardous waste is not present in the solid waste receptacles at shops by a visual check.
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-11. Facility personnel should be periodically informed about materials that are prohibited from disposal in solid waste receptacles (GMP).	Verify that a program exists at the facility to keep personnel informed about proper waste disposal practices.
...	...
RECYCLING	
8-12. Facilities should participate in any state or local recycling programs and reduce the volume of solid waste materials at the source whenever practical (GMP).	Verify that a solid waste reduction program exists. Verify that recycling programs are in compliance with applicable state or local requirements. Verify that reusable or marketable materials are collected at regular intervals.
...	...
8-13. Facilities with office facilities of over 100 office workers are required to recover high-grade paper (40 CFR 246.200-1).	Determine if the facility has over 100 office workers. Verify that high-grade paper is separated at the source of generation. Verify that high-grade paper is separately collected. Verify that high-grade paper is sold for recycling.
...	...
LAND DISPOSAL SITES OTHER THAN MSWLFs	
Specific Wastes	
8-14. Facilities will identify what wastes can and cannot be accepted at the disposal 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.
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-15. 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. Verify that demolition and construction debris, tree stumps, and large timbers are pushed onto the working face near the bottom of the cell. (NOTE: This GMP is based on recommendations found in 40 CFR 241-200-3(b).)
...	...
8-16. 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. (NOTE: This GMP is based on recommendations found in 40 CFR 241.200-3(d).)
...	...
8-17. 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. (NOTE: This GMP is based on recommendations found in 40 CFR 241.200-3(e).)
...	...
Operations	
8-18. 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. (NOTE: This GMP is based on recommendations in 40 CFR 241.200-3(a).)
...	...
8-19. 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. Verify that the list of excluded wastes is documented in a plan.

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-20. 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. Verify that a list of excluded materials is given to all regular users of the site. (NOTE: This GMP is based on recommendations found in 40 CFR 241.201-3.)
...	...
8-21. 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.
...	...
8-22. 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. Verify that the land disposal site is constructed and graded to promote rapid surface water runoff without excessive erosion. Verify that regrading is done as necessary to avoid ponding of precipitation and to maintain cover material integrity. Verify that siltation or retention basins or other approved methods of retarding runoff are used where necessary to avoid stream siltation or flooding problems. Verify that leachate collection and treatment systems are used where necessary to protect groundwater and surface water resources. Verify that municipal solid wastes and leachate are not in contact with groundwater or surface water. (NOTE: This GMP is based on recommendations found in 40 CFR 241.204-3.)
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-23. 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. Verify that dust control measures are initiated as necessary. (This GMP is based on recommendations found in 40 CFR 241.205-3.)
...	...
8-24. 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.
...	...
8-25. 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. Verify that decomposition gases do not pose an explosion or toxicity hazard. (NOTE: This GMP is based on recommendations found in 40 CFR 241.206-3.)
...	...
8-26. 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.
...	...
8-27. 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.
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-28. 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. Verify that wastes that are easily moved by wind are covered as necessary to prevent their becoming airborne. Verify that onsite vegetation is cleared only as necessary. Verify that natural windbreaks are maintained. Verify that buffer strips and/or berms are used to screen the site from nearby residences and major roadways. Verify that salvage material is removed from the site frequently. (NOTE: This GMP is based on recommendations found in 40 CFR 208-3.)
...	...
8-29. Land disposal site cover material must meet certain criteria (40 CFR 241.209-1).	Verify that cover material is applied as necessary to: - minimize fire hazards - minimize infiltration of precipitation - minimize odors - minimize blowing litter - control gas venting - control vectors - discourage scavenging - provide a pleasing appearance.
...	...
8-30. Cover material should be applied according to specific recommendations (GMP).	Verify that cover material is applied daily regardless of weather. Verify that the thickness of the compacted daily cover is no less than 6 inches (in.). Verify that intermediate cover is applied on areas where additional cells are not to be constructed for extended periods of time. 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). Verify that the surface grade promotes surface water runoff without erosion to minimize infiltration. Verify that intermediate cover is at least 1 foot (ft) thick and final cover is at least 2 ft thick. (NOTE: This GMP is based on recommendations found in 40 CFR 209-3.)
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-31. 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.
...	...
8-32. 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: - spread solid waste in layers no more than 2 ft 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.)
...	...
8-33. 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.
...	...
8-34. 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. Verify that personal safety devices such as hearing and eye protection, are provided to facility employees. Verify that equipment is provided with safety devices. Verify that provisions to extinguish fires exist. Verify that communications equipment is available onsite. Verify that scavenging is prohibited. Verify that access to the site is controlled. Verify that traffic signs or markers are provided to promote an orderly traffic pattern to and from the discharge area. (NOTE: This GMP is based on recommendations found in 40 CFR 241.211-2 and 241.211-3.)
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-35. 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.
...	...
8-36. Records being maintained at land disposal site should cover specific topics (GMP)	Verify that records are maintained and cover at least: - 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).)
...	...
Closure	
8-37. 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. (NOTE: This GMP is based on recommendations found in 40 CFR 241.212-3(b).)
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
SITE CRITERIA FOR NEW LANDFILLS	
8-38. 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 other necessary environmental standards.
...	...
8-39. New landfills should meet certain location and design criteria (GMP).	Verify that the hydrogeology of the site has been evaluated. Verify that onsite soil characteristics have been evaluated. Verify that environmental factors, climatological conditions, and socioeconomic factors have been considered in site selection. Verify that the site is easily accessible to vehicles. Verify that the site location will not attract birds and pose a hazard to low-flying aircraft. (NOTE: This GMP is based on recommendations found in 40 CFR 241.202-2.)
...	...
8-40. 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.
...	...
8-41. Facilities should survey for and be aware of old disposal sites at the facility (GMP).	Determine if there are any old disposal sites by interviewing personnel. Determine whether a records review has been done to identify former disposal sites.
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DISPOSAL OF REFUSE FROM OUTSIDE THE UNITED STATES **8-42.** 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), 330.400(g)(1), and 300.400(g)(2)). ... **MEDICAL WASTE** **8-43.** Contaminated reusable sharps are required to be placed in containers which meet specific requirements as soon as possible after use until properly reprocessed (29 CFR 1910.1030(d)(2)(viii) and 1910.1030(d)(4)(ii)(E)). ...	Verify that garbage on or unloaded from vessels or aircraft arriving in the places listed below complies with certain inspection and disposal requirements: - 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. Verify that in arriving vessels and aircraft: - the garbage is contained in tight leakproof covered receptacles inside guard rails on vessels - the garbage is removed in tight, leakproof covered containers under direction of a U.S. Department of Agriculture (USDA) inspector to an approved facility for incineration, sterilization, or grinding into an approved sewage system, or - the garbage is removed for other handling and under supervision approved by the USDA. Verify that the facility has received approval from Administrator, Animal and Plant Health Inspection Service, USDA for use of sewage system for disposal. ... Verify that contaminated reusable sharps are placed in containers that are: - puncture resistant - labeled or color coded - leakproof on the sides and bottom. Verify that reusable sharps that are contaminated with blood or other potentially infectious materials are not stored or processed in a manner that required employees to reach by hand into the containers. ...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-44. Specimens of blood or other potentially infectious material are required to be placed in a container that prevents leakage during collection, handling, processing, storage, transport, or shipping and specific labeling and handling requirements followed (29 CFR 1910.1030(d)(2)(xiii)).	Verify that containers are: - labeled and color coded - closed prior to being stored, transported or shipped. (NOTE: When the facility utilizes *universal precautions* in the handling of all specimens, the labeling/color coding of specimens is not necessary if the containers are recognizable as containing specimens.) Verify that if outside contamination of the primary container occurs, it is placed in a second container. Verify that if the specimens could puncture the primary container, the primary container is placed in a secondary container which is puncture resistant.
...	...
8-45. Contaminated sharps are required to be discarded immediately in containers meeting specific requirements (29 CFR 1910.1030(d)(4)(iii)(A)).	Verify that contaminated sharps are placed in containers that are: - closeable - puncture resistant - leakproof on sides and bottoms - labeled or color coded. Verify that during use, containers for contaminated sharps are: - easily accessible - maintained upright throughout use - replaced routinely and not be allowed to overfill. Verify that when the containers of contaminated sharps are being moved from the area of use, the containers: - are closed - placed in a secondary container if leakage is possible. Verify that reusable containers are not opened, emptied, or cleaned manually or handled in any other manner that would expose employees to risk.
...	...
8-46. Regulated wastes (see definitions) are required to be handled and placed in containers that meet specific standards (29 CFR 1910.1030 (d)(4)(iii)(B)).	Verify that regulated wastes are placed in containers that: - are closeable - constructed to contain all contents and prevent leakage of fluids - labeled or color coded - closed prior to removal. (NOTE: Regulated wastes which have been decontaminated need not be labeled or color coded.) Verify that if outside contamination of the regulated waste occurs, it is placed in a second container.
...	...

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
8-47. All bins, pails, cans, and similar receptacles intended for reuse, that have the likelihood of becoming contaminated with blood or other potentially infectious materials are required to be inspected and decontaminated on a regularly scheduled basis (29 CFR 1910.1030(d)(4)(ii)(C)).	Verify that receptacles with the potential for contamination are regularly inspected and decontaminated.
...	...
8-48. Labels affixed to containers of regulated wastes, refrigerators and freezers containing blood or other potentially infectious materials, and other containers used to store, transport, or ship blood or other potentially infectious materials must meet specific standards (29 CFR 1910.1030(g)(1)(i)).	Verify that the labels: - include the biohazard symbol - are fluorescent orange or orange-red or predominantly so, with lettering and symbols in contrasting color - are affixed as closely as possible to the container to prevent loss or removal. (NOTE: Red bags or containers may be used as a substitute for labels.) (NOTE: The following are exempted from labeling requirements: - containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use - individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transportation, shipment, or disposal.) (NOTE: Regulated waste that has been decontaminated need not be labeled or color coded.)

INSTALLATION:	COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT Federal Aviation Administration	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

Section 9

Special Pollutants Management

(Radon, Asbestos, PCBs and Noise)

Section 9

SPECIAL POLLUTANTS MANAGEMENT

A. Applicability

This section applies to all FAA facilities. Currently this section contains checklists for polychlorinated biphenyls (PCBs), asbestos, radon gas, and environmental noise. PCBs and asbestos are regulated on the Federal level by the U.S. Environmental Protection Agency (USEPA), though in some cases states have also promulgated regulations.

Since FAA personnel are not directly involved in the demolition and/or renovation of buildings, the asbestos management regulations pertaining to those activities have not been included in this section.

The Special Pollutant Section is used to determine the compliance status of the management activities associated with:

- PCBs and in-service and out-of-service PCB items
- the removal of asbestos from buildings and its ultimate disposal
- testing for potential radon exposure
- limiting environmental noise.

B. Federal Legislation

This section contains information on four special pollutants: PCBs, Asbestos, Radon, and Noise.

(NOTE: Additional pollutants may be added as USEPA regulates other specific pollutants.)

- **PCBs**

- *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 ensure 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 make its services, personnel, and facilities available (with or without reimbursement) to the USEPA to assist the USEPA in the administration of this Act; and 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)).

- **Asbestos**

- The purpose of the *Toxic Substances Control Act* regarding asbestos hazard is to:
    1. provide for the establishment of Federal regulations which require inspection for asbestos-containing material and implementation of appropriate response actions with respect to asbestos-containing material in the Nation's schools in a safe and complete manner
    2. mandate safe and complete periodic reinspection of school buildings following response actions, where appropriate
    3. 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 Asbestos Hazard Emergency Response Act (AHERA) of 1986.* This Act, last 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:
  1. provide for the establishment of Federal regulations which require inspection for asbestos-containing material and implementation of appropriate response actions with respect to asbestos-containing material in the Nation's schools in a safe and complete manner
  2. mandate safe and complete periodic reinspection of school buildings following response actions, where appropriate
  3. 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 Hazardous Materials Transportation Act.* This Act was amended in 1978 to regulate the transport of asbestos materials. The regulations are contained in 49 CFR 172-177. In particular, 49 CFR 177 requires that asbestos must be loaded, handled, and unloaded in a manner that will minimize occupational exposure to airborne asbestos. Asbestos wastes which are transported for disposal at a landfill or other disposal facility must meet all applicable requirements.

- **Radon**

  There are currently no legal standards for radon in residential housing; however, USEPA recommends mitigation actions be taken when the average annual radon concentration in the building exceeds 4 picoCuries per liter (pCi/L) of air There is no absolute danger level.

  The national long-term goal of the United States with respect to radon levels in building 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 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)).

- **Noise**

  - *Noise Control Act of 1972.* This Act, (Public Law (PL) 92-574, 42 USC 4901-4918), as amended:
    1. establishes a means for effective coordination of Federal research and activities in noise control
    2. authorizes the establishment of Federal noise emission standards for products distributed in commerce
    3. provides information to the public respecting the noise emission and noise reduction characteristics of such products.

    The following categories of products which produce noise are covered by this Act:
    1. Construction equipment.
    2. Transportation equipment (including recreational vehicles and related equipment).
    3. Any motor or engine (including any equipment of which an engine or motor is an integral part).
    4. Electrical or electronic equipment.

    The following articles are not covered by the Act (42 USC 4902 (3)):
    1. Aircraft, aircraft engine, propeller, or appliance.
    2. Military weapons or equipment designed for combat use.
    3. Rockets or equipment designed for research, experimental, or developmental work to be performed by the National Aeronautics and Space Administration (NASA).
    4. 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)).

  - *Aviation Safety and Noise Abatement Act of 1979.* This Act, (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

• PCBs

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 which 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 to a lower concentration. For example, regulated PCBs in one state are defined to be materials and fluids which contain PCBs at a concentration greater than 7 ppm.
- Shipments of PCBs may require manifest documents.
- Analysis 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 also be required.
- Generators of PCBs and PCB items may be required to obtain disposal permits.

• Asbestos

Many state and local governments have enacted standards more stringent than the Federal requirements concerning certification of asbestos workers and disposal of asbestos waste. If the facility is engaging in asbestos removal or disposal, contact the appropriate state and local agencies.

• Radon

State and local governments may enact radon control standards.

- **Noise**

State, regional and local governmental agencies may develop zoning and planning ordinances which have the potential to effect FAA facilities and their operations. As a general rule, states tend to treat environmental noise as a source specific pollutant whose emissions will be controlled by the locally effected community.

D. FAA Regulations/Requirements

- None at this time.

E. Key Compliance Requirements

- **PCBs**

The Federal PCB regulations allow PCB equipment (transformers and capacitors) which are in service to remain in service. While in service, they must be labeled, 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 (less the fluid) must be disposed of in a specially licensed landfill.

- **Asbestos**

NESHAP regulations apply to existing and new stationary sources. The regulations are based on health effects and a strong reliance on technological capabilities. FAA facilities involved in the demolition or renovation of buildings which contain asbestos are effected by these regulations. USEPA notification must be given if renovation or demolition is planned. Facilities that are 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 leak-proof containers with proper hazard labeling.

- **Radon**

SUGGESTED MITIGATION TIME FRAME

Radon Level (pCi/L)	Mitigate:
Greater than 200[1]	1 month (mo) or move the occupants
200-20[1]	6 mo
20-8[2]	1-4 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.

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

- *Asbestos* - substances comprised of or derived from actinolite, amosite, anthophyllite, chrysotile, crocidolite, or tremolite (40 CFR 61.14).

- *Asbestos-containing Waste Materials* - means mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of 40 CFR 141. This term also includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. However, as applied to demolition and renovation operations, this term 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).

- *Capacitor* - a device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric. Types of capacitors are as follows (40 CFR 761.3):
    1. *Small Capacitor* - a capacitor that contains less than 1.36 kg (3 lbs.) of dielectric fluid.
    2. *Large High-voltage Capacitor* - a capacitor that contains 1.36 kg (3 lbs.) or more of dielectric fluid and that operates at 2,000 volts (a.c. or d.c.) or above.
    3. *Large Low-voltage Capacitor* - a capacitor that contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates at 2,000 volts (a.c. or d.c.).

- *Category I Nonfriable Asbestos-Containing Material (ACM)* - asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than one percent asbestos (40 CFR 61.141).

- *Category II Nonfriable ACM* - any material including Category I nonfriable ACM containing more than one percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure (40 CFR 61.141).

- *Chemical Waste Landfill* - landfill at which protection against risk of injury to health or the environment from mitigation of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating engineering, and operations, the landfill as required (40 CFR 761.3).

- *Commercial Asbestos* - any material containing asbestos that is extracted from ore and has value because of its asbestos content (40 CFR 61.141).

- *Commercial Storer of PCB Waste* - the owner or operator of each facility that is subject to the PCB storage facility standards of 40 CFR 761.65, and 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 forms 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).

- *Cutting* - to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching (40 CFR 61.141).

- *dBA* - sound level in decibels, measured using the A-weighting network of a sound level meter.

- *dBC* - a sound level in decibels, measured using the C-weighting network of a sound level meter

- *Decibel (dB)* - sound is measured in decibels. The zero on the decibel scale is based on the lowest sound level that a healthy, unimpaired human ear can hear. Decibels are not linear, but representative points on a sharply rising (exponential) curve.

- *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 a facility (40 CFR 61.141).

- *Disposal* - intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items (40 CFR 761.3).

- *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).

- *Emergency Situations* - for continuing use of a PCB transformer exists when (40 CFR 761.3):
    1. 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
    2. immediate replacement is necessary to continue service for power users.

- *Environmental Noise* - noise sources that interferes with desired activities, or cause annoyance. These desired activities include but are not limited to, sleep, recreation, and speech. Environmental noise also is 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.

- *Facility Component* - any part of any facility, including equipment (40 CFR 61.141).

- *Friable Asbestos Material* - any material that contains more than 1 percent asbestos by weight and can be crumbled, pulverized, or reduced to powder, when dry, 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 the handling of asbestos-containing materials (40 CFR 61.141).

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

- *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).

- *In Poor Condition* - the binding of the materials 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 will not be deposited and where the surface is not disturbed by vehicular traffic (40 CFR 61.141).

- *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).

- *Mark* - the descriptive name, instructions, cautions, or other information applied to PCBs and PCB items, or other objects subject to these regulations (40 CFR 761.3).

- *Marking* - the marking of PCB items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or by any other method that meets the 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 which 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 PCB except that 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).

- *Non-scheduled 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 dock (40 CFR 61,141).

- *PCB or PCBs* - an chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such 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, and pipes (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-Contaminated Electrical Equipment* - any electrical equipment, including but not limited to transformers, capacitors, circuit breakers, reclosers, voltage, regulators, switches, electromagnets, and cable, that contain 50 ppm or greater PCB, but less than 500 ppm PCB (40 CFR 761.3).

- *PCB Equipment* - any manufactured item, other than a PCB container or a PCB article container, which 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 PCB or PCBs (40 CFR 761.3).

- *PCB Transformer* - any transformer that contains 500 ppm PCB or greater (40 CFR 761.3).

- *PCB Waste* - those PCBs and PCB Items that are subject to the disposal requirements of Subpart D of 761 (40 CFR 761.3).

- *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 the amount of friable asbestos material that will be removed or stripped within a given period of time 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).

- *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).

- *Radon-222* - a naturally occurring, inert, radioactive gas that is formed from the radioactive decay of uranium.

- *Regulated Asbestos-Containing Material (RACM)* - includes friable asbestos material; Category I nonfriable ACM that has become friable; Category I nonfriable ACM that has been subjected to grinding, casting, cutting, or abrading; and Category II nonfriable ACM that has a high probability of becoming crumbled, crushed, or pulverized (40 CFR 61.141).

- *Remove* - to take out RACM from any structure (40 CFR 61.141).

- *Renovation* - altering in any way one or more structure components. Operations in which load-supporting structural members are wrecked or taken out are excluded (40 CFR 61.141).

- *Retrofill* - to remove PCB or PCB contaminated dielectric fluid and replace it with either PCB, 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).

- *Strip* - to take off RACM from any part of a facility (40 CFR 61.141).

- *Structural Member* - any load-supporting member of a structure, 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 material, or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed water vapor (40 CFR 61.141).

SPECIAL POLLUTANTS MANAGEMENT

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:
All facilities	9-1 through 9-4
PCBs:	
General	9-5 through 9-9
Records	9-10 through 9-12
Transformers	9-13 through 9-20
PCB Spills	9-21 through 9-23
PCB Items	9-24 through 9-27
PCBs in Research	9-28
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Disposal	9-36 through 9-47
ASBESTOS	
All Facilities	9-48 through 9-50
RADON	
All Facilities	9-51 through 9-53
NOISE	
All Facilities	9-54 and 9-55

SPECIAL POLLUTANTS MANAGEMENT

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
- Asbestos management plan and operating plan
- Notifications to Regulators concerning asbestos disposal
- Records of onsite disposal and transportation and off-site 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
- List of buildings insulated with asbestos or housing asbestos-containing materials
- Record of demolition or renovation projects completed in the past 5 yr that involve friable asbestos
- Decision documents / records of decision
- Administrative Record
- A-106 Pollution Abatement Plan
- Complaint log from local community
- Spill Prevention and Countermeasure (SPCC) Plan
- Copies of any state regulations on the use and/or disposal of Special Pollutants (if applicable).

Physical Features to Inspect

- PCB storage areas
- Equipment, fluids and other items used or stored at the facility containing PCBs
- Pipe, spray-on, duct, and troweled cementitious insulation and boiler lagging
- Ceiling and floor tiles
- Power generating or other noise
- Emergency generators

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
9-1. Determine actions or changes since previous review of special pollutants management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report.
...	...
9-2. Copies of all relevant Federal, FAA, state, and local regulations and guidance documents on PCB, Asbestos, Radon Gas and Noise management should be available at the facility (GMP).	Verify that copies of the following regulations are available and kept current: - Executive Order (EO) 12088, *Federal Compliance With Pollution Control Standards.* - 40 CFR 61, Subpart M, *National Emission Standards for Hazardous Air Pollutants.* - 40 CFR 761, *PCB Manufacturing, Processing, Distribution in Commerce and Use Prohibitions.*
...	...
9-3. Facilities are required to abide by state and local regulations (EO 12088, Section 1-1).	Verify that the facility is abiding by state and local requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (NOTE: Issues typically regulated by state and local agencies include: - definitions of PCB-contaminated - PCB storage, labeling, and disposal requirements - certification of individuals sampling and/or working with asbestos - renovation and demolition procedures - asbestos handling and disposal procedures - motor vehicle noise - construction noise.)
...	...
9-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning special pollutants issues have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

PCBs
 	
General
 	
9-5. Certain regulations and practices should be followed to ensure the health of personnel who come in contact with PCBs (GMP).
	Verify that personnel are instructed to practice the following:
	
	- wash hands and exposed skin during workshift before:
	  - eating
	  - drinking
	  - smoking
	  - using toilet facilities
	- shower thoroughly before changing into street clothes.
	
	Verify that protective clothing is provided and worn when working with PCBs:
	
	- gloves
	- boots
	- overshoes
	- coveralls
	- safety glasses
	- face shields.

...	...
9-6. Airborne contamination of PCBs should be assessed and certain precautionary practices to protect personnel must be followed (GMP).	Determine if measurements are made of air in the workplace to determine if airborne PCB contamination is present. Verify that if the contamination level is at or above 0.5 milligram (mg) PCB/cubic meter (m^3): - respirators are worn by all personnel - nondisposable equipment and clothing are thoroughly washed before being stored for reuse.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-7. Certain records and practices should be enacted for employees exposed to PCBs (GMP).	Verify that employees with potential exposure to PCBs are given medical examinations that include: - medical history - physical examination emphasizing liver function and skin condition. Verify that the liver function tests include: - serum glutamic oxaloacetic transaminase (SGOT) - serum glutamic pyuvic transaminase (SGPT) - gamma glutamyl transpeptidase (GGTP). Verify that if respirators are used, each employee is checked annually for ability to work using such equipment. Verify that records and results of medical examinations are maintained for at least 40 yr after the termination of employment.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-8. Certain equipment that contains PCBs must be marked with an M_L marking (40 CFR 761.40 and 761.45).	(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 centimeter (cm) (6 inch (in.)) on each side. If the article is too small to accommodate this size, a smaller label (M_S) may be used.) 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 9-1 for a sample of the marking): - 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). 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 facility. (NOTE: Marking of PCB-contaminated Electrical Equipment (50 - 500 ppm) is not required.) (NOTE: Appendix 9-2 contains a list of manufacturers that produced PCB contaminated dielectric fluid.)
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-9. Generators, transporters, and disposers of PCB waste are required to have a USEPA ID No. (40 CFR 761.202 through 761.205).	(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.) Determine if the facility is a generator, transporter, or disposer of PCB waste. Verify that facilities which generate PCB waste have a USEPA ID No. before processing, storing, dispensing, transporting, or offering for transport PCB waste. Verify that facilities which transport or disposed of PCB waste have a USEPA ID No. If facility must file, check that Form 7710-53, *Notification of PCB Waste Activity*, was filed with USEPA by 4 April 1990 and a USEPA ID No. was obtained.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

Records
 	
9-10. A written annual document log must be prepared by 1 July of each calendar year, covering the previous year for all facilities 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 Transformers (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.
	
	Review the written annual document log for the following:
	
	- identification of facility
	- calendar year covered
	- manifest number for every manifest generated
	- total number (by type) of PCB Articles, PCB Article Containers, and PCB Containers placed into storage for disposal or disposed of during the calendar year
	- total weight placed into storage for disposal or disposed of during the calendar year of:
	  - PCBs in PCB Articles
	  - contents of PCB Article Container
	  - contents of PCB 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:
	
	- 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 kilograms (kg)) in each PCB Article Container
	- serial number or other unique ID No. (except for bulk wastes)
	- description of the contents for PCB Containers and Article Containers.

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-10 (continued)	Review the annual record and determine if the following information is provided: - 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.
...	...
9-11. 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.
...	...
9-12. Storage and disposal facilities for PCBs shall maintain specific records for 3 yr (40 CFR 761.180(f)).	Verify that facilities which store or dispose of PCBs collect and maintain the following records for 3 yr: - 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 facility - any applications and related correspondence concerning wastewater discharge permits, solid waste permits, building permits, or other permits and authorizations.
...	...
Transformers	
9-13. 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)).	Review PCB inventory for any PCB Transformers on the facility, in use or in storage for reuse, that pose an exposure risk to food and feed.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
9-14. PCB Transformers with concentrations of PCBs of 500 ppm or greater are subject to certain registration requirements (40 CFR 761.30(a)(1)(vi)).	Verify that all PCB Transformers, including those in storage for reuse, are registered with facility fire department, or the fire department with jurisdiction, with the following information: - physical location of PCB Transformer(s) - principle constituent of dielectric fluid (i.e., PCBs, mineral oil, silicone oil, etc.) - name and telephone number of contact person knowledgeable of PCB Transformer(s).
...	...
9-15. Combustible materials, including but not limited to paints, solvents, plastics, paper, and sawn wood, must not be stored by a PCB Transformer (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 of a PCB Transformer or PCB Transformer enclosure.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-16. PCB Transformers of 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)). ...	Review PCB inventory for any transformers located in or near commercial buildings. 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. Verify that there are no network PCB Transformers with higher secondary voltages (equal to or greater than 430 volts (v), including 480/277 v systems) in or near commercial buildings. 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: - Radial PCB Transformers and lower secondary voltage network PCB Transformers (voltage less 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. 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: - electrical protection such as current-limiting fuses to avoid transformer ruptures - disconnect equipment to insure complete deenergization 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. If PCB Transformers are in use in or near commercial buildings, confirm that they have been registered with the Directorate of Engineering and Housing (DEH) and the following information provided: - specific location of PCB Transformer(s) - principal constituent of dielectric fluid (i.e., PCBs, mineral oil, silicone oil, etc.) - type of transformer. ...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-17. PCB Transformers are required to be properly serviced (40 CFR 761.30(a)(2)).	Verify that servicing activities are properly conducted as follows: - transformers classified as PCB-contaminated Electrical Equipment (50 - 500 ppm PCBs) are only serviced with dielectric fluid containing less than 500 ppm PCB. - the transformer coil is not removed during servicing of PCB Transformers with PC 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 with PCB concentrations of 500 ppm or greater are not mixed with or added to dielectric fluid from PCB-contaminated Electrical Equipment (50 - 500 ppm PCBs). - dielectric fluids containing less than 500 ppm PCBs 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 - 500 ppm PCBs). (NOTE: PCB Transformers may be serviced with dielectric fluid at any concentration.)
...	...
9-18. Inspections must be performed once every 3 mo for all in-service PCB Transformers with greater than 500 ppm PCB (40 CFR 761.30 (a)(1)(ix) and 761.30(a) (1)(xii) through 761.30(a) (1)(xiv)).	Review inspection records to verify that applicable transformers are inspected at least once every 3 mo. Determine whether any PCB Transformers have been leaking. Verify that proper reporting procedures have been followed if any leaking transformers have been discovered. Verify that the following information is recorded for each PCB Transformer inspection: - location of transformer - dates of each visual inspection - date when any leak was discovered - name of person conducting inspection - location and estimate of the 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 inspections 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 inspections 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.

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-19. PCB Transformers with PCB concentrations of 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)).	Determine if cleanup and/or containment of released PCBs has been initiated within 48 h of its detection or as soon as possible. Verify that leaking PCB Transformers are inspected daily. Determine if plans exist to repair or replace transformers to eliminate the source of the leak. Verify that cleaned up material is disposed of according to appropriate requirements.
...	...
9-20. When a PCB Transformer with concentrations of PCBs 500 ppm or greater is involved in a fire, the facility 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. Verify that the NRC was notified and the following measures were taken: - floor drains were blocked - water runoff was contained.
...	...
PCB Spills	
9-21. Facilities are required to report spills of more than 10 pounds (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 10 lb or more directly contaminates surface water, sewers, or drinking water the facility notifies the regional USEPA office within 24 h after discovery of the spill and acts on the guidance given by the USEPA. Verify that if a spill of 10 lb or more directly contaminates grazing land or a vegetable garden the facility notifies the USEPA regional office within 24 h after discovery and begins the cleanup of the spill. Verify that when a spill of 10 lb or more occurs which does not directly contaminate surface waters, sewers, drinking water supplies, grazing land, or a vegetable garden the facility notifies the USEPA Regional office within 24 h after discovery of the spill and begins decontamination of the spill area. (NOTE: Spills of more than 1 lb are required to be reported to the NRC under 40 CFR 302.1 through 302.6, see appropriate checklist items in *Hazardous Materials Management.*)
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-22. Cleanup of low concentration spills of less than 1 lb of PCBs (less than 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. Verify that all soil within the spill area (visible traces of soil and buffer of 1 lateral foot (ft) 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). Verify that the above cleanup requirements are done within 48 h after identifying the spill unless an emergency or adverse weather delays the process. Verify that the cleanup is documented with records and certification of decontamination and the records are maintained for 6 yr. (NOTE: The final numerical cleanup standards do not apply to spills directly into surface waters, drinking water, sewers, grazing lands, and vegetable garden.) (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.)
...	...
9-23. Cleanup of high-concentration spills and low concentration spills involving 1 lb or more of PCBs by weight (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: - notification of the USEPA regional office and the National Response Center (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 ft 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: - contaminated solid surfaces are cleaned to a PCB concentration of 100 $\mu g/m^2$ (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 facility if a label to notice is placed in the area indicating the level of cleanup - post-cleanup sampling is done.

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
9-23. (continued)	Verify that if the spill occurs in a restricted access area other than an outdoor substation: - high-contact solid surfaces are cleaned to 10 $\mu g/100\ cm^2$ (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 μg or 100 $\mu g/100\ cm^2$ and encapsulated at the option of the facility - 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. Verify that spills in nonrestricted access locations are decontaminated as follows: - 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 $\mu g/100\ cm^2$ (as measured by standard wipe tests) - indoor vault areas and low-contact, outdoor, impervious solid surfaces are decontaminated to 10 $\mu g/100\ cm^2$ - at the option of the facility, low-contact, outdoor, nonimpervious solid surfaces are cleaned to either 10 or 100 $\mu g/100\ cm^2$ and encapsulated - soil is decontaminated to 10 ppm PCBs by weight provided that the soil is excavated to a minimum depth of 10 inches (in.) and replaced with clean soil - post-cleanup sampling is done. Verify that records documenting all cleanup and decontamination are maintained for 5 yr. (NOTE: The occurrence/discovery of the spill on the weekend or over time 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.)
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PCB Items	
9-24. 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) through 761.30(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. Verify that no fluid containing greater than 50 ppm PCB is added to heat transfer or hydraulic systems. 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. Verify that heat transfer or hydraulic systems are free from leaks of dielectric PCBs.
...	...
9-25. 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 at the facility that contain greater than 500 ppm PCB and pose an exposure risk to food or feed. Verify that electromagnets that contain greater than 500 ppm PCB and which pose an exposure risk to food or feed are inspected at least weekly to determine if they are leaking. 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. 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 which contains less than 500 ppm PCB. Verify that PCBs removed or captured are either reused as dielectric fluid or disposed of properly. Verify that dielectric fluid containing a mixture of fluids with less than 500 ppm PCBs are not used as dielectric fluid in any electrical equipment.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-26. 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. 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. Verify that capacitors have been free from leaks of dielectrical PCBs.
...	...
9-27. Circuit breakers, reclosers, and cable may contain PCBs at any concentration for 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 facility are serviced using only dielectric fluid which contains less than 50 ppm PCB and have been free from leaks.
...	...
PCBs in Research	
9-28. The use of pigments containing PCBs in research or microscopy or in miscellaneous items is subject to certain conditions (40 CFR 761.30(g), 761.30(j), and 761.30(k)).	Verify that pigments used at the facility contain PCBs in concentrations less than 50 ppm. Verify that pigments are handled in enclosed conditions.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
PCB Storage	
9-29. 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)).	Verify that the following provisions are present by inspecting the PCB storage area: - the roof and walls of the building in which the PCBs are stored must be constructed so as to exclude rainfall from contacting PCBs and PCB items - a 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 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 one yr from the date they were placed in storage.
...	...
9-30. 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 and are properly marked in areas used as a 30-day storage area: - nonleaking PCB Articles and PCB Equipment - leaking PCB Articles and PCB Equipment placed in a nonleaking PCB Container which contains sufficient 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 50-500 ppm have been placed when Containers are marked to indicate less than 500 ppm PCB. Verify that area has been included in the facility Spill, Prevention, Control, and Countermeasure (SPCC) Plan.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-31. Nonleaking and structurally undamaged PCB Large, High-Voltage Capacitors and PCB-contaminated Electric Equipment 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)).	Determine if available unfilled storage space in the storage area is is equal to at least 10 percent of the volume of capacitors and electrical equipment stored outside. Verify that capacitors and equipment stored outside the storage facility are on pallets and inspected at least weekly.
...	...
9-32. 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: - movable equipment used for handling PCBs and PCB Items that directly contact PCBs is not removed from storage area 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 properly disposed - 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.
...	...
9-33. Containers used for the storage of PCBs must 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. Verify that DOT specifications are on drums/containers. Typical specifications are 5, 5B, 17C. (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. Verify that if the facility uses containers larger than DOT containers, it prepares a SPCC plan concerning the containers storing PCBs.)
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Transportation	
9-34. A generator who offers a PCB waste for transport for commercial off-site storage or off-site disposal must prepare a manifest (40 CFR 761.207 through 761.210).	(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 500 ppm by dilution.) Verify that a manifest has been prepared when needed and that it contains (use USEPA Form 8700-22): - the identity of PCB Waste, the earliest date of removal from service for disposal and the weight in kilograms of the waste for bulk load of PCBs - 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 kilograms 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. Verify that the generator maintains a copy of the signed manifest for at least 3 yr after receipt of waste by the initial transporter.
...	...
9-35. 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 35 days of the date the waste was accepted by the initial transporter, an Exception Report was filed with the USEPA containing the following information: - 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.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
Disposal **9-36.** 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: - the identity of the disposal facility: by name, address, and USEPA identification number - 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: - 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. ...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

9-37. 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 if any PCB fluids meeting these criteria were processed for disposal in the last year.
	
	Verify that disposal was done at:
	
	- 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:
	
	- the boiler is rated at a minimum of 50 MBtu/h
	- the carbon monoxide 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 carbon monoxide 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 volume 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 carbon monoxide concentrations and excess oxygen percentages in the stack gas while burning the waste fluid
	  - measure and records the carbon monoxide concentration and excess oxygen percentage in the stack gas at regular intervals of no longer than 60 minutes (min) if the boiler will burn less than 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 carbon monoxide 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.
	
	Verify that the following information is obtained by persons burning waste fluid in a boiler and kept at the boiler location for 5 yr:
	
	- 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.
	
	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-38. 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 reviewing manifests for a PCB shipments over the past 3 yr. (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 PCB at concentrations greater than 50 ppm - PCB Articles.) ...

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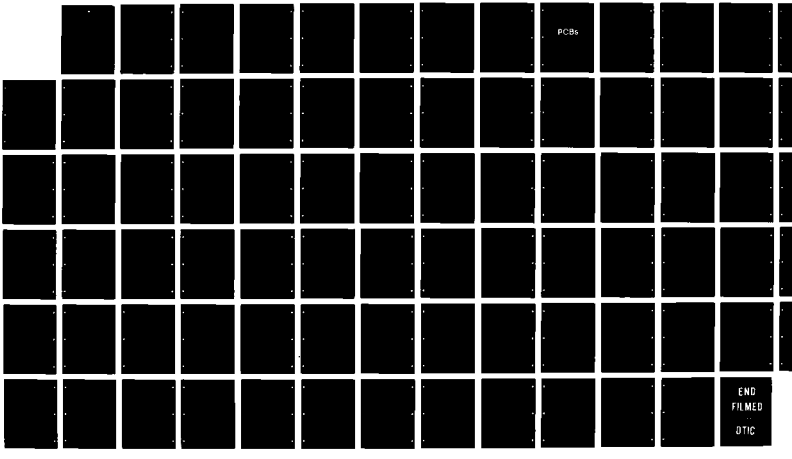

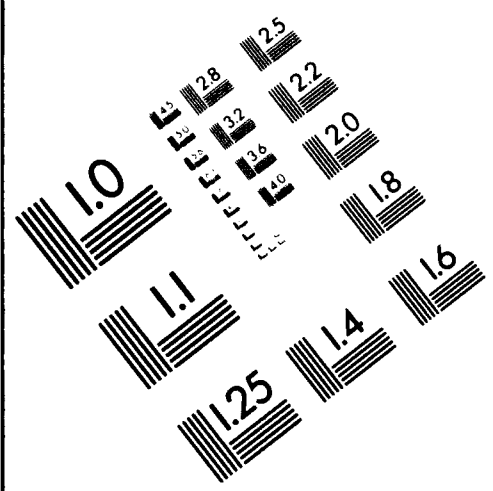

Association for Information and Image Management
1100 Wayne Avenue, Suite 1100
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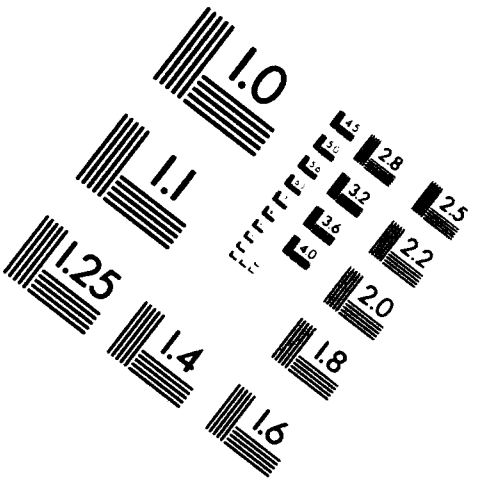
301/587-8202



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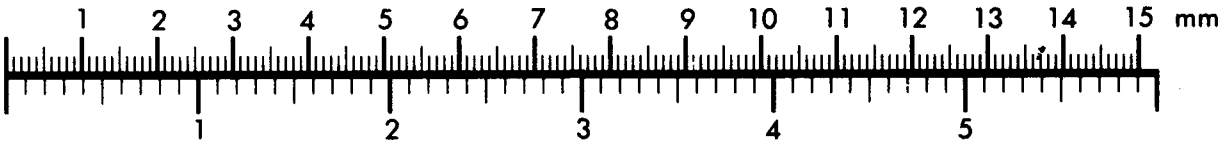

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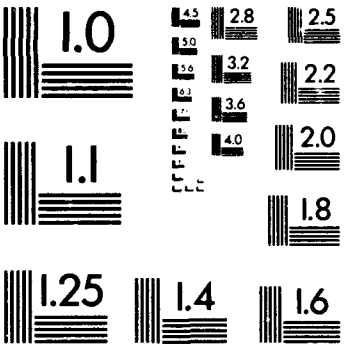

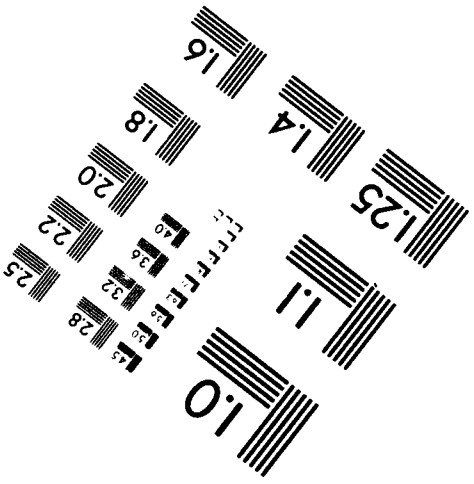

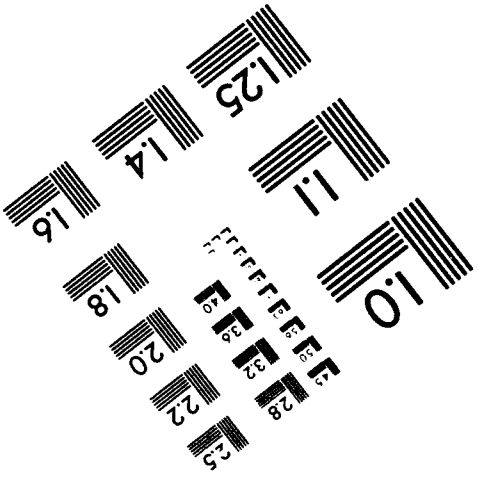

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COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

9-39. 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 761.30(a)(2)).
 	
...
	Verify that mineral oil dielectric fluid as described is disposed of in one of the following ways:
	
	- 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:
	
	- the boiler is rated at a minimum of 50 MBtu/h
	- the carbon monoxide 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 carbon monoxide 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 ten 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 carbon monoxide concentrations and excess oxygen percentages in the stack gas while burning mineral oil dielectric fluid
	  - measure and records the carbon monoxide 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 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 carbon monoxide 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.
	
	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:
	
	- emissions data
	- the quantity of mineral oil dielectric fluid burned in the boiler each month.
	
	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-40. 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, and verify that disposal was conducted at a properly licensed facility.
...	...
9-41. PCB Transformers with PCB concentrations of 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. 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 then drained thoroughly.
...	...
9-42. 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 as follows: - PCB Small Capacitors (less than 3 lb of PCBs) are disposed of in a solid waste landfill - PCB Large, High- or Low-Voltage Capacitors (greater than 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.
...	...
9-43. 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. 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.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-44. PCB-contaminated Electrical Equipment (50 - 500 ppm PCB), 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.
...	...
9-45. 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: - 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.
...	...
9-46. PCB Containers shall be disposed of properly (40 CFR 761.60(c)).	Verify that PCB Containers with concentrations of 500 ppm or greater are disposed of in one of the following ways: - 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.
...	...

9-47. PCB contaminated fluids other than mineral oil dielectric fluid of concentrations greater than 50 ppm but less than 500 ppm shall be disposed of properly (40 CFR 761.60(a)(3)).	Determine if any PCB fluids meeting these criteria were processed for disposal in the last year.
	
	Verify that disposal was done at:
	- a USEPA-approved incinerator
	- a USEPA-approved chemical waste landfill
	- a high efficiency boiler, if:
	  - the boiler is rated at a minimum of 50 MBtu/h
	  - the boiler uses natural gas or oil.
	
	Verify that such PCB fluids were disposed of by an approved method at a properly licensed facility.

...	...

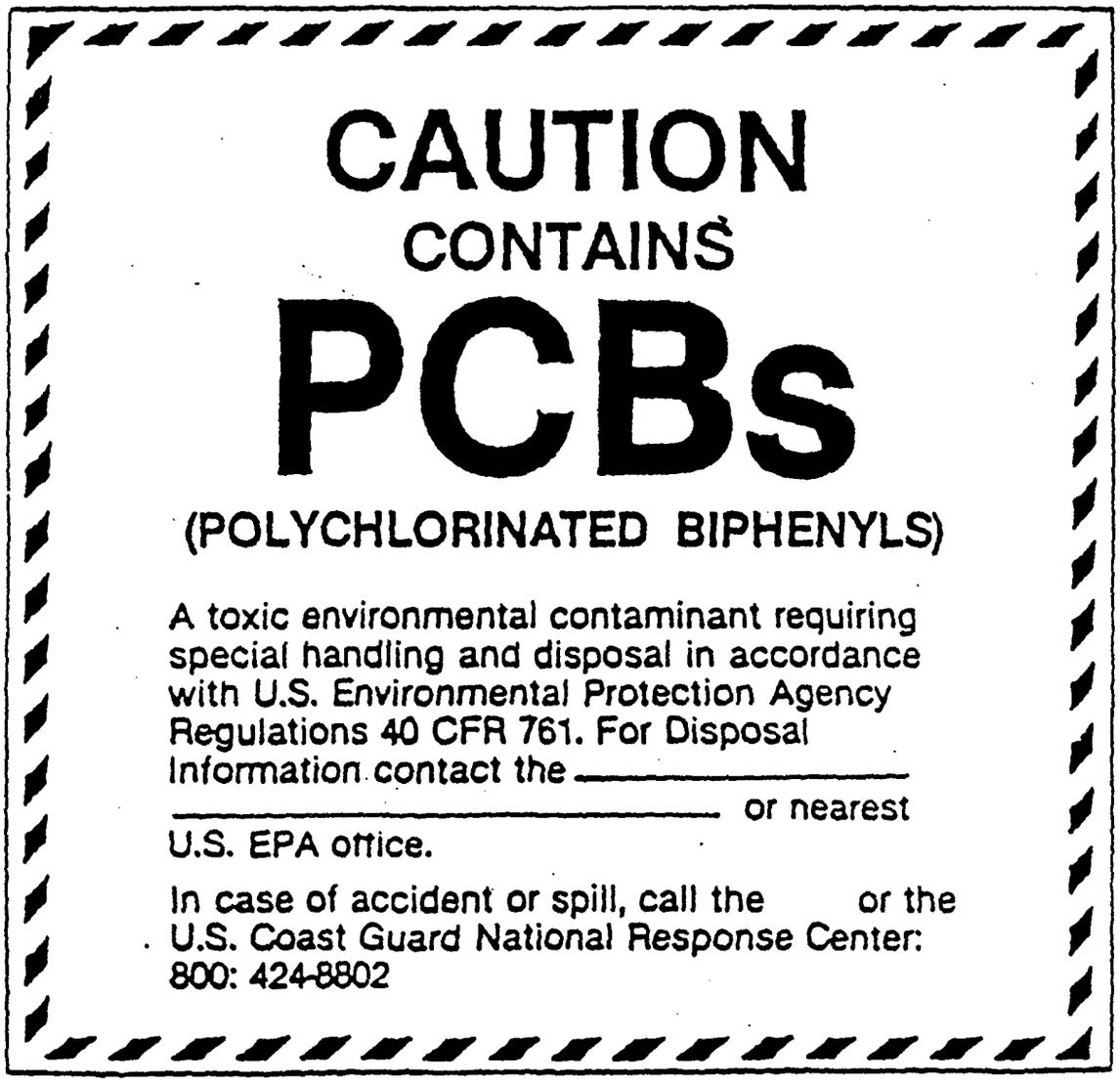
COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ASBESTOS **All Facilities**	
9-48. Facility buildings should be surveyed for asbestos and friable material with the potential to be contaminated with asbestos should be tested (GMP).	Verify that an asbestos survey has been done. Determine if there is friable insulation, roofing, or flooring at the facility by inspection. Verify that friable materials with the potential for asbestos contamination that are located in areas of worker exposure are tested.
...	...
9-49. Asbestos-containing waste materials are required to be disposed of properly (40 CFR 61.150(a) through 61.150(b)).	(NOTE: These requirements do not apply to Categories I or II nonfriable ACM that did not become crumbled, pulverized, or reduced to powder.) 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: - 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: - 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 OSHA - materials that don't fit in containers are put into leaktight wrapping. Verify that the waste generator deposits all asbestos-containing materials as soon as practical at one of the following: - a properly operated waste disposal site - a USEPA approved site that converts RACM and asbestos-containing waste material intro asbestos-free material.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
9-50. Asbestos containing waste must be transported according to specific parameters (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. 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. 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.
...	...
RADON GAS **All Facilities**	
9-51. Studies have shown a linkage between continuous exposure to radon gas and increased incidence of lung cancer. Awareness of this potential problem and precautions, if necessary, are a good management practice (GMP).	Determine whether a geological survey has been conducted of the facility area and if any of the strata are composed of one or more of the following: - granite - phosphate - shale - uranium.
...	...
9-52. Levels of indoor radon gas in excess of 4 pCi/L are considered dangerous (GMP).	Determine if radon gas survey has been done at the facility. Determine if the facility has had any radon gas measurements exceeding 4 pCi/L in an occupied building and if preventive measures are being taken to reduce exposure.
...	...
9-53. Primary mode of entry of radon gas into occupied space is through migration of soil gases. Lengthy, continued exposure is especially dangerous and most likely to occur in family housing units and underground command centers (GMP).	Determine whether any radon gas measurements exceeding 4 pCi/L have been found in any underground facilities, or any other structures occupied 80 manhours or more per year.
...	...

COMPLIANCE CATEGORY: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
NOISE **All Facilities**	
9-54. A single facility point of contact should be identified for noise complaints (GMP).	Verify that a point of contact has been identified. Verify that POC keeps a log of complaints on noises produced by activities and operations.
...	...
9-55. Protection against the effects of noise should be provided to personnel under certain conditions (GMP).	Confirm that protective devices are provided for personnel if the sound level: - exceeds 85 dB(A) continuous, or - 140 dB impulse.

Appendix 9-1

PCB Label Format



Appendix 9-2

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: SPECIAL POLLUTANTS MANAGEMENT Federal Aviation Administration	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

Section 10

Underground Storage Tank (UST) Management

Section 10

UST MANAGEMENT

A. Applicability

This section applies to FAA facilities that utilize underground storage tanks (USTs) for storing hazardous materials or petroleum products. The section presents review action items for the proper management of USTs. The evaluation of UST management ranges from the installation of new systems, to the maintenance of existing systems, to the repair, replacement, or permanent removal of USTs.

USTs have been in use for many years. Many states as well as local agencies have developed individual requirements for USTs, which may be more stringent than the Federal regulations. These requirements should be taken into consideration when evaluating the facility's UST management program.

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 USTs. It required the U.S. Environmental Protection Agency (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 have active UST programs. These various governments have developed regulations specific to the physical environment and the regulated communities' needs. It is important to review regulations at the state and local level to ensure that any differences such as reporting or notice requirements, and monitoring requirements can be complied with.

D. FAA Regulations/Requirement

- None at this time.

E. Key Compliance Requirements

- New Petroleum USTs, installed after December 1988, must be certified that the tank and piping were properly installed; by December 1993, 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, piping that prevent spills and overfills, and leak detection devices 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, suspected releases and confirmed releases.

- Records must be maintained to prove leak detection performance and upkeep, inspection of corrosion protection systems, proper repair or upgrade, and documentation of proper closure.

- New hazardous substance USTs, installed after December 1988, containing hazardous materials (hazardous wastes are covered in 40 CFR 260-270) must meet the same installation, corrosion protection, spill and overfill prevention, corrective action, and closure requirements, but also have secondary containment and interstitial monitoring.

- Existing hazardous substance USTs, installed before December 1988, must meet the same standards as existing petroleum USTs, leak detection; must be installed on an accelerated schedule; and in addition, chemical USTs must have secondary containment in place by 1998.

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

These definitions were obtained from Federal and FAA Regulations 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 an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from an 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 ground water. This includes, but is not limited to, releases from the belowground portion of a UST 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 280.12).

- *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 regulated 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 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 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 petroleum or hazardous substances in 40 CFR 280.60 through 280.67. These tanks include:
    1. wastewater treatment tank systems
    2. any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954
    3. any UST system that is a part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR Part 50, Appendix A
    4. airport hydrant fuel distribution systems
    5. UST system with field-constructed tanks (40 CFR 280.10(e)).

- *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 that are not required to meet the requirements found in 40 CFR 280, including:
    1. any UST system holding hazardous wastes listed under Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances
    2. any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act
    3. equipment of machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment
    4. any UST system whose capacity is 110 gallons (gal) or less
    5. any UST system 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 (40 CFR 280.10(b)).

- *Existing Tank System* - a tank system used to contain an accumulation of regulated substances or for which installation has commenced on or before 22 December 1988. Installation is considered to have commenced if:
    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, and
    2. (1) either a continuous onsite physical construction or installation program has begun, or
       (2) 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 (40 CFR 280.12).

- *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 for the storage of material prior to their introduction into the production process or for the storage of finished products or byproducts 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 280.12).

- *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).

- *Hazardous Substance UST System* - any UST system that contains a hazardous substance defined in section 101(14) of the Comprehensive Environmental Compensation and Liability Act 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. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces (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).

- *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 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 has commenced after December 22, 1988 (40 CFR 280.12).

- *Noncommercial Purposes with Respect to Motor Fuel* - not for resale (40 CFR 280.12).

- *Oil* - is defined in 40 CFR 122.2 as oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse.

- *On the Premises where Stored (heating oil)* - UST systems located on the same property where the 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 280.12).

- *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 the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (but not including any substance regulated as a hazardous waste under subtitle C), and
    2. petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 ^{o}F and 14.7 pounds (lb) per square inch absolute (psia)).

  (NOTE: 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 an UST into groundwater, surface water, or subsurface soils (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).

- *SARA* - Superfund Amendments and Reauthorization Act (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 hauled to a treatment facility (40 CFR 280.12).

- *Storm water or Wastewater Collection System* - piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off 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, man-made excavation, or diked area formed of 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 ten 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 1100 gal or less capacity used for storing motor fuel for noncommercial purposes
    2. tank used for storing heating oil for consumptive use on the premises where stored
    3. septic tanks
    4. pipeline facility (including gathering lines) which are regulated by other acts
    5. surface impoundment, pit, pond, or lagoon
    6. stormwater or wastewater collection system
    7. flow-through process tank
    8. liquid trap or associated gathering lines directly related to oil or gas production and gathering operations
    9. storage tank situated in an underground area if the storage tank is situated upon or above the surface of the floor such as basements or tunnels
    10. tanks holding 110 gal or less, or
    11. emergency spill and overfill tanks.

(NOTE: The definition of UST does not include pipes connected to any tank which is described in paragraphs (a) through (i) of this definition.)

- *Upgrade* - the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of a UST system to prevent the release of product (40 CFR 280.12).

- *UST System or Tank System* - 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).

UST MANAGEMENT PROTOCOL

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:
All Facilities	10-1 through 10-4
Substandard USTs	10-5
New or Upgraded USTs	10-6 through 10-10
Metallic USTs	10-11
Heating Oil USTs	10-12
UST Filling	10-13 and 10-14
Corrosion Protection and Repairs	10-15 and 10-16
Release Detection	10-17 through 10-19
UST Releases	10-20 through 10-26
Hazardous Substance USTs	10-27
Deferred UST Systems	10-28
Documentation	10-29 and 10-30
Changes in Service or Closure	10-31 through 10-37

UST MANAGEMENT

Records to Review

- Records of all spills, leaks, and associated site assessment/cleanup activities (for 3 years (yr))
- Official correspondence with state implementing agency
- Spill Prevention and Response (SPR) plan
- Records of spill response training programs
- Results of all UST testing, sampling, monitoring, inspection, maintenance, and repair work (for 1 yr)
- Registration records for all in-service, temporarily out-of-service, and permanently closed tanks
- Records of all spills, leaks, and associated site assessment/cleanup activities (for 3 yr)
- Records for UST disposal, closure, and removal from activity and results of excavation area assessment (for 3 yr)

Physical Features to Inspect

- Any site with a UST
- Oil and Hazardous Substance Site

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
10-1. Determine actions or changes since previous review of UST management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report.
...	...
10-2. Copies of all relevant Federal, Agency, state, and local regulations and guidance documents on UST operation, maintenance and closure should be available at the facility (GMP).	Verify that copies of the following regulations are available and kept current: - Executive Order (EO) 12088, *Federal Compliance With Pollution Control Standards.* - 40 CFR 280, *Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST).* - Appropriate state and local regulations.
...	...
10-3. Facilities are required to abide by state and local regulations (EO 12088, Section 1-1).	Verify that the facility is abiding by state and local requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (NOTE: Issues typically regulated by state and local agencies include: - operational standards - permitting requirements - replacement and removal schedules - cathodic protection requirements - alarm system requirements.)
...	...
10-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding).	Determine if any new regulations concerning USTs have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

SUBSTANDARD USTs
 	
10-5. Substandard UST systems must be upgraded, closed, or removed from service by 22 December 1998 (40 CFR 280.21(a) through 280.21(c)).
	(NOTE: See Appendix 10-1 for guidance on applicability of checklist items.)
	
	(NOTE: If a release detection system is not available for the UST, it must be phased out in 1-5 yr.)
	
	Determine if there are currently any plans for upgrades or decommissioning of a substandard UST.
	
	Verify that upgrading of steel USTs includes one of the following methods:
	
	- 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
	- 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 3-6 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 when spill and overfill equipment is added, the tank meets the same standards as new USTs.
	
	Verify that piping that routinely contains regulated substances and is in contact with the ground is cathodically protected.

...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
NEW OR UPGRADED USTs	
10-6. 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. Verify that overfill prevention equipment does one of the following: - automatically shuts off flow into the tank when the tank is no more than 95 percent full - alerts the transfer operator when the tank is no more 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, alert the operator with a high-level alarm one min before overfilling, or automatically shut 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 25 gal at one time.) (NOTE: All existing tanks must be upgraded by 1998.)
...	...
10-7. 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 the facility has brought any USTs into service after 8 May 1986. Verify that appropriate notification was issued. (NOTE: State forms may be used for notification in lieu of an USEPA form 7530. These notices must be sent to the appropriate agency.)
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

10-8. 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)).	Verify that USTs conform to industry standards by reviewing records.
	
	Verify that USTs meet the following:
	
	- *they have 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 (expert installed), 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.)

...	...
10-9. 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 new UST systems have been properly installed by reviewing records for certification. Verify that if the facility does its own installation of USTs, the installation is done according to standard practices. Verify that the installer was certified by manufacturer or implementing agencies.
...	...
10-10. Facilities are required to use UST systems made of or lined with materials compatible with the stored substance (40 CFR 280.32).	Verify that the substances stored in UST systems are compatible with the system. Determine which USTs are being used to store a substance other than that for which they were originally intended.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
METALLIC USTs	
10-11. 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 USTs are appropriately protected from corrosion by inspecting records and interviewing personnel. Verify that the tanks are pressure-tested regularly. (NOTE: Facilities 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 Department of Transportation. - both of the following criteria are met: - the underground buried storage capacity of the facility is 42,000 gal or less of oil - the storage capacity which is not buried at the facility is 1320 gal of oil or less and no single container exceeds a capacity of 660 gal (40 CFR 112.1(d)(2).)
...	...
HEATING OIL USTs	
10-12. USTs used to store heating oil for consumptive use on the premise should be stored in tanks that meet the requirements outlined in 40 CFR 280 (GMP).	Determine if the facility has tanks used for storing heating oil for consumptive use on the premise. Verify that these tanks meet release detection requirements, spill and overfill protection requirements, corrosion control requirements, and release reporting requirements applicable to tanks that meet the definition of UST. (NOTE: Under 40 CFR 280.12, USTs storing heating oil for consumptive use on the premises are exempted from the regulatory definition of UST.)
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
UST FILLING	
10-13. The filling of a UST must include the prevention of overfilling and spilling of the substance (40 CFR 280.30 (a)).	Determine if there is a problem with overfilling or USTs or spills by observing the filling operations, reviewing records, and checking the ground around the fill-lines for visible or odorous indications of contamination. Determine if 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 the product to be transferred. Verify that fill-lines are capped and locked. Verify that the transfer is monitored constantly.
...	...
10-14. Facilities 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 facility has reported, contained, and cleaned up any and all spills or overfills which met the following criteria: - spills or overfills of petroleum that resulted in a release to the environment of more than 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.) Verify that the facility has contained and immediately cleaned-up a spill or overfill of petroleum that is less than 25 gal and a spill or overfill of a hazardous substance that is less than the reportable quantity. 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.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
CORROSION PROTECTION AND REPAIRS	
10-15. UST systems with corrosion protection must meet specific requirements (40 CFR 280.31).	Determine which UST systems have corrosion protection. 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. Verify that all cathodic protection systems are tested within 6 mo after installation and every 3 yr thereafter. Verify that UST systems with impressed current cathodic protection are inspected every 60 days. 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. Verify that inspections are carried out by a qualified cathodic protection tester.
...	...
10-16. Repairs to USTs must be performed according to industry code (40 CFR 280.33, 280.43, and 280.44).	Determine if there have been any repairs by reviewing the records and interviewing personnel. Determine who does repairs to USTs and that the following procedures are used to repair USTs: - fiberglass reinforced tanks are repaired by the manufacturers 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 manufacturers specifications. Verify that tanks and piping that have been replaced or repaired are tested for tightness within 30 days. (NOTE: Tanks and piping need not be tested if: - repairs which 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: - 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.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
RELEASE DETECTION **10-17.** Facilities with new and existing USTs are required to provide a method, or combination of methods of release detection (40 CFR 280.10(d), 280.40, and 280.45).	Verify that the installed release detection system can detect a release from any portion of the tank and the connected underground piping. Verify that the facility has a program in place (or at least in the proposed stage) for provisions of release detection. Verify that the appropriate schedule is being complied with (see Appendix 10-2). (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 10-3 and 10-4 for information on release detection methodologies.) Verify that records are kept as follows: - all written performance claims pertaining to any release detection system used for 5 yr from the date of installation - the results of any sampling testing or monitoring for 1 yr - the results of tank tightness testing, until the next test is done - written documentation of calibration, maintenance, repair, of release detection equipment permanently located onsite, at least one yr after the servicing is done - schedules of required calibration and maintenance provided by the release detection equipment manufacturer, 5 yr after the date of installation.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

10-18. 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 10-3 except for:
	
	- UST systems that 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 that 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 that hold less than 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 10-4:
	
	- 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 than 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.)

...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

10-19. UST systems containing fuel used solely for emergency generators should meet specific release detection system requirements (GMP).	Verify that tanks are monitored every 30 days using the method in Appendix 10-3 except for:
	- 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 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 10-3:
	- 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 than 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.)

...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
UST RELEASES	
10-20. Facilities with UST systems are required to report releases under specific conditions (40 CFR 280.50).	Determine if the facility has reported any and all releases that met the following criteria: - 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.
...	...
10-21. 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 280.52).	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. 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. (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.)
...	...
10-22. Facilities 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 facility personnel are aware of the following initial response actions: - 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.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-23. Facilities 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: - 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 has previously been confirmed - 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.
...	...
10-24. Facilities 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: - 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.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-25. Facilities 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 any release sites at the facility where free product has been confirmed. Verify that free product removal is done so that the spread of contamination is minimized. 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: - 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 or offsite discharges during the recovery operation and where this discharge will be located - the type of treatment used for any discharge during the recovery operation and where this discharge will be located - the steps taken to obtain any required permits - the disposition of the recovered free product.
...	...
10-26. Facilities 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: - 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.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**

HAZARDOUS SUBSTANCE USTs
 	
10-27. Hazardous substance USTs must meet specific standards (40 CFR 280.12).
	Verify that existing hazardous substance USTs meet release detection standards for petroleum USTs.
	
	Verify that existing hazardous substance USTs meet the requirements for new hazardous substance USTs by 22 December 1998 as stated below:
	
	- 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, and
	  - 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, and
	  - the tank is completely surrounded.
	
	Verify that underground piping is equipped with secondary containment which satisfies the requirements for UST secondary containment.
	
	Verify that piping which delivers regulated substances under pressure is equipped with an automatic line leak detector.
	
	Verify that when other release detection methods are used, they are approved by the implementing agency.

...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
DEFERRED UST SYSTEMS	
10-28. 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: - 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.
...	...
DOCUMENTATION	
10-29. Facilities with USTs are required to meet specific reporting requirements (40 CFR 280.34(a)).	Verify that the facility has submitted the following when applicable: - notifications of new USTs - release reports - planned or complete corrective actions - notice of closure or change-in-service.
...	...
10-30. Facilities with USTs are required to meet specific record-keeping requirements (40 CFR 280.34(b), 280.34 (c), and 280.74).	Verify that records are kept of the following: - 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 - closure records - results of any site investigations. Verify that records are available at one of the following: - at the UST site and immediately available for inspection - at a readily available alternative site and provided for inspection.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
CHANGES IN SERVICE OR CLOSURE	
10-31. USTs which are put out of service temporarily, must have continued maintenance (40 CFR 280.70).	Determine if the facility has any out-of-service USTs. Verify that proper maintenance is being performed for the following: - corrosion protection - release detection. Verify that if the UST has been out-of-service for approximately 1 yr or more, plans have been made for permanent closure. (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 is capped and secured. 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.
...	...
10-32. 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 the facility is planning to close of change any USTs. Verify that notification of changes were given within 30 days.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-33. UST closure must be done in one of the following methods: - removed from the ground - left in place with substance removed and filled with an inert solid material, closing it to all future outside access (40 CFR 280.71(b)).	Determine if there are any closed USTs or USTs in the process of being closed at the facility. Verify that tanks being permanently closed are emptied and cleaned by removing all liquids and accumulated sludges. Determine if there are any possible abandoned USTs and if there are plans to close the UST off in an appropriate manner. Determine if a site assessment was made to ensure that no releases to the environment have occurred by reviewing records.
...	...
10-34. 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 facility has continued to use to store an unregulated substance (a change-in-service). Verify that prior to the change, the tank was emptied and cleaned. Verify that prior to the change a site assessment was done.
...	...
10-35. 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. (NOTE: These requirements are met if one of the leak detection methods outlined in checklist item 10-11 has occurred.)
...	...
10-36. Facilities 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 facility has any USTs which were closed prior to 22 December 1988. Verify that the excavation zone of these USTs has been assessed and cleanup done as needed.
...	...

COMPLIANCE CATEGORY: UST MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
10-37. 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: - by the facility - at the implementing agency if they cannot be maintained at the closed facility.

Appendix 10-1

UST Applicability Guide

	Applicable CFR Citations	Checklist Numbers's
USTs as defined in 40 CFR 280.12 (see definitions)	40 CFR 280	all
Excluded USTs (see definitions)	none	10-12, 10-19
Deferred USTs (see definitions)	40 CFR 280.11	10-28
USTs storing fuel for emergency generators	40 CFR 280.20 through 280.22 280.30 through 280.34 280.50 through 280.53 280.60 through 280.67 280.70 through 270.74	10-5 through 10-10 10-13 through 10-16 10-19 through 10-26 10-28 through 10-36

Appendix 10-2

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 10-3

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:

   i) inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day

   ii) 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

   iii) the regulated substance inputs are reconciled with delivery receipts by measurements of the tank inventory volume before and after delivery

   iv) deliveries made through a drop tube that extends to within 1 foot of the tank bottom

   v) product dispensing is metered and recorded within the local standards of product withdrawn

   vi) the measurement of any water level in the bottom of the tank is made to the nearest one-eight of an inch at least once a month.

2. **Manual gauging:** manual tank gauging must meet the following requirements:

   i) 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

   ii) level measurements are based on an average of two consecutive stick readings at both the beginning and end of the period

   iii) the equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eight of an inch

   iv) 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

   v) 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
1001-2000 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:

i) 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

ii) 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:

i) 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

ii) 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

iii) the measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other unknown interferences so that a release could go undetected for more than 30 days

iv) the level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank

v) 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

vi) in the UST excavation zone, the site is assessed to ensure compliance with the requirements of paragraph 5 subparagraph i through iv 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

vii) monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

6. Ground-water monitoring: Testing or monitoring for liquids in the groundwater must meet the following requirements:

i) the regulated substance stored is immiscible in water and has a specific gravity of less than one

ii) groundwater is never more than 20 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/sec (i.e., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials

iii) 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 groundwater conditions

iv) monitoring wells should be sealed from the ground surface to the top of the filter pack

v) monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible

vi) 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 groundwater in the monitoring wells

vii) within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements of paragraphs 6 i-v 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

viii 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:

i) 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

ii) 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

a) the secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10 to the minus six cm/sec for the regulated substance stored) to direct a release to the monitoring point and permit its detection

b) 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

c) 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

d) the groundwater, 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

e) the site is assessed to ensure that the secondary barrier is always above the groundwater and not in a 25-yr flood plain, unless the barrier and monitoring designs are for use under such conditions

f) monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

iii) 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:

i) it can detect a 0.2 gal/h leak rate or a release of 150 gal within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05, or

ii) 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 psi line pressure within one hour. 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, groundwater 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 10-4

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 10-2 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 five years. 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 inch 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 month 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, groundwater 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: UST MANAGEMENT Federal Aviation Administration	DATE:	REVIEWER(S):

STATUS NA C RMA	REVIEWER COMMENTS:

Section 11

Water Quality Management

Section 11

WATER QUALITY MANAGEMENT

A. Applicability

This section includes regulations, responsibilities and compliance requirements associated with wastewater discharge and potable water at FAA facilities.

- **Wastewater**

Wastewater discharge can include any of the following:

1. Sanitary wastewater discharge directly to a receiving stream or through an FAA treatment facility
2. Sanitary or industrial wastewater discharge to a Publicly Owned Treatment Works (POTW) or other non-FAA facility
3. Storm water runoff from operational areas of the facility to a receiving stream or waterbody.
4. Industrial or storm wastewater drained to an industrial waste reservoir.

Most FAA facilities have wastewater discharge of one kind or another, and therefore this section will be applicable to most facilities.

- **Drinking Water**

FAA facilities that meet all the criteria listed below are not required to comply with the requirements of the *Safe Drinking Water Act (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. Facility gets all of its water from a public water system that is owned or operated by another party (non-FAA).
3. Facility does not sell water to any party.

Since the FAA facilities obtain their drinking water from purchase agreements with municipalities or bottled water, the Federal drinking water standards do not apply and are not included in this manual.

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).

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 U.S. Environmental Protection Agency (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)).

C. State/Local Regulations

- **Wastewater**

States normally have wastewater discharge legislation and regulations which require permitting similar to the National Pollutant Discharge Elimination System (NPDES) program. The state is often delegated 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 even though a NPDES permit has been issued by the USEPA. This dual permitting is common. The states and the USEPA normally cooperate in the permit issuance process to insure 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 also have more stringent requirements for wastewater treatment plant operations. Many states have Sewage Treatment Plant (STP) operator licensing and certification programs which require that an operator pass an exam and have a required amount of experience.

Local entities (counties, cities) may also have enforceable wastewater discharge limitations which regulate discharges to a POTW. Local limitations often include pH, temperature, and concentrations of various organic and inorganic compounds.

- **Drinking Water**

States often require testing and treatment of water obtained from wells or cisterns.

D. FAA Regulations/Requirements

- None at this time.

E. Key Compliance Requirements

- Discharge Permits - NPDES permits are required for point source discharges to *navigable waters.* Discharges shall comply with all terms and conditions of an USEPA or state issued permit.

- Monitoring, Record keeping and Reporting - Discharge permits usually require monitoring which may include the facility use and maintenance of equipment for influent and effluent and receiving water sampling. Record keeping and reporting which may include scheduled discharge monitoring reports (DMR) are also required.

- Discharges to POTWs - Discharges to equal public treatment facilities shall meet all applicable general and categorical pretreatment standards in 40 CFR 401-471. Agency facilities that discharge to public treatment facilities must adhere to the discharge limitations that are stipulated in local ordinances. However, many local POTW authorities have not yet developed pretreatment programs.

- Industrial Pretreatment - The USEPA has set effluent standards for many industries which discharge to POTWs. None of these standards currently apply to FAA facilities.

- 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 in order to maintain their certification.

- Sludge Disposal - Sludge from wastewater treatment plants 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 which would render it as a hazardous waste. Permits are normally required to dispose of sludge by land application.

F. Responsibility for Compliance

- The Regional Environmental Coordinator and the Sector Environmental Coordinator are the individuals with primary responsibility. All contacts with other FAA personnel will be made through these individuals.

G. Key Compliance Definitions

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

- *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).

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

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

- *Discharge of Pollutant* - the addition of any pollutant to navigable waters from any point source and any addition of any pollutant to the waters of the contiguous zone or the ocean zone or the ocean from any point source, other than from a vessel or other floating craft (40 CFR 401.11(h)).

- *Effluent Limitations* - 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)).

- *Good Management Practices (GMPs)* - methods, measures, or practices to prevent or reduce water pollution, including, but not limited to, structural and nonstructural controls, and operation and maintenance procedures. GMPs may be applied before, during, or after pollution-producing activities in order to reduce or eliminate the introduction of pollutants into water bodies.

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

- *Industrial Activities* - in relation to storm water runoff, industrial activities include:
    1. facilities subject to storm water 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 storm water 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 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 mgd 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 through 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)).

- *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 nonelectroplating sources (40 CFR 413.02).

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

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

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

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

- *Navigable Waters* - all navigable waters of the United States, tributaries of navigable waters of the United states, interstate waters, intrastate lakes, rivers, and streams which are utilized by interstate travelers for rivers, and streams which are utilized by interstate travelers for recreational or other purposes, intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce and intrastate lakes, rivers, and streams which are utilized for industrial purposes by industries in interstate commerce (40 CFR 401.11(l)).

- *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 standards of performance under section 306 of the Act, which will be applicable to such source as such standards is thereafter promulgated in accordance with section 306 of the Act (40 CFR 401.11(e)).

- *Non-Contact Cooling Water* - the water that is contained in a leak-free system, i.e., no contact with any gas, liquid, or solid other than the container for transport; the water shall have no net poundage addition of any pollutant over intake water levels (40 CFR 401.44(o)).

- *NPDES Permit* - a permit granted by USEPA to a direct discharger which permits wastewater discharge to a watercourse in accordance with the conditions of the permit. NPDES means National Pollutant Discharge Elimination System (40 CFR 403.3(l)).

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

- *Point Source* - any discernible confined and discrete conveyance including but not limited to a pipe, ditch, channel, or conduit from which pollutants are or may be discharged (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 (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, or waste product (40 CFR 401.44(q)).

- *Publically Owned Treatment Works (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)).

- *Storm Water Discharge Associated with an Industrial Activity* - The discharge from any conveyance which is used for collecting and conveying storm water 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 storm water 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 only includes only storm water 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 storm water (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).

- *TTO* - total toxic organics (40 CFR 413.02).

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

WATER QUALITY MANAGEMENT PROTOCOL

GUIDANCE FOR WORKSHEET USERS

	REFER TO WORKSHEET ITEMS:
All Facilities	11-1 through 11-4
Drinking Water	11-5
Wastewater:	
NPDES Permits	11-6 through 11-11
Discharges to POTWs	11-12 through 11-14
POTW Operation	11-15

Records to Review

- NPDES Permits
- NPDES Permit renewal applications (if expire within 180 days)
- Discharge monitoring reports for the past year
- 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
- Spill Prevention Control and Countermeasure (SPCC) plan
- All records required by SPCC plan
- All notices of noncompliance
- All notices of violations
- NPDES state or Federal inspection reports
- Sewage treatment plant operator certification
- Administrative Orders
- Sewer and storm drain layout
- Stormwater pollution prevention plan
- Local sewer ordinance
- Local service use permit
- Notification to local POTW
- Old Spill Reports
- Repair/Maintenance records for the wastewater treatment system
- As Built Drawings

Physical Features to Inspect

- Discharge outfall pipes
- Wastewater treatment facilities
- Industrial treatment facilities
- Streams, rivers, open waterways
- Floor & sink drains (especially in industrial areas)
- Storm water collection points (especially in industrial areas)
- Oil storage tanks
- Oil/water separators

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
ALL FACILITIES	
11-1. Determine actions or changes since previous review of wastewater management (GMP).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report.
...	...
11-2. Copies of all relevant Federal, FAA, state, and local regulations and guidance documents on wastewater management should be made available at the facility (GMP).	Verify that copies of the following regulations are available and kept current: - Executive Order (EO) 12088, *Federal Compliance With Pollution Control Standards.* - 40 CFR 122, *EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.* - 40 CFR 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants.* - 40 CFR 403, *General Pretreatment Standards for New and Existing Sources.*
...	...
11-3. Facilities are required to abide by state and local water quality regulations (EO 12088, Section 1-1).	Verify that the facility is abiding by state and local water quality requirements. Verify that the facility is operating according to permits issued by the state or local agencies. (NOTE: Issues relating to wastewater typically regulated by state and local agencies include: - nonpoint sources - NPDES permits - 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 pollution prevention plan - stormwater discharges.) (NOTE: Issues relating to drinking water 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 - UIC programs.)

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
11-4. Facilities will meet regulatory requirements issued since the finalization of the manual (A finding under this checklist item will have the citation of the new regulation as a basis of finding.)	Determine if any new regulations concerning water quality have been issued since the finalization of the manual. Verify that the facility is in compliance with newly issued regulations.
...	...
DRINKING WATER	
11-5. Drinking water provided at the facility should be potable (GMP).	Verify that potable water is provided at the facility.
...	...
WASTEWATER	
NPDES Permits	
11-6. Facilities 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. Verify the facility has obtained the proper permits for point source discharges and/or treatment works treating domestic sewage. Verify that the facility is operating according to permit requirements such as: - 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: Stormwater runoff may be addressed in the NPDES permit.)
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
11-7. Facilities 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 facility is discharging stormwater associated with an industrial activity. Verify that an application has been submitted for a permit.
...	...
11-8. Samples required by NPDES permits must be collected in accordance with proper collection, treatment, preservation, and shipping procedures in "Standard Methods for Water Analysis" (40 CFR 136.1 through 136.4).	Verify that: - proper sample containers are used - samples are refrigerated during compositing - proper preservation techniques are used - flow-proportioned samples are obtained where required by permit - sample holding times prior to analyses conform with requirements. - the chain of custody is maintained from sampling point through analytic testing to results (essential if litigation occurs). Determine if monitoring and analysis are performed more frequently than permits require. Verify that results are reported in facility's self-monitoring report.
...	...
11-9. Analytical testing must be done in accordance with USEPA approved analytical procedures (40 CFR 136.3).	Determine if: - an 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).
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
11-10. Facilities with NPDES permits are required to meet specific reporting requirements (40 CFR 122.41(l)).	Verify that the facility gives notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility when: - 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 facilities sludge use or disposal practices. Verify that the facility notifies the Director of any planned changes at the permitted facility or activity which may result in noncompliance with permit requirements. Verify that monitoring is reported as required on the permit. Determine if the facility is monitoring more frequently than required. Verify that if the facility is monitoring more frequently than required by permit these results are also being reported. 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. Verify that noncompliance which might endanger health or the environment is reported as follows: - orally within 24 hours (h) from the time the facility becomes aware of noncompliance - in writing within 5 days of the time the facility becomes aware of noncompliance.
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS	**REVIEWER CHECKS:**
11-11. Even where not covered by NPDES permits, stormwater discharge on the facility should be uncontaminated and periodic surveillance of these discharges should be completed (GMP).	Determine which drains at the facility are connected to the storm sewer and the location of all outfalls and discharge points. Determine if there is evidence of contamination (oil sheen, discoloration, *etc.*) by physical review of stormwater discharge sites. Verify that oil/water separators connected to the storm sewer on the facility are operating properly and correctly maintained. Determine if there is evidence of contaminated waste streams discharging to floor drains connected to the stormwater discharge system by checking major industrial shops or industrial areas physically, including: - battery shop - corrosion control - engine shop - motor pool - paint shop - plating shop - petroleum, oils, and lubricants (POL) area.
...	...
Discharges to POTWs	
11-12. Facilities must not discharge into a POTW any pollutant which would cause *pass through* or *interference* (40 CFR 403.5(a) and 403.5(c)(2)).	Determine the following: - what point source discharges are at the facility - what drains in the facility lead to the treatment works - what do 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. Determine which drains are connected to the sanitary sewer draining to a POTW and possible pollutants entering these drains. Verify that the facility is not discharging to a POTWs pollutants which would cause a *pass through* or *interference* (see definitions). Determine if the POTW has imposed any pretreatment standards or reporting requirements on the facility and verify that they are being met.
...	...

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
11-13. Facilities shall not introduce specific pollutants into a POTW (40 CFR 403.5(b)).	Verify that pollutants which create a fire or explosion hazard in the POTW, including but not limited to waste streams with a closed cup flashpoint of less than 140 °F are not being discharged from the facility to a POTW. Verify that pollutants which will cause corrosive structural damage to the POTW are not being discharged from the facility to a POTW. Verify that in no case are discharges with a pH below 5.0 released. Verify that solid or viscous pollutants in amounts which will cause obstruction to the flow are not being discharged to the POTW. Examples are: - pieces of metals, rubber, and wood from shops - sand and sediment. Verify that no pollutants, including oxygen demanding pollutants, are released at a flow rate or concentration that will cause interference with the POTW. Verify that heat in amounts that would inhibit biological activity at the POTW resulting in interference is not discharged, including: - scrubber water - boiler blow down. (NOTE: In no case will the temperature of discharges result in a temperature at the POTW of greater than 104 °F.) Verify that petroleum, oil, nonbiodegradable cutting oil, or products of mineral oil origin is not discharged in amounts that would result in a pass through or interference (specifically check maintenance areas and oil/water separators). Verify that pollutants which would result in the presence of toxic gases, vapors, or fumes within the POTW in quantities that would cause acute worker health and safety problems are not discharged. Verify that no trucked or hauled pollutants are discharged except at discharge points designated by the POTW. Determine if the facility has been granted any exemptions or variances concerning its discharges.
...	...
11-14. Facilities are required to notify the POTW immediately of any discharge, including slug loading, that could cause problems to the POTW (40 CFR 403.12(f)).	Verify that personnel at the facility are aware of the need to notify the POTW of any discharge that would cause problems.

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Federal Aviation Administration	
REGULATORY REQUIREMENTS:	**REVIEWER CHECKS:**
POTW Operations **11-15.** Personnel engaged or employed in operation and maintenance of water pollution control facilities should be trained in safety and occupational hazards (GMP).	Determine if periodic refresher training is conducted by interviewing operating/maintenance staff at plant. Verify that training is conducted by reviewing operating staff training records.

INSTALLATION:	COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT Federal Aviation Administration	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		